

**SOURCES AND LEVELS OF DISTRESS AMONG MEDICAL STUDENTS AT TWO
NEWLY ESTABLISHED MEDICAL SCHOOLS IN ZIMBABWE**

By

MQEMANE TSHABABA

REGISTRATION NUMBER: M173417

A thesis submitted to the Department of Psychology in fulfilment of the requirements for the
degree of

DOCTOR OF PHILOSOPHY IN PSYCHOLOGY

In the

JULIUS NYERERE SCHOOL OF SOCIAL SCIENCES

At

GREAT ZIMBABWE UNIVERSITY

MAIN SUPERVISOR: PROF R CHIRESHE

CO-SUPERVISOR: DR J. MUTAMBARA

Submission date: June 2023

DECLARATION

Student Number M173417

Sources and Levels of Distress among Medical Students at Two Newly Established Medical Schools in Zimbabwe

I declare that this thesis is my own work and that all the sources that I have used or quoted have been indicated and acknowledged by means of complete references appended to this thesis. I further declare that I submitted this thesis to originality checking software and that it falls within accepted requirements for originality. I further declare that I have not previously submitted this work or part of it, for examination at Great Zimbabwe University for another qualification or at any other higher education institution.

Signature:



Date: 29 June 2023

DEDICATION

I dedicate this thesis to my wife Mary Nyaradzo, my children Comfort Bhekuthando, Fortune Mayibongwe, and Victoria Minenhle, and to my siblings Londuku and Bekezela.

ACKNOWLEDGEMENTS

I would like express my sincere gratitude to all those who dedicated their time and effort towards the completion of this programme. A special mention goes to my Main Supervisor, Professor Regis Chireshe for his advanced and critical professional guidance, patience and his unwavering support throughout this academic journey. I am also greatly indebted to Doctor Julia Mutambara my Co-Supervisor for the support and encouragement she gave me throughout the study period. Her contributions to this project thesis are indeed invaluable.

Special thanks to my friend and mentor, Doctor Patrick Senderayi for giving me hope and encouragement during the course of the study. His contributions were indeed eye-opening.

I am very much grateful to my family, especially my wife Mary Mutami, for standing with me throughout this journey. Thank you for the love, care, prayers and sacrifices. Many thanks go to my children, Comfort Bhekuthando, Fortune Mayibongwe and Victoria Minenhle for all the support and prayers. To my siblings, Londuku and Bekezela, I say thank you for being a family to me after losing our beloved parents (Joppa Tshababa and Payina Nyathi).

Finally, special thanks goes to Mr Mathew Paradza who helped and advised me on data analysis.

ABSTRACT

The study sought to investigate the sources and levels of distress among medical students at two newly established medical schools in Zimbabwe. Lazarus and Folkman's (1984) Transactional Model of Stress and Coping was used to guide the study. The study employed a pragmatic research philosophy, a mixed methods approach and a concurrent parallel design. A sample of 123 medical students drawn from two newly established medical schools in Zimbabwe was used for the study. The participants' ages ranged from 18- 47 years. The study used structured questionnaires and face-to-face interviews to collect data. Quantitative and qualitative data were collected separately, analysed independently, and merged at the interpretation stage. Numerical codes were used for the quantitative data. The quantitative data were entered into the SPSS version 28 and analysed using regression analysis. The computed quantitative data showed significant relationships between sources of distress and medical students' distress. The qualitative data were analysed thematically. Qualitative data were reported under the following themes; academic workload and distress, medical students' personal experiences and distress, exposure to death and dying and distress, finance and distress, and the strategies used by medical students to cope with distress. The study concluded that medical students suffer from distress emanating from academic workload, exposure to dying patients, personal life events and lack of finance. The study recommended a higher institutions mental health policy to specifically look at mental health issues at institutions of higher learning. The study further recommended the mandatory establishment of psychology clinics at all universities to respond to mental health issues affecting students at institutions of higher learning. Medical students proposed a distress management and coping model for use during medical training.

KEY TERMS

Anxiety, Burnout, Coping, Depression, Disengagement, Distress, Exhaustion, Interpretation, Life event, Medical students, Stress, Workload, Zimbabwe

TABLE OF CONTENTS

DECLARATION	i
DEDICATION	i
ACKNOWLEDGEMENTS	iii
ABSTRACT.....	iv
LIST OF FIGURES	xii
LIST OF TABLES	xiii
CHAPTER 1: INTRODUCTION.....	1
1.1 INTRODUCTION	1
1.2 BACKGROUND TO THE STUDY	1
1.3 STATEMENT OF THE PROBLEM	7
1.4 AIM OF THE STUDY.....	7
1.5 MAIN RESEARCH QUESTION	8
1.5.1 Sub Research Questions.....	8
1.6 HYPOTHESES	8
1.7 OBJECTIVES OF THE STUDY	8
1.8 SIGNIFICANCE OF THE STUDY	9
1.9 THEORETICAL FRAMEWORK	9
1.10 ASSUMPTIONS OF THE STUDY	12
1.11 LIMITATIONS OF THE STUDY	12
1.11.1 Overcoming limitations.....	13
1.12 DELIMITATIONS	13
1.13 DEFINITION OF TERMS	13
1.14 PROGRAMME OF THE STUDY	14
1.15 SUMMARY	15
CHAPTER 2: LITERATURE REVIEW.....	16
2.1 INTRODUCTION	16
2.2 ACADEMIC WORKLOAD AND DISTRESS	16
2.2.1 Assignments, in-class tests, examinations and distress.....	21
2.2.2 Competition for grades and distress.....	28
2.2.3 The nature of the medical curricular and distress	30
2.2.4 Semester duration and distress.....	34
2.3 MEDICAL STUDENTS' EXPOSURE TO DYING PATIENTS, DEATH AND DISTRESS.....	36
2.3.1 Dying patients in hospital wards and distress	37

2.3.2 Examination of dead bodies for certification of death and distress	40
2.3.3 Infant deaths in maternity wards and distress	42
2.4 PERSONAL LIFE EVENTS AND DISTRESS	44
2.4.1 Pregnancy and distress	47
2.4.2 Gain of a new member in the family and distress	48
2.4.3 Change in health of self or family member and distress	49
2.4.4 Death of a loved one and distress.....	51
2.4.5 Marital separation and distress.....	53
2.4.6 Interpersonal relationships and distress	54
2.5 FINANCIAL STATUS AND DISTRESS	57
2. 6 LEVELS OF DISTRESS	59
2.7 COPING WITH DISTRESS	62
2.7.1 Problem focused coping.....	63
2.7.2 Emotion-focused coping	64
2.7.3 Potentially maladaptive emotion-focused coping	65
2.8 IMPLICATIONS OF COPING ON DISTRESS	67
2.9 SUMMARY	68
CHAPTER 3: RESEARCH METHODOLOGY	70
3.1 INTRODUCTION	70
3.2 RESEARCH PHILOSOPHY	70
3.3 RESEARCH APPROACH	72
3.3.1 Quantitative Approach	73
3.3.2 Qualitative Approach	74
3.4 RESEARCH DESIGN	76
3.5 POPULATION AND SAMPLING	77
3.5.1 Population	77
3.5.2 Sample and sampling techniques	78
3.5.2.1 Stratified Sampling technique	79
3.5.2.2 Simple Random Sampling Technique.....	79
3.5.2.2.1 Demographics of participants	80
3.6 INSTRUMENTATION	81
3.6.1 Questionnaires.....	81
3.6.1.1 Revised Student-Life Stress Inventory (SSI-R)	82
3.6.1.2 Dispositional Version of the Coping Inventory	82
3.6.2 Semi-structured interview	83
3.7 RELIABILITY AND VALIDITY	84

3.7.1 Reliability.....	84
3.7.2 Validity	85
3.7.3 Pilot Study.....	86
3.7.3.1 The Pilot Study Sample.....	88
3.8 TRUSTWORTHNESS	88
3.8.1 Credibility	89
3.8.2 Transferability	89
3.8.3 Confirmability.....	89
3.8.4 Dependability	90
3.9 DATA COLLECTION PROCEDURES	90
3.10 DATA ANALYSIS.....	91
3.10.1 Analysis of quantitative data.....	91
3.10.2 Analysis of qualitative data.....	92
3.11 ETHICAL ISSUES	93
3.11.1 Permission.....	93
3.11.2 Anonymity	93
3.11.3 Confidentiality	93
3.11.4 Informed consent	94
3.11.5 Harm to participants.....	94
3.11.6 Beneficence.....	94
3.12 SUMMARY	95
CHAPTER 4: RESEARCH FINDINGS	96
4.1 INTRODUCTION	96
4.2 BIOGRAPHICAL DATA.....	96
4.3 RESEARCH SUB QUESTION 1: TO WHAT EXTENT DOES ACADEMIC WORKLOAD CONTRIBUTE TO MEDICAL STUDENTS' DISTRESS?.....	98
4.3.1 Quantitative results on how academic workload contributes to medical students' distress.....	98
4.3.2 Qualitative results on how academic workload contributes to medical students' distress.....	99
4.4 RESEARCH SUB QUESTION 2: HOW DOES EXPOSURE TO DYING PATIENTS CONTRIBUTE TO MEDICAL STUDENTS' DISTRESS?.....	101
4.4.1 Quantitative results on how the exposure of medical students to dying patients contributes to Medical Students' distress	101
4.4.2 Qualitative results on how the exposure of medical students to dying patients contribute to Medical Students' distress	102

4.5 RESEARCH SUB QUESTION 3: HOW ARE MEDICAL STUDENTS' PERSONAL LIFE EVENTS LINKED WITH DISTRESS?.....	102
4.5.1 Quantitative results on how medical students' personal life events link with distress	102
4.5.2 Qualitative results on how medical students' personal life events link with distress	103
4.6 RESEARCH SUB QUESTION 4: WHAT IS THE RELATIONSHIP BETWEEN FINANCIAL STATUS AND MEDICAL STUDENTS' DISTRESS?.....	104
4.6.1 Quantitative results on the relationship between financial status and medical students' distress	104
4.6.2 Qualitative results on the relationship between financial status and medical students' distress	106
4.7 RESEARCH SUB QUESTION 5: HOW ARE LEVELS OF DISTRESS DIFFERENT ACROSS THE FIVE LEVELS OF THE MEDICAL DEGREE PROGRAMME?.....	106
4.7.1 Quantitative results on the levels of distress across the five levels of the medical degree	106
4.7.2 Qualitative results on the levels of distress across the five levels of the medical degree.....	106
4.8 RESEARCH SUB QUESTION 6: WHAT COPING STRATEGIES DO MEDICAL STUDENTS USE TO COPE WITH DISTRESS?.....	108
4.8.1 Quantitative results on the problem-focused coping strategies used by medical students to cope with distress	108
4.8.2 Qualitative results on the problem-focused coping strategies used by medical students to cope with distress	110
4.8.2.1 Seeking social support for instrumental reasons	110
4.8.2.2 Suppressing competing activities	111
4.8.2.3 Restraint coping	111
4.8.3 Quantitative results on the emotion-focused coping strategies used by medical students to cope with distress	112
4.8.4 Qualitative results on the emotion-focused coping strategies used by medical students to cope with distress	113
4.8.4.1 Seeking emotional support.....	113
4.8.4.2 Religious coping	113
4.8.4.3 Acceptance.....	114
4.8.4.4 Humour	114
4.8.5 Quantitative results on the potentially maladaptive emotion-focused coping strategies used by medical students to cope with distress	115
4.8.6 Qualitative results on the potentially maladaptive emotion-focused coping strategies used by medical students to cope with distress	117

4.8.6.1 Venting emotions	117
4.8.6.2 Denial.....	117
4.8.6.3 Alcohol and drug use	118
4.9 SUMMARY	118
CHAPTER 5: DISCUSSION OF FINDINGS	119
5.1 INTRODUCTION	119
5.2 ACADEMIC WORKLOAD AND MEDICAL STUDENTS' DISTRESS	119
5.2.1 Assignments, tests and examinations.....	120
5.2.2 Competition for grades and distress.....	121
5.2.3 Semester duration and distress	122
5.2.4 The nature of the medical curriculum	124
5.3. LINK BETWEEN MEDICAL STUDENTS' DISTRESS AND EXPOSURE TO DEATH AND DYING PATIENTS	125
5.3.1 Death and dying of patients in hospital wards	125
5.4. PERSONAL LIFE EVENTS OF MEDICAL STUDENTS AND DISTRESS.....	127
5.4.1 Death of a loved one and distress.....	127
5.5 FINANCIAL STATUS AND DISTRESS	129
5.6 LEVELS OF MEDICAL STUDENTS' DISTRESS	131
5.7 COPING WITH DISTRESS.....	132
5.7.1 Problem-focused coping	133
5.7.2 Emotion-focused coping	134
5.7.3 Potential maladaptive emotion-focused coping	134
5.8 SUMMARY	135
CHAPTER 6: SUMMARY, CONCLUSIONS AND RECOMMENDATIONS.....	136
6.1 INTRODUCTION	136
6.2 A REVIEW OF THE RESEARCH PROBLEM.....	136
6.3 SUMMARY OF RELATED LITERATURE	137
6.3.1 Academic workload and medical students' distress.....	137
6.3.2 Medical students' exposure to dying patients and distress	137
6.3.3 Personal life events and medical students' distress.....	137
6.3.4 Financial status and medical students' distress.....	138
6.3.5 Levels of distress among medical students across the five levels of the medical degree programme	138
6.3.6 Strategies used by medical students to cope with distress	138

6.4 SUMMARY OF THE RESEARCH METHODOLOGY	139
6.5 SUMMARY OF THE FINDINGS	140
6.5.1 Research question 1: To what extent does academic workload contribute to medical students' distress?.....	140
6.5.2 Research question 2: How is the exposure of medical students to dying patients linked to distress?.....	140
6.5.3 Research question 3: How are personal life events of medical students linked to distress?.....	140
6.5.4 Research question 4: What is the relationship between finance and medical student's distress?	141
6.5.5 Research question 5: How are levels of distress different across the five levels of the medical degree programme?.....	141
6.5.6 Research question 6: What coping strategies do medical students use to deal with distress? ...	141
6.6 SUMMARY	142
6.7 RECOMMENDATIONS	142
6.7.1 Policy	142
6.7.2 Practice.....	143
6.7.3 Recommendations for further studies	144
6.8 PROPOSED DISTRESS MANAGEMENT AND COPING MODEL FOR MEDICAL STUDENTS	144
6.9 CONTRIBUTION OF THE STUDY	150
6.10 FINAL COMMENTS	150
REFERENCES	152
APPENDICIES	174
APPENDIX A: GREAT ZIMBABWE ETHICAL CLEARANCE LETTER	174
APPENDIX B: MINISTRY OF HIGHER AND TERTIARY EDUCATION, SCIENCE INNOVATION AND TECHNOLOGY APPROVAL LETTER	175
APPENDIX C: MEDICAL RESEARCH COUNCIL OF ZIMBABWE CLEARANCE.....	176
APPENDIX D: MDILANDS STATE UNIVERSITY APPLICATION LETTER	177
APPENDIX E: MIDLANDS STATE UNIVERSITY APPROVAL LETTER.....	178
APPENDIX F: NUST APPLICATION LETTER	179
APPENDIX G: NUST APPROVAL LETTER	180
APPENDIX H NUST INSTITUTIONAL REVIEW BOARD CLEARANCE.....	181
APPENDIX I: KRECJIE AND MORGAN SAMPLING TABLE.....	182
APPENDIX J: STUDENT STRESS INVENTORY (REVISED)	183

APPENDIX K: COPE DISPOSITIONAL VERSION	188
APPENDIX L: INTERVIEW SCHEDULE FOR MEDICAL STUDENTS	194
APPENDIX M: EDITOR' S LETTER ON MANUSCRIPT PUBLICATION	210
APPENDIX N: EDITORIAL ATTESTATION	211
APPENDIX O: TURNITIN ORIGINALITY REPORT	212

LIST OF FIGURES

Figure 1: Transactional Model of Stress and Coping (Lazarus & Folkman, 1984)..... 12

Figure 2: Deductive reasoning 74

Figure 3: Inductive reasoning 75

Figure 4: Concurrent parallel design..... 77

Figure 5: A proposed Distress and Coping Model for medical students 145

LIST OF TABLES

Table 1.: Total number of qualified and registered Medical Practitioners in Zimbabwe	6
Table 2: Distribution of participants of the calculated sample and its breakdown (n=148) ...	78
Table 3 Biographical data of the Pilot study (n=16).....	88
Table 4 Biographical data (n=123)	97
Table 5 Academic workload versus medical students' distress.....	98
Table 6 Linear regress model for academic workload versus distress.....	99
Table 7: Linear regression for Medical students' exposure to dying patients versus distress	101
Table 8 linear regression model for personal life events and medical student distress	102
Table 9 Lack of financial resources versus distress of medical students.....	105
Table 10 Linear regression model for lack of financial resources versus distress of medical students	105
Table 11: Levels of distress among medical students across the five levels of the medical degree programme	107
Table 12 Multiple linear regression model for problem focused coping.....	109
Table 13 Multiple linear regression model for emotion focused coping.....	112
Table 14 Multiple linear regression model for potential maladaptive emotion focused coping	116

CHAPTER 1: INTRODUCTION

1.1 INTRODUCTION

The current study sought to determine the sources and levels of distress among medical students at two newly established medical schools in Zimbabwe with a view to proposing an adaptive coping model that medical students may utilize to curb the effects of distress. This chapter presents the background to the study, statement of the problem, sub research questions and study hypotheses, research objectives, significance of the study, assumptions of the study, delimitations, limitations of the study, definitions of key terms and the chapter summary.

1.2 BACKGROUND TO THE STUDY

This study investigated sources and levels of distress among medical students at two newly established medical schools in Zimbabwe. Due to the academic and emotional demands of medical education, which are among the highest of any profession's training programmes, medical students must spend a significant amount of time and energy to their studies (Tian-Ci Quek, Tam, Tran, Zhang, Zhang, Su-Hui Ho, & Chun-Man Ho, 2019; Johns, Samuel, & Waddington, 2022; Feng, Jiang, Shen, Lei, Li, Zhu, ... & Gan, 2022). A dynamic environment, which at times can pose difficulties for students, often characterises the modern learning environment in medical training institutions and this can result in distress (Koochaki, Charkazi, Hasanzadeh, & Sadani, 2011; Rosenthal, Schlussek, Yaden, DeSantis, Traves, Pohl, & Hojat, 2021; Leombruni, Corradi, Lo Moro, Acampora, Agodi, Celotto, ... & PRIMES Collaborating Group, 2022; Tokumasu, Nishimura, Sakamoto, Obika, Kataoka, & Otsuka, 2023). Medical students encounter many stressors during their journey to achieve their goals; these include an extensive medical curriculum, work overload, long study hours, high academic and family expectations, competition, and frequent and varied examinations (Portoghese, Porru, Galletta, Campagna & Burdorf, 2020; Alotiby, Almaghrabi, Alosaimy, Alharthi, Khawandanah, Alansari, & Zamil, 2021; Kubwimana, Mutatsineza, Tesi & Wong, 2022). Work overload refers to doing many tasks at the same time and can include long hours of work, tight deadlines, changes to duties, and over-supervision (Kenny & Fluck, 2022). According to Dyrbye, Thomas and Shanafelt (2006), distress happens because of great workload imposed on students during clinical attachments at the hospital.

Distress is conceptualised as a type of stress which elicits negative feelings that involve emotional suffering characterised by symptoms of depression (e.g., lost interest,

sadness, hopelessness) and anxiety (e.g. restlessness, feeling tense, anxiety, sadness, irritability, self awareness and emotional vulnerability with morbidity) (Drapeau, Marchand & Beaulieu-Prevost, 2012; Granieri, Franzoi, & Chung, 2021; Lee, Wilson, Bernstein, Naicker, Yassi, & Spiegel, 2022). Distress implies an external and usually temporary cause of great physical or mental strain and stress. Distress occurs when a person is in a psychologically demanding situation and cannot control or manage it (Li, Yi, Zhong, Li, Xiang, Wu, & Xiong, 2021). Distress can occur when one has many responsibilities they are not able to manage. Distress predisposes an individual to an increased risk of physical and mental health problems. Distress, if unmanaged, can cause an individual to experience anxiety, headaches, sleep problems, high blood pressure, stomach and digestive problems and it can disrupt one's daily activities (Pelissier, Viale, Berthelot, Poizat, Massoubre, Tiffet, & Fontana, 2021). As a type of stress, distress contrasts with eustress, which is stress that brings positive effects as opposed to negative effects. Eustress is what gives motivation and energizes an individual to make a change. Eustress has a positive and a beneficial effect on health performance and emotional well-being. Research has shown that while eustress is challenging, it is manageable and distress on the other hand, requires extra resources to manage it (Pelissier et al., 2021). Given the fact that distress is a type of stress, the present study uses the word distress synonymously with stress. Studies that investigated distress, for example, Broks, Stegers-Jager, van der Waal, van den Broek and Woltman (2022), Palicka, Rybar, Mechurova, Palickova, Sobelova, Pokorna and Cvek (2023) and Rammouz, Lahlou, Salehddine, Eloumary, Laaraj, Ouhamou, ... and Boujraf (2023) have shown that practitioners in the helping profession, such as medical students, are susceptible to distress but apparently, there is a dearth in information regarding the distress-related emotions that these medical students experience during training.

Studies conducted in North America for example, in the United States of America by Dyrbye, Szydlo, Downing, Sloan and Shanafelt 2010 have acknowledged the existence of distress among medical students in training institutions. The above study by Dyrbye et al has shown that while medical institutions strive to provide sufficient learning materials and the relevant counselling support services, these students remain vulnerable to distress. Another study conducted in the United States of America by Nikolis, Wakim, Adams and DO (2021) posit that among medical students, distress arises due to academic demands, an inability to cope, helplessness, increased psychological pressure, mental tension, excessive overload, curricular factors, personal life events, and the learning environment. Other studies that examined distress, for example, in the United States of America, (Oaklander, 2016) and Canada

(Matheson, Barrett, Landine, McLuckie, Soh, & Walter, 2016), implicate psychological distress in medical students at various levels of the medical training. A systematic review of the prevalence of distress among medical students in North America found a large range of prevalence between 7.7% and 65.5% across 11 studies (Quek, 2019). Another study carried out in the United States of America by Frank, Elon, Naimi and Brewer (2008) involving 4847 medical students found out that 3777 medical students which represents 78%, reported drinking alcohol in the previous month while 22% did not and 1668 medical students which represents 34% drank excessively while 68% drank moderately. Statistics commonly cited indicate that social ills like drug abuse and HIV and AIDS have also not spared medical students in their quest to ameliorate the effects of distress. Given the above negative effects, distress in medical students warrants wider awareness and greater attention.

In Europe, for example, studies conducted in France (Saias, Du Roscoat, Véron, Guignard, Richard, Legleye & Beck, 2014; Rolland, Hadouiri, Haas-Jordache, Gouy, Mathieu, Goulard, ... & Frajerman, 2022), and the United Kingdom (Quince, Wood, Parker, & Benson, 2012; Tawse and Demou, 2022), observed that medical students are at a risk of psychological distress due to the demanding nature of the medical curriculum. A Portuguese study which, sampled 501 participants found significant levels of distress in medical students with 49.9% (95% CI: 45.5–54.3%), with 20.8% of total students presenting extremely high levels, irrespective of age, gender, and faculty (Oura, Moreira, & Santos, 2020). Spanish studies have also pointed to the existence of distress among medical students. For example, studies by Ozamiz-Etxebarria, Dosil-Santamaria, Picaza-Gorrochategui and Idoiaga-Mondragon (2020) and Llanes-Castillo, Pérez-Rodríguez, Reyes-Valdéz and Cervantes-López (2022) observed that while stress is a natural and essential form of protection for the survival of the human species, it sometimes leads to poor academic performance, and can inevitably lead to failure by medical students to acquire necessary medical knowledge; thus, compromising their future practice. In support, Almutairi, Alsubaiei, Abduljawad, Alshatti, Fekih-Romdhane, Husni and Jahrami (2022) did a globally-pooled prevalence rate and risk factor analysis associated with distress and burnout among undergraduate (pre-intern) medical students. In their study, Almutairi et al did a random-effects meta-analysis of 42 studies involving 26,824 students. From the analysis results, Almutairi et al.'s (2022) study showed an overall prevalence rate of 37.23% [32.66%; 42.05%], $Q = 2,267.15(41)$, $p < .0001$, $\tau^2 = .42$, $\tau = .65$, $I^2 = 98.2\%$; $H = 7.5$. Prevalence of emotional exhaustion, depersonalisation, and personal accomplishment were 38.08% [30.67%; 46.10%], 35.07% [26.74%; 44.41%], and 37.23% [32.66%; 42.05%], respectively. In

explaining distress among medical students, Dyrbye et al. (2006), assert that medical students' distress may be due to work-overload experienced during their clinical years.

Some studies conducted in Asia also found a similar trend with regards to distress in medical students. Similarly, studies in Israel (e.g. Benbassat, Baumal, Chan & Nirel, 2011), the Islamic Republic of Iran (e.g. Marjani, Gharavi, Jahanshahi, Vahidirad, & Alizadeh, 2008), India (e.g. Madhyastha, Latha & Kamath, 2014) , Saudi Arabia (e.g. Soliman, 2014; Atta & Almilaibary, 2022) and China (e.g. Cho, KO, Ngan, & Wong, 2022), point to the presence of psychological distress in medical students. Some studies conducted in Malaysia with medical students highlighted that academic workload is one of the reasons for the high prevalence of distress in medical students (Yusoff, 2014: Mohamad, Sidik, Akhtari-Zavare & Gani, 2021; Kyaw, Murthi, Aveliar, Anadan, Chelven, Abd Mun'em, & Mazlan, 2022). The stressful environment coupled with lack of support and insufficient counselling services leaves these students predisposed to distress and burnout. The learning environment in the medical schools cannot be changed or dovetailed to suit the requirements of the students but rather demands the students to adapt to the situation.

There is a strong acknowledgment and persuasion in academia on how challenging and traumatic medical training environments have become. A Saudi Arabian study by Bamuhair, Farhan, Althubaiti, Rahman and Ibrahim (2015) investigated distress among medical students and found that most of the distress for medical students is from interpersonal relationships, low self-esteem, self-blame and self-criticism. Distress has negative effects on medical students if compared to students from the general population (Abdulghan, Alkanhal, Mahmoud, Ponnamparuma & Alfaris, 2011). According to studies conducted in Saudi Arabia by Abdulghan et al. (2011) and Atta and Almilaibary (2022), the epidemiological data about psychological morbidity among medical undergraduate students is astonishingly high. Distress was also found to cause life-damaging behaviors and is associated with negative physical health outcomes, the exacerbation of mental health symptoms and psychological distress in medical students (Deasy, Coughlan, Pironom, Jourdan & Mannix-McNamara, 2014). The effects of distress cited above, paint a gloomy picture about distress in medical students and therefore, justified the present study, which sought to understand the sources and levels of distress to propose a distress and coping model for use by medical students undergoing distress at medical schools.

There is also abundant literature exposing the relationship between medical students and

psychological distress in Africa. For example, studies conducted in Sudan (Mustafa, Mohammed, Makkawi & Mohammed, 2022), Cameroon (Ngasa, Sama, Dzekem, Nforchu, Tindong, Aroke & Dimala., 2017), Ethiopia (Melese, Bayu, Wondwossen, Tilahun, Lema, Ayehu, & Loha, 2016), Egypt (El-Gilany, Amr, & Hammad, 2008), Nigeria (Seun-Fadipe & Mosaku, 2017) and Guinea (January, Madhombiro, Chipamaunga, Ray, Chingono & Abas, 2018), show that distress in medical students is not a local phenomenon but a global problem. Operationalised from the above-named studies, the defining features of psychological distress are the exposure to a distressful event that threatens the physical or mental health, the inability to cope effectively with this distress or and the emotional turmoil that results from this ineffective coping. The study by Ngasa et al. (2017), found that high levels of demand in academics and psychosocial pressure during medical training are leading causes of distress in medical students. Distress becomes debilitating to students' academic progress, hence, the need for students to be screened for distress regularly so that it does not develop into a full-blown mental health problem. Another study conducted in Nigeria by Ogunsemi (2013), also reports that the common distress factors for medical students were the academic workload as well as the number of years spent at the school.

Closer to Zimbabwe, a body of literature about distress in medical training institutions has reinforced the existence and impact of distress on students. For example, studies carried out in South Africa by Naidoo, Wyke, Higgins and Moodley (2014) and Van Niekerk, Scribante and Raubenheimer (2012) acknowledge that distress impacts negatively on students both physically and academically.

In Zimbabwe, there is little evidence of research precisely on medical students' distress. Searches done in literature revealed that only one study was conducted on medical students in Zimbabwe. Vaz, Mbajjorgu and Acuda (1998) carried out the only study on medical students' stress at the University of Zimbabwe. This study demonstrated that a number of medical students at the University of Zimbabwe were at various levels of stress and depression despite the existence of Counselling and Psychosocial Services Departments that cater for the psychological wellbeing of students. The Vaz et al. (1998) study found out that those students in the extreme stress or depression group needed serious attention. A system of identifying students with low stress threshold early in their training was recommended as well as a means of helping them to deal with the stress and its causes. The study by Vaz, et al. contrasts with the current study in that it was carried out at a medical school which was established more than

sixty years ago (1963), whereas the current study is based on two medical schools established less than ten years ago, thereby providing a unique study.

The lack of definitive research focusing on sources and levels of distress in medical students at newly established Zimbabwean medical schools was noted by the researcher in the available literature and this invoked the researcher's interest to investigate the sources and levels of distress among medical students and whether these are not potential hazards for mental health problems.

Other Zimbabwean studies by Chireshe and Mapfumo (2003) and Mapfumo, Mukwidza and Chireshe (2014) focused on sources and levels of stress in other professions like general teaching and special needs education. Mutambara (2016) also researched on general students and found out that suicidal ideation as a result of depression was high among students. According to Mutambara (2016), 14.7% had thought of killing themselves, 15.7% having told someone they wanted to die and 13.7% having had plans to kill themselves and had not followed their plans through. The Mutambara study, like other Zimbabwean studies, contrasts with the current study in that it focused on general students whereas this study focuses exclusively on medical students.

In the Zimbabwean scenario, distress among medical students could be because of inadequate qualified medical personnel working in the hospitals. Inadequate number of professionals working in the hospitals means more workload for the students, particularly during their clinical years when they are expected to assist in the hospitals while learning clinical work. The statistics supplied by Zimbabwe National Statistics Agency (2018), seem to confirm the assertion that the distress among medical students in Zimbabwe may be because of an inadequate number of qualified and registered medical practitioners working in the medical hospitals, thereby pushing the workload to medical students on attachment at the hospitals. From Table 1 below, it is evident that the number of medical practitioners has not been increasing significantly well to match the demand resulting in increased medical practitioner to patient ratio of 1.6:10000 (Zimbabwe National Statistics Agency, 2018).

Table 1: Total number of qualified and registered Medical Practitioners in Zimbabwe

Year	2010	2011	2012	2013	2014	2015	2016	2017
Doctors	916	1054	1059	1114	1176	1230	1321	1324

Source: Adapted from Zimbabwe National Statistics Agency (2018)

These background situations among others show that students' distress cannot be ignored as it leads to strenuous situations that if not attended to, result in extreme forms of distress, burnout or even suicide.

In an attempt to deal with distress, medical students employ a variety of coping strategies. These strategies include seeking social support programmes; seeking career counselling programmes, engaging in mentorship programmes, doing extra-curricular activities and worse still some engage in maladaptive behaviors like beer drinking, eating more than usual and smoking cigarettes in a bid to overcome distress (Holton, Bary & Chaney, 2016).

1.3 STATEMENT OF THE PROBLEM

The background to the study revealed that medical students experience various levels of distress during medical training (Tian-Ci Quek et al., 2019; Ozamiz-Etxebarria et al., 2020; Cho et al., 2022; Tawse & Demou, 2022). The background to the study revealed that the leading causes of distress among medical students are academic overload, poor financial status, experiencing death and dying in hospital wards and personal life events of medical students (Ngasa et al., 2017; Oura et al., 2020; Atta, & Almilaibary, 2022). The background to the study further revealed that despite concerted efforts being made by medical schools to promote mental health and general wellbeing of medical students, medical students suffer from enormous levels of distress. The background to the study also revealed that medical students in Zimbabwe suffer from distress despite the availability of counselling and psychosocial services departments meant to reduce distress related problems among students (Vaz et al., 1998). It was further revealed in the background to the study that distress affects academic performance and if uncontrolled, may lead to severe depression and suicide (Mutambara, 2016; Mohamad et al., 2021; Rolland et al., 2022). The researcher noted limited research focusing on sources, levels of distress among students in the Zimbabwean medical schools and this invoked the researcher's interest to investigate the sources, and levels of distress among medical students at two newly established medical schools in Zimbabwe.

1.4 AIM OF THE STUDY

The aim of the study was to investigate the sources and levels of distress among medical students at two newly established medical schools in Zimbabwe.

1.5 MAIN RESEARCH QUESTION

The study addressed the following main research question: What are the sources and levels of distress among medical students at two newly established medical schools in Zimbabwe?

1.5.1 Sub-Research Questions

The study was guided by the following research sub questions:

1.5.1.1 To what extent does academic workload contribute to medical students 'distress'?

1.5.1.2 How far is the exposure of medical students to dying patients linked to distress?

1.5.1.3 How are personal life events of medical students linked to distress?

1.5.1.4 What is the relationship between financial status and medical students' distress?

1.5.1.5 How are levels of distress different across the five levels of the medical degree programme?

1.5.1.6 What coping strategies do medical students use to cope with distress?

1.6 HYPOTHESES

The following null hypotheses were tested to prove or disprove the assertions made.

1.6.1 Academic workload does not contribute to distress in medical students.

1.6.2 There is no relationship between medical students' exposure to dying patients and distress.

1.6.3 Personal events are not associated with medical students' distress.

1.6.4 There is no link between financial status and medical students' distress.

1.6.5 There is no significant difference in levels of distress across the five levels of the medical degree programme.

1.6.6 There is no relationship between distress and coping strategies.

1.7 OBJECTIVES OF THE STUDY

The study sought to:

1.7.1 establish the extent to which academic workload contribute towards medical students' distress.

1.7.2 establish the link between medical students' exposure to dying patients and distress.

- 1.7.3 establish the association between personal life events and medical student' distress.
- 1.7.4 determine the extent to which financial status contributes to medical students' distress.
- 1.7.5 determine the levels of distress among medical students across the five levels of the medical degree programme.
- 1.7.6 identify coping strategies that medical students can use to deal with distress.

1.8 SIGNIFICANCE OF THE STUDY

This research study has both institutional and administrative implications for the Zimbabwean medical schools. The research results may allow students to adopt adaptive coping strategies when dealing with distress. The study may also benefit the Zimbabwean medical schools by unlocking new knowledge, which may feed into their policy formulation. It may also encourage the training institutions to adopt new contingency planning with confidence based on some empirical evidence to enable efficacious strategies that may ameliorate the negative impact of medical students' academic distress. Further, the research builds on existing knowledge about medical students' experience and change process, which are important variables in managing a twenty first century medical training institution. The research may enable administrators and lecturers to deal successfully with distress and minimise the effects of distress and to employ motivational strategies that may improve their efficiency and effectiveness in their training. At a personal level, the researcher has gained a deeper understanding of the nature and extent of dysfunctionality which medical students experience in the course of their training. Finally, the study helps the researcher to contribute to the body of existing knowledge on distress specifically among medical students and university students in general.

Having looked at the significance of the study, the following section discusses the theoretical framework upon which the present study is premised.

1.9 THEORETICAL FRAMEWORK

The current study is premised on Lazarus and Folkman (1984)'s Transactional Model of Stress and Coping. This model is a framework for evaluating the processes of coping with stressful events. The model is a six-component model comprising sources of stress, primary appraisal, secondary appraisal, the emotional experience, problem focused coping and the emotion focused coping (Harris, 2020; Obbarius, Fischer, Liegl, Obbarius, & Rose, 2021; Ghaffari, Morowatisharifabad, Jadgal, Mehrabi, & Alizadeh, 2021). According to Lazarus and Folkman's model, stress emanates from experiences that result from transactions between individuals and

their environment. This model posits that when two persons are exposed to the same sources of stress, they do not react similarly.

The Transactional Model of Stress and Coping posits that when exposed to a stressful situation, individuals use primary or secondary appraisals to deal with the source of distress. Primary and secondary appraisals inform reactions to the sources of stress. When one looks at a stimulus, different emotions can be triggered. These feelings include empathy, anger, fear, anxiety or sadness among other feelings. Depending on the emotional experiences, one person may interpret the stimulus as stressful yet the other person may interpret the same stimulus as motivating. After reactions, a person may use either problem-focused coping strategies such as information seeking, support seeking, accepting the situation or confronting it to manage their negative emotions. Alternatively, an individual may use the emotion-focused coping strategies like self-blame, dreaming, avoidance, and minimisation that are potentially maladaptive coping styles. In the context of the present study, one medical student may interpret reading too many books and staying in the library for many hours as stressful while the next student may find reading books and keeping to oneself while reading motivating and relaxing. Further, one student may find witnessing death and dying patients distressing yet another may see nothing wrong with a dead or dying person. Again, one may be distressed upon losing a loved one yet another can cope with losing a loved one as long as the loved one is not a breadwinner. Two people exposed in the soaking rainfall can exemplify this model, for example, a younger person may enjoy being soaked by the rain yet an adult maybe distressed. Accordingly, symptoms and how an event affects someone are very subjective and therefore, differ from one person to another. The different reactions to the same stimulus explain how the present study views sources and levels of distress among medical students. The Lazarus and Folkman model highlights that distress only occurs when individuals perceive situations as a threat to their goals and feel unable to meet certain demands. The model is justified in the current study on the account that it places importance on distress as an individual phenomenon that is both interactive and situational.

According to Lazarus and Cohen cited in Margaret, Ngigi and Mutisya (2018), the transactions between the individual and the environment depend on the impact of the stressor, which is mediated by the individual's appraisal of the stressor and available coping resources. Lazarus cited in Margaret, Ngigi and Mutisya (2018), identified two cognitive appraisals, which include primary appraisal and secondary appraisal. In primary appraisal, individuals question what they

have at stake in a particular threatening situation. The answer to the question influences the quality and intensity of their emotion. In secondary appraisal, individuals question what they can do in response to the perceived threat. Lazarus and Folkman (1984) drew a conclusion that how an individual appraises a situation has a bearing on the coping process and on how they react, thus demonstrating that cognitive appraisal is crucial in mediating thoughts, feelings and action and is important in identifying different coping styles.

The Transactional Model of Stress and Coping was used to guide this study because while medical students are exposed to the same learning environment, they are expected to react differently to distress and to have varying distress levels. In attempting to explain distress, Lazarus and Folkman (1984) opined that stress is a product of a transaction between a person (including multiple systems: cognitive, physiological, affective, psychological, neurologic and others systems found in a person's environment. It follows, therefore, that a stressor for some individuals may lead to distress while for others it can be a stimulus. Wah, Sukanlaya and Tian (2010) indicated that the revised Lazarus and Folkman model acknowledges the individual differences in the manner in which people appraise and respond to similar events. The other important aspect of the model is that primary appraisal, secondary appraisal and coping strategies mediate the relationship between stressor and the individual's distress outcomes (Landy, Shigeto, Laxman, & Scheier, 2022). To augment this model, Guthrie, Black, Balgalkote, Shaw, Campbell and Creed (1998), Berjot and Gillet (2011) and Dyrbye et al. (2011) identify damages or harms, threats and challenges as important primary appraisals that pose potential danger to an individual's well-being or self-esteem. The authors allude that secondary appraisal which has the coping potential and resources can help to ameliorate the emotional experience associated with distress.

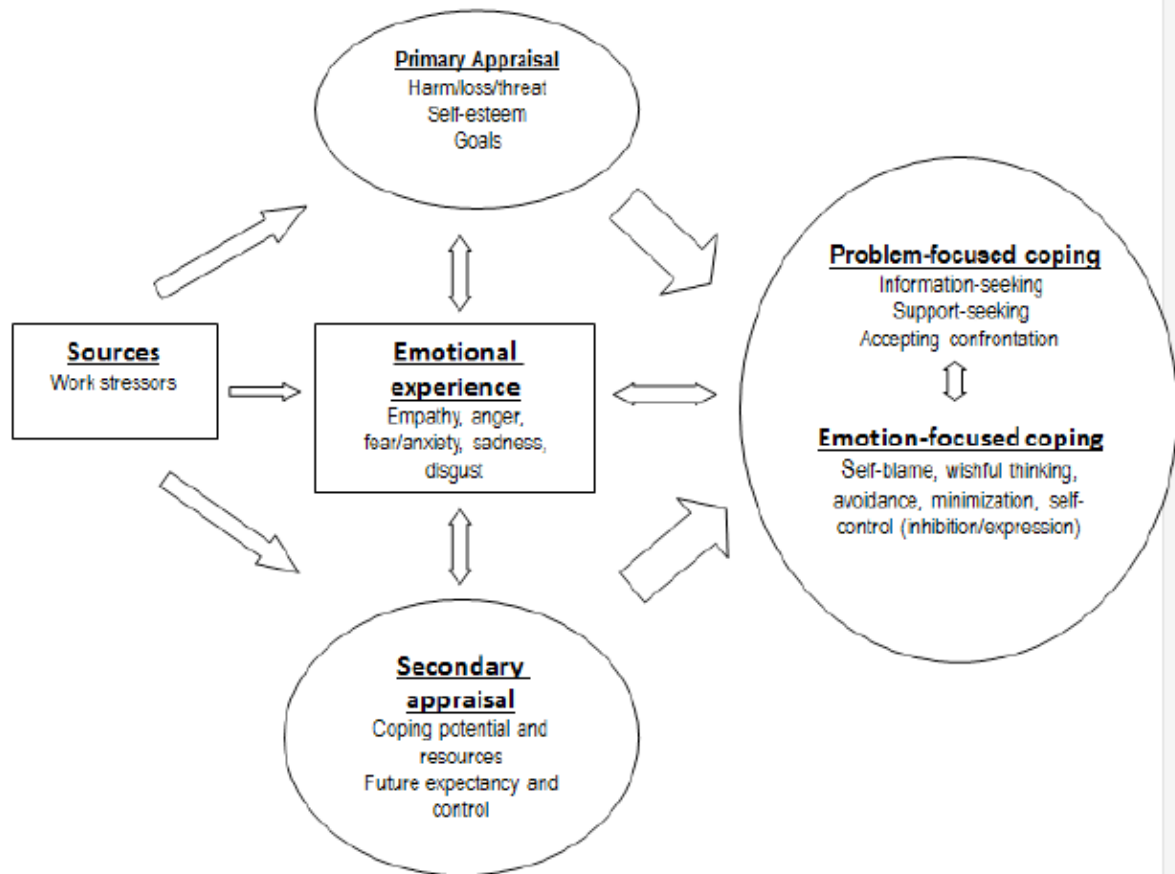


Figure 1: Transactional Model of Stress and Coping (Lazarus & Folkman, 1984).

1.10 ASSUMPTIONS OF THE STUDY

The study was based on the following assumptions:

- 1.10.1 Medical students experience high levels of distress during training.
- 1.10.2 Medical students use different coping strategies in problem-focused stress.
- 1.10.3 All participants would cooperate and provide reliable responses.

1.11 LIMITATIONS OF THE STUDY

The use of the structured questionnaires and the semi-structured interviews posed methodological limitations in the current study. The limitation of the structured questionnaire as an instrument of data collection was that of low response rate. The structured questionnaire did not provide for the clarifications of grey areas during administration. On the other hand, the use of an interview guide to generate data greatly compromised anonymity of the participants. This resulted in some cases, respondents telling the researcher what they believed

the researcher wanted to hear rather than giving their own opinions due to fear of victimisation or other forms of labelling.

1.11. 1 Overcoming limitations

The limitations associated with the questionnaire's low response rate was mitigated by increasing the sample size of the medical students who participated in the study. A large sample was to ensure that even if some questionnaires were not returned, the researcher would still have enough questionnaires to provide sufficient information on medical students' distress. The questionnaires' lack of follow up questions and probes were mitigated by carrying out a pilot study to clarify all grey areas, which arose when participants of the actual study were responding to the questions. On the limitations of the semi-structured interview as method of data collection, the researcher mitigated the inherent challenge of lack of anonymity by telling the participants that the information they supplied was being treated with the strictest confidence.

1.12 DELIMITATIONS

The study focused only on medical students from two newly established medical schools, which were established less than ten years ago in Zimbabwe. Further, the study only included students from the Bachelor of Medicine and Bachelor of Surgery (MBBS) programmes. It excluded other students from the two medical schools like Midwifery since the nature of their duties are different from those of MBBS programme, hence, making sources and levels of distress different from those experienced by medical students.

1.13 DEFINITION OF TERMS

The following key terms were frequently used in the study and were defined according to scholarly views and what they mean in this study

1.13.1 Academic stressor refers to any academic activity such as examination, co-curriculum, lifestyle, and merit system, which an educational institution uses for assessment or grading purposes (Saat, Sazlina, Aishah, Ghazali, Dzairudzee & Zaidah, 2015). In this study, academic stressors mean any academic activity such as examination, excessive assignments, poor time management, co-curricular activities, merit system, social skills and peer competition.

1.13.2 Burnout is a psychological response that often develops when a person, often working in the human services profession and having to deal with people, is exposed to chronic emotional and interpersonal stressors at work (Kumar, 2016). In this study, the above definition

is adopted and it also includes emotional exhaustion, depersonalisation and decreased personal accomplishment.

1.13.3 Coping refers to an act of constantly changing cognitive and behavioural efforts to manage specific external and or internal demands that are appraised as taxing or exceeding the resources of the person (Agbaria & Abu-Mokh, 2022). In this study, coping means investing one's effort to solve personal or interpersonal problems to minimise or tolerate stress and conflict.

1.13.4 Distress refers to the negative stress response, often involving negative effects and physiological reactivity; a type of stress that results from being overwhelmed by demands, losses, or perceived threats. It has a detrimental effect by generating physical and psychological maladaptation and posing serious health risks for individuals (Eisenbeck, Carreno, & Uclés-Juárez, 2019). In the present study, the word distress has the same meaning as suggested above and is used interchangeably with the word stress.

1.13.5 Medical School refers to a tertiary educational institution, or part of such an institution, that teaches medicine, and awards a professional degree for physicians. Such medical degrees include the Bachelor of Medicine, Bachelor of Surgery (MBBS, MBChB, MBCh, and BMBS) and other post-graduate medical programmes (Balogun, 2020). In this study, the phrase medical school means the same as above.

1.13.6 Stress is an internal process that occurs when a person is faced with a demand that is perceived to exceed the resources available to respond to it effectively, and where failure to deal with the demand effectively has important and undesirable consequences (Crosswell & Lockwood, 2020). In this study, the term stress means exposure to a stressful event that threatens the physical or mental health.

1.13.7 Workload refers to the amount of work assigned to a person in a specified time (Saat et al., 2015). In this study, the term workload has the same meaning as above.

1.14 PROGRAMME OF THE STUDY

The study was organised under six chapters. Chapter 1 discussed the introduction to the study; it focused on the background information to the study, statement of the problem, research sub questions, research hypothesis, research objectives, and the significance of the study,

limitations and the delimitations of the study. In addition, key terms and concepts were explained in this chapter.

Chapter 2 focuses on the review of related literature pertinent to the sources and levels of distress among medical students who are at various levels of the medical training programme. The literature may be located around the following subtopics which were derived from the research sub questions: academic workload and distress, medical students' exposure to dying patients and distress, students' personal life events and distress, students' financial status and distress and the distress levels across the different levels of the training programme.

Chapter 3 presents the research methodology for the study. The research philosophy, research approach, research design, population and techniques of selecting a sample for this study are explained. A description of the instruments and methods for data collection is made. An overview of the methods employed to analyse the data is given. In addition, issues of reliability and validity as well as ethical issues are presented under this chapter.

Chapter 4 presents both the quantitative and qualitative findings of the study.

Chapter 5 presents the discussion and analysis of study results. The discussion of the findings of the study are based on each sub-research question in Chapter 1. Recommendations on adaptive coping styles for use by medical students to ameliorate the effects of distress are presented in line with the findings from the study.

Chapter 6 presents summaries, conclusions and recommendations of the study. Conclusions and recommendations are drawn from the findings of the study.

1.15 SUMMARY

This chapter presented the background to the study, statement of the problem, sub research questions and study hypotheses, research objectives, significance of the study, assumptions of the study, delimitations, and limitations of the study, definition of key terms and the programme of the study. The next chapter reviews literature related to the study.

CHAPTER 2: LITERATURE REVIEW

2.1 INTRODUCTION

The current study investigated the sources and levels of distress among medical students at two newly established medical schools in Zimbabwe. The review of related literature is presented under the sub headings derived from the objectives of the study. The sub-headings are academic workload and distress, medical students' exposure to dying patients, death and distress, personal life events and distress, financial status and distress, levels of distress and coping with distress.

Google scholar, healthline.com, Scopus, American Psychological Association (APA), Web MD and Researchgate were some of the main databases used for literature search. The gaps noted in literature are highlighted in the chapter. The following section discusses the relationship between academic workload and distress.

2.2 ACADEMIC WORKLOAD AND DISTRESS

Academic distress among university students has long been a topic of research. Researchers have recognised different important distressors, which include examinations, excessive assignments and fear of failure in educational achievement. Several studies have shown that workload was part of the cocktail of the prevalent distressors students experienced at university. A recent survey conducted in the United States of America by Barbayannis, Bandari, Zheng, Baquerizo, Pecor, and Ming (2022) showed a positive correlation between academic expectations and mental well-being. The study, which sampled 843 college students, used two Likert scales, namely; the eighteen (18)-item Perception of Academic Stress Scale (PAS), and the seven (7) item Short Warwick-Edinburgh Mental Well-being Scale (SWEMWBS). The Perception of Academic Stress Scale measures sources of academic stress as perceived by individuals across three domains, namely: academic expectations, workload and examinations, and academic self-perceptions (Bedewy & Gabriel, 2015) while the Short Warwick-Edinburgh Mental Well-being Scale measures mental well-being (Tennant et al. 2007; Fung, 2019; Shah et al., 2021). It is worthy to note that the study by Barbayannis et al. (2022), targeted general population of students but nonetheless, it revealed important findings, which suggested that at university level, academic stressors generally encompassing academic expectations, workload and grading, and students' academic self-perceptions, are equally as important as psychological

well-being. The study by Barbayannis et al. used a survey in the form of Likert scale to collect data. Such a data collection procedure may not allow participants to air their views, hence, the lived experiences of the participants may not come out during data collection. In light of the above, the present study in addition to a closed ended questionnaire, used interviews to solicit for the subjective experiences of the medical students to get a balanced outcome from the study. The interviews used in the present study allowed the researcher to derive a deeper meaning of the research questions by encouraging the interviewees to describe their subjective experiences in their own words (Senderayi, 2021).

In addition, the difference in terms of the geographic context between the Barbayannis et al. (2022) study and the current study gave a unique context to understand if the effects of distress in developed communities such as those in the United States of America and those from developing countries like Zimbabwe were the same. The comparison of the two contexts was, especially important for the present study given that universities in the developed world are often better resourced than those in the developing world. Therefore, the extent to which workload and related variables indicated in the study impact students may not necessarily be perceived in the same manner in a Zimbabwean setting.

A French cross-sectional questionnaire survey by Pelissier, Viale, Berthelot, Poizat, Massoubre, Tiffet, and Fontana (2021) which sampled 832 medical students found academic workload to be one of the leading stressors for medical students. This questionnaire-based study was done online during the Covid-19 pandemic like the present study. However, the study by Pelissier et al. (2021) could not elicit lived experiences from the participants since it involved ticking the boxes that corresponded with the medical students' liking. By ticking the boxes, the study could not have revealed the students' feelings and hence, the present study used both the structured questionnaire and a semi-structured interview to elicit students' subjective experiences about their distressors for effective interventions to be made. In support, authors such as Elayan (2021) and Taherdoost (2022) researched on the limitations of exclusively using quantitative methods to collect and analyse data and found that these solely focus on numbers, thus, ignoring the subjective experiences of the participants. Neglecting subjective experiences of participants creates a risk of missing on the bigger picture of the research and missing on the benefits that accrue from listening to the participants as they narrate their subjective experiences during interviews. The present study used a mixed methods approach to statistically measure the distress levels of medical students yet at the same time,

understanding the lived experiences of medical students in as far as their distress situation was concerned. The present study focused exclusively on medical students because by its very nature, medical training involves handling life and death related matters and as such, the mental fitness of these medical students has important implications in the kind of health professionals to be produced and the kind of service the society will receive.

Further, the French study by Pelissier et al. (2021) cited previously, used regression and univariate analysis to analyse data and found a 75% prevalence of psychological distress across the year groups sampled. Their study confirmed that academic workload, coupled with competition with peers, conflicts in work-life balance, and the emotional burden of exposure to human suffering was the primary cause of distress among French medical students. Collecting data and analysing them statistically only can pose a challenge to some readers who are not familiar with figures and tables; hence, the present study used both the statistical packages like the regression analysis, analysis of variance and thematic analysis to cater for those with challenges with the exclusive use of statistical data.

Earlier studies such as those carried out in Malaysia by Yusoff et al. (2011) found out that academic workload was closely linked to medical students' distress. In support, another Malaysian study by Fares, Tabosh, Saadeddin, Mouhayyar and Aridi (2016) noted that the major stressors were related to academic performance. The findings of another study conducted in the United States of America by Dyrbye et al. (2016) concur with the findings from Yusoff et al. (2011) and Fares et al. (2016) that academic performance in medical training institutions is a leading cause of distress among medical students. The study by Dyrbye et al. (2016) further revealed that depression in medical students is twice as prevalent between the beginning and end of the first year because of increased academic workload due to examination-taking. Further, the study suggests that students find themselves competing for good grades and this competition predisposes them to distress. The present study sought to establish whether academic workload as a source of distress experienced in other countries such as the United States, Malaysia, India, and Nepal has the same effects as in the Zimbabwean sample.

Distress is an inevitable part of medical college life and it affects students at any stage of their studies. A cross-sectional study carried out on Indian medical students (Madhyastha, Latha & Kamath, 2014), identified pressures related to academics such as, increasing workload, strenuous professional training, doubts about one's own clinical ability, faculty relations,

mistreatments, and uncertainties about professional image, as some of the varied stressors medical students had to deal with in the course of their studies. The Madhyastha et al. study further identified that pressures of clinical responsibilities were an added variable that heightened the distress levels of final year students. Studies carried out in Pakistan by Masih and Gulrez (2006) and Khan et al. (2013) indicate that students experience distress due to a hotch-potch of factors. These factors include issues of time management, financial matters, and interaction with lecturers, personal goals, and social behaviour. Adjustment in the academic culture, lack of support system, admission process, and high expectation of parents, curriculum comprising complex concepts, and unsuitable school timings exacerbated the distress levels of medical students (Masih & Gulrez, 2006). Furthermore, unbalanced student-teacher ratio, physical environment of classroom, unhealthy student-teacher interaction, hard and fast rules of discipline, too many or complex assignments, teaching methodology, unconcerned teacher's attitude and overemphasis on weaknesses rather than acknowledging strengths were reported as additional factors that affected medical students (Masih & Gulrez, 2006). Given the foregoing, academic stress invariably arises when academic-related demands exceed those available resources to an individual (Wilks, 2008). The present study focused on medical students solely to find out if the effects of distress experienced by medical students in Pakistan were of similar nature to those experienced by the Zimbabwean sample of medical students.

A plethora of academic-related problems affect university students in general. Academic-related problems stem from the individual's inability to successfully handle academic-related demands, such as curricular factors, long studying hours, high parental expectations, little time for leisure and sleeping difficulties (Soliman 2014; Reddy, Menon & Thattil, 2018; Tian-Ci Quek, Tam, Tran, Zhang, Zhang, Su-Hui Ho, & Chun-Man Ho 2019; Johns, Samuel, & Waddington, 2022; Feng, Jiang, Shen, Lei, Li, Zhu, ... & Gan, 2022). A meta-analysis conducted by Fares et al. (2016) revealed that among medical students, some scholars, for example, Shaik et al., (2004) found distress to be due to academic demands, exams, an inability to cope, helplessness, increased psychological pressure, mental tension, excessive workload while other scholars, for example, Dyrbye et al. (2006), identified curricular factors and the learning environment. These issues, thus, impact negatively on the student. Other studies that have implicated distress in medical students include the one conducted in Nepal by Basnet, Jaiswal, Adhikari and Shyangwa (2012) which concluded that medical students suffer immensely from academic overload which emanates largely from assignments, tests, and studying for better grades. The scholars suggested that since academic stress proves to be one

of the major factors contributing to distress, measures to make the academic curricular more student-friendly are suggested.

Another study on academic workload carried out in India by Solanky, Desai, Kavishwar and Kantharia (2012) found out that 96.8% of sampled first year medical students had distress emanating from academic workload. According to this study, severe distress among first year students was as a result of many factors, including but not limited to language problems, as the majority of students in the study had been exposed to vernacular mediums while at high school. Other variables included the perception that the syllabus that they were going through was vast, which inevitably induced a sense of fear of failure exacerbated by a tight learning schedule and difficult topics. The Indian study (Solanky et al., 2012) raised the issue of language on account that for one coming from a background where the first language (vernacular) is used, the transition to using unfamiliar medical terms, most of which derive from Latin, may present a challenge for students. In the current study, it is important to note that the students in the sample of medical students generally access the curriculum using English as a medium of instruction from primary school. As a consequence, language was not necessarily a huge barrier. With special regard to medical practice, a thorough appreciation of variables that cause distress in students became an issue for academic attention and investigation.

The current study conceptualises academic distress as the individual response of medical students to the highly demanding curricular which leads to unpleasant and negative emotions that include frustration, anger and anxiety. In terms of stress prevalence, a study by Ragab et al. (2021), found out that in a substantial proportion of medical students, (two out of three participants) reported at least one source of academic stress. The chief sources of academic stress were time pressure (60%), heavy workload (58.7%), fear of failure (52.2%), and exam frequency (44.7%). According to the Lazarus and Folkman (1984)'s transaction theory of stress and coping, a theory guiding the present study, chronic stress outcomes are contingent upon individual and environmental factors. If any individual views the academic workload as a burden, they are likely to be stressed while those individuals who view academic workload as a motivator to read wider in preparation for examinations, may view academic workload as an incentive to push them to work harder to attain better grades.

Studies (e.g. Tennant et al., 2007; Fung, 2019; Shah et al., 2021; Johns, Samuel, & Waddington, 2022), have pointed to a myriad of distressors medical students face during medical training,

which affect their studies and well-being. Important to note is that workload is consistently reported across the various studies. In the context of the current study, it was therefore important to investigate whether Zimbabwean medical students experienced similar distressors in the light that comparably the research settings and university contexts are quite different. Zimbabwe is a developing country while the other countries indicated are highly developed.

Distress emanating from academic-related activities cannot be ignored as it is a major problem not only for the individual learner but also for the lecturers at the medical schools as well as the medical schools themselves.

In the following sub-section, the researcher discusses the relationship between assignments, in-class tests and examinations and distress and the extent to which these variables are applicable to the current study.

2.2.1 Assignments, in-class tests, examinations and distress

In academia, assignments, in-class tests and examinations are generally viewed as the most arduous components of student life as they are expected to perform well in these tasks. Studies such as Elsalem, Al-Azzam, Jum'ah, Obeidat, Sindiani, and Kheirallah (2020) and Russell, Thursby, Aubele-Futch, and Stoddart (2021) researched on the link between examinations and distress among general students and concluded that there is a positive correlation between the two variables. The present study sought to establish if assignments, in-class tests and examinations had similar distressing effects as experienced by general students at universities.

A quantitative study conducted at Bengaluru in India used the Academic Stress Scale (ASS) (Rajendran & Kalliappan, 1991) to screen university students from four faculties. The study found that 48.8% of the student population reported average to high levels of stress emanating from assignments and examinations. The difference between the Rajendran and Kalliappan (1991) study and the current study is that the current study focused only on one faculty, that is, the Faculty of Medicine while their study focused on four different faculties. Despite the fact that Rajendran and Kalliappan (1991) focused on four different faculties, it still has important implications for the current study in that it helps to illuminate a plethora of stressors that may also affect medical students that the current study may have overlooked.

Extant literature further demonstrates that, the world over, among other things, difficult examinations are a major source of stress among university students. In illuminating the causes and sources of distress among the general population of university students, Nandamuri and Gowthami (2011), posit that in higher learning institutions where the demands placed on students emanate from deadlines and pressure for excelling in tests or examination, the students are likely to be the victims of stress. In support, Bedewy and Gabriel (2015) citing Harikiran et al. (2012), Hashmat et al. (2008), Sansgiry and Sail, (2006) and Shah et al. (2010) contend that the most frequently reported factors contributing to stress and anxiety around the examination periods were extensive course loads, lack of physical exercise, and long duration of exams, reported by the students. According to Bedewy and Gabriel (2015), the perception of long duration of examinations were the most important sources of test anxiety in a number of students. Another study by Weber, Skodda, Muth, Angerer, and Loerbroks (2019), which, in fact, is a building block to the current study, also examined the nexus between examinations and medical student distress and found a positive correlation between the two variables. Weber et al. (2019) found that difficult examinations normally bring feelings of unpreparedness to the medical students. The Weber et al. also revealed that examinations are sometimes full of errors in the phrasing; hence, fueling distress among students. According to the Weber et al. study, cumulative examinations (i.e., a number of exams that add up to a final grade) seem to increase pressure because students have to wait until the end of the study block to know whether they have passed the examination or not. The period of waiting brings with it a lot of anxiety as students will be pondering on whether the final mark will allow them to proceed with the course or if they will repeat the course. While the above studies such as those by Bedewy and Gabriel (2015) and Weber et al. (2019) focused on distress emanating from assignments, tests and examinations for general university students, the present study focused on medical students to understand the extent to which assignments, tests and examinations contributed to their distress. Upon searches on literature, there was little evidence of previous studies having been done in Zimbabwe precisely on medical students and distress emanating from assignments, tests and examinations and that gap prompted the present study that focused on medical students.

Mittal and Kumar (2018) conducted a study in Karachi whose objective was to determine the levels of stress and coping methods employed by medical students before examination. The observational cross-sectional study, which sampled 600 students using a Likert type questionnaire, had apparently interesting findings. In the study, 23.8% medical students always

felt stressed, 26.8% often, 35.2% sometimes, 6.2% rarely and 8% never felt stressed before examination. To some extent, these findings seem to indicate that not all stress experienced by medical students has a deleterious impact on their performance; this implies that in certain instances, stress is healthy and is a factor of individual differences. The study therefore, would seem to confirm that mild stress has a beneficial effect in cognitive tasks and performance, while incessant and excessive levels of stress may lead to anxiety (Mittal & Kumar, 2018). A key weakness of the Mittal and Kumar (2018) study was its over-reliance on only one research instrument. Using one instrument increases the chances of biasness. The present study used three instruments to get triangulated results and for the enhancement of reliability and validity. The mixed-methods used in the present study utilised a semi-structured interview in addition to the two structured questionnaires, in an approach similar to a Zimbabwean study by Senderayi (2021), who aptly advances the argument by Feilzer (2009) that the use of a survey questionnaire alone with tick boxes is akin to producing a comatose still image of the phenomenon, hence, the need to use a mixed methods approach to address the problem of bias associated with one instrument.

A quantitative Swedish study by Cipra and Müller-Hilke (2019) which also researched how examinations contribute to medical students' distress, found out that self-reported anxiety scores were lowest at the beginning of the first term when exams still lay ahead. The study, which sampled 212 students, found that anxiety which is an indicator of distress, significantly increased immediately before the first oral anatomy exam. The most critical finding of this study was that a surface learning approach correlated significantly with anxiety as a trait and that students with a predominantly strategic approach to learning were the least anxious, yet academically most successful. The study, thus, concluded that surface learners were at risk of being academically successful. The study by Cipra and Müller-Hilke (2019) differs with the present study in that it only used self-reported anxiety scores. The problem with self-reported anxiety scores is that participants are at risk of suffering from what Bispo (2022) and Bergen, and Labonté (2020) termed social desirability, that is to say, always responding in positive ways to paint a better picture of oneself at the expense of the issue under investigation. The present study used both self-reported questionnaires and open-ended questions with further probing questions to avoid bias emanating from self-reported scores when they are used alone.

On the other hand, a German qualitative study by Weber, Skodda, Muth, Angerer and Loerbroks (2019), aimed at determining, inter alia, the perceptions of medical students of

stressors related to their academic studies and resources that may facilitate coping with those stressors, confirmed that fear of failure constituted one of the major sources of stress. The study however, conceded that a degree of stress is acceptable as a normal part of medical training and can be a motivator for some individuals, and not all students find the stress unmanageable. It is evident that despite the divergent research designs used in the two foregoing studies, they both confirm that fear and anxiety were perceived as sources of stress aligned with medical students' workload, with particular regard to examinations and coursework. Weber et al. (2019) justified the selection of a qualitative approach to their study in that it offers the chance to gain such in-depth information without pre-conceived notions regarding stressors. The current study also had a qualitative phase for similar reasons, elaborated earlier in this review. However, the major point of divergence between the studies by Weber et al. (2019) and the current study is that Weber et al opted to do eight focus group discussions, a feature for qualitative approach, while the present study used a mixed methods approach, which included the interview strategy. The lack of the quantitative methods in the Weber et al. (2019) study exposed their research to lack of generalisation, a necessity for most scientific enquiries, hence, the present study used the mixed methods approach to generalise the findings of the present study. Similarly, a quantitative Indian study conducted by Sujatha and Subhalakshmi (2016) on assignments, examinations and distress, observed that among 50 sampled school students, 40% of the students were with moderate examination anxiety, and 36% of the students were with low anxiety and 24% with the severe examination anxiety, a confirmation that assignments and examinations were indeed one of the leading stressors for medical students. The Sujatha and Subhalakshmi's (2016) study just like other quantitative studies had a limitation of not getting to understand the subjective experiences of students. The lack of the qualitative experiences in the Sujatha and Subhalakshmi's (2016) prompted the present study to investigate the sources and levels of distress among medical students using both quantitative and qualitative techniques in a mixed methods approach.

Given the preceding discussion, it is evident that examinations are scary for most students. Distress because of examination largely emanates from long hours of study and reading of large volumes of medical material. It is evident from extant literature that by its very nature, the medical syllabus involves a lot of reading for the oral or written examinations and a lot of preparation for the examinable experiments. All the pre-examination, as well as the actual examination, brings a lot of anxiety to medical students. The anxiety experienced by medical students largely emanates from the feeling of an imbalance between one's efforts and rewards.

The students sometimes spend large amounts of time learning and reading only to get marks that do not necessarily correspond with the grades or pass mark they get. As per the report by Banerjee cited in Kumari and Jain (2014), every year, about 25,000 students in the age group of 18 to 20 years commit suicide during the examination months (i.e. March to June). The suicides are due to high examination stress, as students spend less time socialising and are engaged in passive and active leisure, which may further magnify the effects of examination stress (Lee & Larson, 2000).

According to a study by Kumari and Jain (2014), there are four main areas, which can contribute to pre-examination stress or anxiety. Kumari and Jain propose that the first one is lifestyle issues, which includes inadequate rest, poor nutrition and lack of efficient planning of the available time. Consequently, if a student does not schedule the available time, he/she will not be able to cover the syllabus content at times, resulting in stress. Kurma and Jani further postulate that even if a student completes the reading of full content and there is no time left for revision, he/she may get to confuse one content with the other, resulting in a situation where the student feels as if he/she knows nothing or has forgotten everything. The cited study further emphasises that, the high level of stress during examination is not only the result of student's aspiration or parental expectation, but also because of the archaic and disgraceful examination system for higher education.

The student, as well as parental expectations inadvertently leave students vulnerable to distress as facing parents after poor results might be dreadful (Zheng, Zhang, & Ran, 2023). To buttress the view that examinations are a major stressor in the life of a university student, Rani (2017:66), had this to say:

This study reveals that the assessment framework lays an impact over the students on the level of examination stress. The numerical checking framework has an immediate impact on the examination worry of the students. It builds the weight and worry among the students amid the exam time, and along these lines, comes about into their poor scholarly accomplishment, which can additionally prompt to serious outcomes and risky strides, can be taken by the students.

The preceding comments by Rani (2017) serve to show that assessment procedures used at universities may pose serious challenges for some students. Similarly, examination-taking and writing assignments as part of the continuous assessment for students pose a mental risk for students. In support, studies such Campbell, Soenens, Beyers, and Vansteenkiste (2018) and Wuthrich, Jagiello, and Azzi, (2020) examined how tests and examinations affect students and

found out that some students sleep during examinations which is an indicator of how distressing examinations are to the majority of students at high school as well as at college or university level. For example, an American study by Hill, Goicochea and Merlo (2018), found that assignments and in-class tests that medical students do as part of their continuous assessment, were affecting them negatively on their mental well-being. In fact, assignments and in-class tests together with examinations were the major stressors in medical training.

Studies such as Rani (2017) and Hill et al. (2018) explored the impact of assignments on the mental well-being of students found that, compared to students from the general population; medical students receive many assignments within a short space of time. The current study, therefore, sought to, among other things; determine how the quantum of assignments given to medical students contributes to their distress. Examinations taken by medical students are difficult, not only in terms of the content that is examined, but also in terms of the quantity of the items that comprise the examination (Preston, Gratani, Owens, Roche, Zimanyi, & Malau-Aduli, 2020). The study by Preston et al. indicates that the items to be answered in the examination are longer than what may be required as some examinations take up to four hours of continuous writing. By its very nature, medical training is both a theoretical and a practical programme and as such, medical students are examined both theoretically, and practically through experiments and clinically, that is, they are examined while performing the actual work under the supervision of qualified personnel in hospital wards and surgeries. This requires students to have a theoretical, a practical and a clinical appreciation, thus, placing a load on them in terms of examination preparations.

It can therefore, be demonstrated through extant literature that examinations are a major contributor of distress to university students the world over. Studies such as those by Weber et al. (2019), Sujata and Subhalakshmi (2016), Kumari and Jain (2014), Hill et al. (2018), Rani (2017) and Merlo (2018) examined academic workload such as assignments, and examinations using a quantitative methodology and found a nexus between examinations, in-class tests, assignments and distress. The quantitative methodology assumes all problems faced by medical students are tested empirically. This assumption ignores the fact that medical students' own opinions and their own experiences can be valuable in coming up with a complete picture of the nature of students' distress. The weakness of using quantitative methodology alone is that since it uses statistical packages and numbers, some readers may not be able to understand or interpret numbers; hence, they can fail to benefit from the research. To cater for those who are

quantitatively oriented, the present study used a mixed methods approach to investigate the link between academic workload and distress. The mixed methods approach allowed the researcher to use both the quantitative methodology and the qualitative methodology. The researcher used the quantitative methodology to measure distress levels among medical students, while the qualitative methodology generated data from medical students' lived experiences at the two medical schools. In addition, the use of both quantitative and qualitative methods as in the present study ensures the robustness of the research as results obtained are not only reliable and valid but may be easily replicable.

The literature cited above relates to the Transactional Theory of Stress and Coping by Lazarus and Folkman (1984) which informed the present study in that it views stress as emanating from experiences that result from transactions between individuals and the environment. The theory suggests that once the individual has detected a stressor, two forms of cognitive appraisal are activated; primary appraisal and secondary appraisal. In primary appraisal, individuals question what they have at stake in a particular threatening situation. Given, individual differences, no two individuals will appraise a stressful situation the same. Therefore, in the context of the current study, the researcher, therefore, sought to establish if assignments, in-class tests and examinations were stressors or were sources of motivation for students to perform better in their medical training. Thus, it was important to determine how Zimbabwean students responded to assignments, in-class tests and examinations, which in the foregoing review of literature are a major source of distress for medical students in the mentioned international universities. Therefore, the researcher was always alive to the fact that workload, such as assignments or tests did not always lead to distress but can also be a source of eustress as opined by Van-Slyke, Clary and Tazkarji (2022).

A quantitative Indian study by Rajanayagam (2020) measured distress levels of medical students using salivary cortisol levels and found that examinations and assignments had lower levels of salivary production, indicating that examinations and assignments were not inherently stressful. The study found that the salivary cortisol levels rose only when examinations were conducted orally, thus, proving that written examinations were not stressful to students. In a related quantitative Chinese study by Yang, Viladrich and Cruz (2022) a sample of 556 Chinese secondary school students participated in the research and completed Perceived Locus of Causality Scale and Educational Stress Scale for Adolescents at the beginning of the semester and 3 months later. The Yang et al. study had interesting findings regarding the relationship

between Physical Education examinations tests and assignments. The study found that instead of contributing to students' distress, examinations, tests and assignments increased students' motivation levels to excel. Both studies (Rajanayagam, 2020; Yang, 2022) used quantitative approaches to determine the nexus between examinations, tests and assignments and distress. The weakness of the approaches used in the two cited studies is that by using quantitative methods, the students could have just ticked boxes in the Likert scale without necessarily understanding what was expected of them. The present mixed methods study used the Likert type scales together with interview questions with probes to clarify areas where students could have missed the gist of the questions.

The next sub-section continues to illuminate the relationship between academic workload and distress, albeit by narrowing down to how competition for grades may cause distress among students.

2.2.2 Competition for grades and distress

From the elementary grades, students across grades and disciplines are naturally motivated to out-performing each other in class. While this culture of competition develops early in the academic life of students, it seems to continue throughout the learning career of the majority of students. There is evidence in the extant literature that associates competition for grades with the university students' stress. International research studies such as those by Abdulghani, AlKanhhal, Mahmoud, Ponnampereuma and Alfaris (2011) and Posselt and Lipson (2016), have revealed a close association between competition for grades and distress among the general population of university students. To ventilate the issue of competition for grades, Posselt and Lipson (2016: 974) argue that:

For college students, competition can be a double-edged sword. It can drive them to high levels of effort, but it can also create unhealthy levels of stress and discourage persistence. Most recent research on competition in the college context has focused on the issue of persistence, but a 1981 meta-analysis also found that classroom activities that emphasise competition are less effective for student learning than those that emphasise cooperation in an all prevailing pressure situation, providing an authoritarian and rigid system, one that encourages competition rather than cooperation between learners.

The comments by Posselt and Lipson (2016) support the claim that the majority of students at university level are highly competitive and more often find themselves being vulnerable to distress. While Posselt and Lipson (2016) focused on general university students, their findings regarding distress emanating from competition for grades seem to agree with the findings by

Abouammah, Irfan, Marwa, Zakria and AlFaris (2020), who used a qualitative study to solicit views of medical students about the sources of distress they were facing. The study by Abouammah et al. (2020) concluded that the competitive environment in medical schools plays a major role as a stressor among the students and interns. In view of the above, it is evident that while some of the times medical students' distress emanates from the environment, it at times emanates from self-induced factors like competing for better grades. On the face of it, medical students seem to be doing fewer courses as compared to other programmes at university. For example, from literature analysis, medical students do the following courses; physiology, anatomy, chemical pathology, immunology, virology and psychiatry as well as social and behavioural sciences. These may appear like few but the amount of assignments they receive may exceed those done in other programmes by far.

While the qualitative study by Posselt and Lipson (2016) elicited the actual lived experiences of students from different faculties, it could have arrived at a more comprehensive assessment of the distress levels emanating from examinations within a pragmatic paradigm. The weakness of the qualitative study as used by Posselt and Lipson (2016) is that it lacked objectivity since all the data were generated from the participants' opinions, which could not be generalised to the larger population. In view of the above limitation, the present study used a mixed methods approach, which combines verbal and statistical data to triangulate and generalise findings to the larger population of medical students. The advantage of using the mixed methods approach as in the present study is that the researcher yields more complete evidence about the problem while at the same time gaining more depth and breadth about the nature of the problem as opined by Hafsa (2019) and Saliya (2023). The study by Posselt and Lipson (2016) cited in literature, had a gap in that there was a conspicuous absence of a theoretical framework. This would also have explained the study's variables more fully by illuminating the link between the concepts in their study.

To explain the nexus between competition for grades and distress in students, Baer (2011) stresses that the majority of students from across faculties at universities and colleges have what he called a sense of academic entitlement, where students expect high grades from assignments or examinations despite themselves putting very little effort. The Baer study highlights that the psychological distress associated with the competition for grades is so severe that students even have pervasive demands upon their lecturers. These demands directed at lecturers for better grades, take the form of the demand for higher grades and other special

accommodations from the department or faculty. The concept of competition among medical students in higher institutions of learning has implications for training, as hormonal and emotional changes under competitive stress can modulate learning and memory processes (Cook & Crewther, 2019). Skill acquisition and its expression improved to a similar extent in both situations of competitive and non-competitive assessment. The present study focused on medical students to ascertain if competition for grades was also a contributory factor to medical students' distress at the two newly established medical schools in Zimbabwe.

In a related study, Chamberlin, Yasue and Chiang (2018) researched on the impact the competition for grades has on distress using a general population of Canadian students. The Chamberlin et al. study found that instead of causing anxiety among students, competition for grades also enhanced motivation for students to excel in their studies. A similar study by Yayla and Cevik (2022) used a phenomenological methodology to investigate the effects of competition among Turkish student teachers who were doing advanced degrees and concluded that competition increases success in class. The study observed that competition increases interest in the lesson and therefore, may be a source of motivation. It is important to note that distress is an individual phenomenon where one can suffer distressing effects of competition while others view it as a healthy competition to drive them to up their performance.

The literature above relates to the Lazarus and Folkman theory, the theory guiding this study in that it emphasises individuality when it comes to experiencing distress. In the context of this study, competition for grades may be experienced as harmful and challenging by some yet others may see competition as an incentive needed by one to achieve better results. In fact, those students who interpret competition as harmful will suffer the effects of stress yet those that view it as a form of motivation will not suffer the same effects.

Having highlighted the association between competition for grades and distress, the next subsection discusses the nature of the medical curricular and how the curriculum can be a contributory factor to distress.

2.2.3 The nature of the medical curricular and distress

Schools' curricular are a widely researched area in the academia. Many academic fields have curricular tailored to meet the specific requirements of that particular field. In an attempt to explain what curriculum is, Su (2012; 23), conceived it as "a plan for a sustained process of teaching and learning with a specific focus on content and the process of teaching and

learning.” To understand the impact of curriculum on students’ distress, Promsri (2019) and Lopes, Meurer and Colauto (2020) sampled Accounting students and concluded that the Accounting-learning curriculum did not predispose Accounting students to stress. In their studies, Promsri (2019) and Lopes et al. (2020) observed that Accounting students were already using a variety of coping styles to deal with potential stressors. While findings such as those by Promsri (2019) and Lopes et al. (2020) have implications in the design of user-friendly curricula about university students in general, their findings may not conclusively explain distress-related issues for medical students, hence, the present study, which focused on medical students.

The present study therefore, focused on medical students because, as opposed to students from other programmes like the Accounting programme, medical students learn a curriculum that has clinical implications to their current or future patients. Medical students who are improperly trained due to distress-related issues may pose danger to the health outcomes of their patients and in worst cases, can lead to loss of human life. The present study therefore, sought to establish if the nature of the medical curriculum was linked to medical students’ distress and expose the dangers for remedial action to be taken early.

Studies that focused on medical curriculum and distress concluded that while medical programmes differ from university to university, there is no evidence to suggest that there are some medical programmes that are inherently easier than others (Makela, Moller & Stephens, 2018; Tikkanen, Pyhalto, Pietarinen & Soini, 2019; Tikkanen et al., 2019; Wright & Mynett, 2019; Thomas, Kern, Hughes, Tackett & Chen, 2022; Zainal, Xin, Thumboo & Fong, 2022). A brochure from the University of Cape Town (UCT) (2019) indicates that the curriculum for the Bachelor of Medicine and Bachelor of Surgery degrees takes a total of six years to complete. The semesterised programme therefore has eight courses done in two semesters with each semester offering not less than four courses. The effect of a curriculum tailored as that of UCT is that, if you fail a course you do not proceed to the next level without taking another course, referred to as an intervention programme. In addition to the eight courses covered per year for six years, medical students in this programme are also expected to do a two-year internship programme and a further one-year community service programme so that they become registrable with the Health Profession Council of South Africa.

Similarly, the structure of the medical programme in Zimbabwean medical schools recognises three distinct phases of training, which run from the first year to the fifth year. According to Wright and Mynett (2019), the phases of training are sequentially organised such that Phase I (years 1 & 2) which is foundational in nature, constructs a knowledge-base principally through classroom teaching. Phase II (years 3 & 4) takes the student to the clinical environment on a full time basis where the student focuses largely on clinician teaching, self-directed study and topic-based masterclasses, and Phase III (Year 5) where students are regarded as junior members of multi-disciplinary teams, rotating through different specialities. The clinical phase, for example, is loaded with experiments that may be inappropriately distributed across the allocated time on the clinical phase (Wright & Mynett, 2019). The phased nature of the medical curriculum and the assessment procedures exposes medical students to higher levels of distress and burnout (Wright & Mynett (2019). Muth and Loerbroks (2019) aptly point out that medical curricular can induce a sense of high stress, especially when full classroom attendance is required, implying that absence from lectures is not possible and cannot be compensated. In other words, to complete the medical programme, a certain amount of time is a prerequisite for successful completion of the medical programme. In the same vein, Muth and Loerbroks (2019) propose that the curricular be managed in a way that reduces stress for these students; introduction of new learning technologies, including e-learning and virtual patient simulation could be harnessed. These could be opportunities to create a curriculum, which caters for the needs of individual students.

Other studies that researched on medical curriculum and distress such as those by McKerrow, Carney, Caretta-Weyer, Furnari, and Miller-Juve (2020) and Robinson, Valido, Drescher, Woolweaver, Espelage, LoMurray, and Dailey (2023) attributed distress among medical students to curriculum changes. For example, the quantitative study done at Oregon Health and Science University (OHSU) School of Medicine in the United States by McKerrow et al. (2020), aimed at evaluating the effects of curricular change on students' wellness, found that the majority of students experienced distress relating to curriculum changes. The timing of the McKerrow et al. study was apt because it was carried out just as Oregon Health and Science University School of Medicine had undergone a significant curriculum reform, with the resulting curriculum being a time-varying competency-based curriculum whereby assessments included frequent progress testing rather than traditional, higher-stakes exams. In the study by McKerrow et al. one hundred and forty six students were sampled to respond to the wellness survey; namely, the Short Form-8 (SF-8) and the Perceived Stress Scale (PSS). McKerrow et

al. found that the change of preclinical foundational science phase from two years to eighteen months at the university was a cause for distress and burnout among medical students as students expected to finish the same programme that traditionally would be finished in two years only in eighteen months.

The curriculum changes provide powerful insights into ways of assessing medical students' wellness in order to come up with a unique competency-based curricular model, which can help them to cope with the demands of the programme. A limitation observed in the above study by McKerrow et al. (2020), for example, was that it simply measured distress levels relating to the curriculum changes using one instrument, the Perceived Stress Scale (PSS). The study could have tried to include other qualitative methods to generate data to understand the reasons that led to the students' distress which reasons can only be found after asking students the 'why' through a qualitative approach to understand the stresses experienced by students as narrated by themselves as opposed to ticking boxes, a phenomenon found in quantitative approaches. The present study therefore, used the mixed methods approach to not only measure distress levels among medical students, but to also understand the reasons for their distress as experienced by the students themselves. A single instrument has a weakness of low reliability and validity. The present study used three instruments, namely, the Revised Student Stress Life Inventory, the Dispositional Version of Coping Inventory and a Semi-structured Interview to solicit the views from medical students on both the sources and the levels of distress. In the light of the dissimilarities between the OHSU curriculum and traditional medical school curriculum, the researchers accede that their findings are not generalisable to traditional curriculum students at other institutions. A pervasive observation of the surveys reviewed so far would seem to indicate that many researchers ignore the triangulation method to enrich their studies and solely rely on self-report measures. The weakness of such a methodological strategy has been illuminated in this discourse using the mixed methods approach.

Given the foregoing, the present study sought to determine if medical curricular presented mental challenges for the medical students at the two newly established medical schools in Zimbabwe.

The next sub-section examines the effects the extent to which semester duration is a source of distress among medical students.

2.2.4 Semester duration and distress

The relationship between semester duration and distress among the general population has been widely studied in institutions of higher learning. Bilgin et al. (2017) Pitt et al. (2018) and Gallardo-Lolandes (2020) concluded that students across faculties suffer distress emanating from lengthy semesters. On the other hand, Goppert and Pfof (2021) researched the impact of semester duration on the general population of students and concluded that students experienced fewer worries and more joy in their studies during the semester, especially in summer. The Goppert and Pfof study was carried out on undergraduate students from the University of Bamberg, Germany. While the Goppert and Pfof study found that stresses are mostly derived from academic work, institutional demands, and some external stress such as making decisions on intimate relationships, the study did not report semester duration as one of the causes of stress. While Bilgin et al. (2017) Pitt et al. (2018), Gallardo-Lolandes (2020) and Goppert and Pfof (2021) focused on general university students, the present study focused exclusively on medical students to confirm if they experienced the same effects as students drawn from the general population regarding distress resulting from semester duration.

In view of the preceding observation, studies such as those by Bates cited in Bilgin, Rowe and Clark (2017) focused specifically on medical students and revealed that semester duration comes with a wide range of tasks, which bring distress to the students. Bilgin, et al. (2017) argue that semester duration in the medical programme stretches far longer than semester durations for other course programmes as medical students only break for one or two weeks. In addition, Gallardo-Lolandes, Alcas-Zapata and Ocaña-Fernández (2020) point out that semester duration is closely linked to time management and therefore, a serious cause of distress among medical students. A lengthy semester comes with many tasks to do during the semester. These tasks, according to Bates cited in Bilgin, et al. (2017), include routine tasks, which are part of traditional classroom based teaching, as well as other tasks that entail a higher level of time investment like attachments and experiments.

Numerous other scholars such as Liguori, Schuna and Mujumdar (2011), Koschel, Young and Navalta (2017) and Pitt, Oprescu, Tapia and Gray (2018) studied medical students and have contributed to the understanding of the impact of the semester duration on students' mental well-being. These scholars found that the majority of students suffer from lack of sleep and anxiety because of the length of the semester. Lack of sleep and anxiety are in essence indicators of distress in human beings. Of importance, the study by Koschel et al. (2017) which

used a quasi-experimental research design using fifteen students further examined semester duration in terms of the relationship between physiological stress and perceived psychological stress and how this relationship affected the students towards the end of the semester. The study also sought to find out if participating in the end of Semester University-driven exercise programme can lower psychological distress at the end of a long semester and it concluded that there is weak association between physiological stress and perceived psychological stress. The major weakness of using quasi-experimental research design is that it takes place in a highly controlled laboratory situation and only simulates the conditions of the outer world. The results obtained cannot be generally applied to real life situations, as they are highly artificial. The present study used the convergent parallel design where data were collected simultaneously using questionnaires and interviews, which took place in the real life situations of medical students like in their classrooms. Obtaining information from real-life situations allows the researcher to directly observe the subjects in a natural setting (Vanden-Abeebe, Abels & Hendrickson, 2020). The method gave the researcher a first-hand look at social behaviour and helped the researcher to notice things that they might never have encountered in a lab setting.

Scholars such as Rafidah, Azizah, Norzaidi, Chong, Salwani and Noraini (2009) and Sheldon and Durdella (2009) also researched on the nexus between semester duration and medical students' distress using quantitative designs and found that longer semesters produced better outcomes if compared to regular or shorter semesters. Sheldon and Durdella (2009:43) had this to say about semester length, "40% of probationary students enrolled in 6-week courses successfully completed them as compared to 33% of those enrolled in 8-week courses, and only 23% of probationary students enrolled in 16-week classes." According to the Sheldon and Durdella study, the same general pattern of higher success rates for compressed courses was observed for all ethnic and age groups. While quantitative studies by Rafidah et al. (2009), Sheldon, and Durdella (2009) found a positive correlation between semester duration and distress, the two studies had a weakness of not getting subjective experiences of the participants to understand in greater detail how the semester length distressed the students. Given the findings by Rafidah et al. (2009) and Sheldon and Durdella (2009), the current study sought to establish if there was a link between semester duration and the medical students' distress at the two newly established medical schools in Zimbabwe using a mixed methods approach, which allowed for both measuring medical students' distress levels and at the same time obtaining information regarding students' distress from an insider perspective. Overall, this section of

the review has illuminated variables associated with workload and how their contribution to the distress of medical students.

The majority of the reviewed studies on semester duration showed a high preference for a quantitative survey research using self-report measures, while a few preferred a qualitative approach (Sheldon & Durdella, 2009; Rafidah et al. (2009). The weakness of using a quantitative survey exclusively is that it does not allow the researcher to probe or ask further questions to clarify issues. On the other hand, the weakness of interviews exclusively is that by their very nature, interviews bring out subjective experiences of the participants, which cannot be generalised to the whole population. To address the limitations inherent in quantitative surveys and semi-structured interviews, the present study used a mixed-methods approach to unlock the strength each approach brings to the research in answering the question on how the semester duration contributes to medical students' distress.

Having examined the semester duration and its nexus with medical students' distress, the next section discusses how medical students' exposure to death and dying patients can be potential causes of distress among medical students.

2.3 MEDICAL STUDENTS' EXPOSURE TO DYING PATIENTS, DEATH AND DISTRESS

A pervasive challenge for medical students learning about clinical medicine is experiencing the death of a patient. There is a growing body of knowledge on the emotional consequences of patient deaths on physicians in a variety of medical settings. In light of this, there is a need to understand how medical students deal with the experience of dying patients and the extent to which death and dying impact the levels of distress they undergo. Ho et al. (2020) posit that a better understanding of how medical students respond to death and dying will inform educationalists and clinicians how to best support them (Ho et al., 2020). The current study was undertaken against a background that death education for medical students is a newly developing aspect of the medical curriculum necessitating medical death educators to provide medical students with clinical exposure to dying patients and their families. This section reviews studies which examined how medical students experience death and dying in various clinical settings.

2.3.1 Dying patients in hospital wards and distress

The experience of dying patients is often a challenge for medical students. Numerous studies have examined how medical students respond to such an experience. A three-year longitudinal study conducted in New Zealand by Smith- Han, Martyn, Barret and Nicholson (2016) found that the experience of seeing a patient dying by medical students was one of the most challenging aspects of learning in medical schools. This study sampled and followed ten undergraduate medical students over their three years of clinical medical education. The researchers used grounded theory analysis and constant comparison to derive themes emerging from their study. The study found that the dilemma faced by many students was the balancing act of being able to protect themselves by becoming emotionally detached, yet still being able to display empathy and caring to their patients who may after all not win the battle against the disease.

Smith- Han et al. (2016) unravelled three major themes: a) students' reactions to death and their means of coping, b) changing perceptions about the role of the doctor, the practice of medicine, and personal identity, and c) professional environment, roles and responsibilities. Witnessing the death of a patient resulted in people feeling emotionally weakened, reduced empathy to cope with the emotional anguish and seeking reassurance through the solace of colleagues (Fernández-Ávalos, Fernández-Alcántara, Cruz-Quintana, Turnbull, Ferrer-Cascales, & Pérez-Marfil, 2023). People also undergo a transformation in their perceptions wherein initially they had seen themselves as curative heroes to carers who realised that death was an inherent component of life and not something traumatic. When it happens in a clinical set up, medical students can start to experience the professional setting of the hospital by seeing the normality of death, comprehending their role in formalising the death of a patient, and beginning to feel accountable for patients. This is summed up in the following excerpt from one participant:

Straight afterwards it was just a shock, like I cried and did all the normal shock stuff, and I thought about it quite a lot, but then, I was surprised by how quickly I thought I got over it but how quickly I stopped thinking about it, you know, by how quickly it didn't bother me anymore, and I thought that was that and I dealt with it, and it wasn't till a few weeks, or maybe even a couple of months later that I realised actually it had affected me more than I'd thought, in the sense that now, I just didn't care about anything (James)

The preceding studies by Smith- Han et al. (2016) and Fernández-Ávalos, et al. (2023) have important methodological implications for the current study. Both studies used grounded

theory as their research design, which is a complete departure from the current study. While the two cited studies had a strength of dependability due to the length of the period within which the data were collected, the usual weakness of grounded theory was noted, that is grounded theory methods tend to produce large amounts of data, often difficult to manage and this can lead to faulty results. To address the weaknesses of the grounded theory noted in literature, the present study simply adopted a convergent parallel design, which used questionnaires and interviews to generate data for the study. As already alluded before, the use of mixed methods approach helps in data triangulation, thus, coming up with more reliable and valid results. In terms of data triangulation, this study managed to glean a very accurate picture of the students lived distress experiences through the constant comparison method. This allowed the results to be reported using rich-thick description. Further, since studies by Smith-Han et al. (2016) and Fernández-Ávalos, et al. (2023) used grounded theory, their sample size were relatively smaller and researchers accede that the use of small sample sizes make it impossible to make widespread generalisations around the findings of the study. The present study used a relatively bigger sample of one hundred and forty-eight participants to enable the generalisation of the findings.

A meta-analysis carried out in the United States of America by Dyrbye et al. (2006) reviewed 40 articles on medical student psychological distress (i.e., depression, anxiety, burnout, and related mental health problems). The study revealed that the majority of the patients receive much of their health care toward the end of life, and medical students in the clinical years are frequently confronted with issues related to death and dying for the first time. Despite the available evidence of distress emanating from end of life crisis, medical school curriculum often focuses exclusively on disease diagnosis and treatment and pays little attention to education about endoflife issues and palliative care (Willmott, White, Yates, Mitchell, Currow, Gerber & Piper, 2020). Dyrbye et al. (2006) further show that the frequency with which students encounter patients at the end of life and the lack of student training in this area, is no surprise that students are fearful, anxious, and hesitant to interact with dying patients. Medical practitioners usually report feeling awkward, sad, overwhelmed, apprehensive, vulnerable, angry, and anxious in these circumstances, which highlights the limitations of medical science and can precipitate thoughts about one's own death (Haardt, Cambriel, Hubert, Tran, Bruel & Philippart, 2022). In the majority of cases, medical students realise that they normally are incompetently equipped to converse with dying patients and their families. Although issues related to death and dying are presented during preclinical lectures, clinical training in the skills

required to care for patients at the end of life is less common. One study in the meta-analysis reported that although 100% of third-year students had cared for a terminally ill patient, only 41% had been present while an attending physician talked with a dying patient, and only 35% had ever discussed with an attending physician how to care for terminally ill patients (Dyrbye et al., 2006).

To further discuss the nexus between witnessing dying patients and distress, studies carried in Brazil by Neto et al. (2020), Adams and Walls (2020) and Kushal et al. (2018), indicate that job-related distress is a potential cause of concern for health professionals and it has been found to have severe psychological effects on health professionals such as medical practitioners. According to Neto et al. (2020), work-related distress is characterised by such mental issues as anxiety emanating from multiple clinical activities, depression in the face of the co-existence of countless deaths, long work shifts with the most diverse unknowns and demands in the treatment of patients with COVID-19. While it is not the responsibility of the students to care for the most seriously ill patients in the hospitals and clinics, inadequate numbers of qualified medical practitioners in Zimbabwe seem to be pushing medical students to the front end of medical care (Zimbabwe National Statistics Agency, 2018). The medical students exposed to death usually experience insomnia and report feeling awkward, sad, overwhelmed, apprehensive, vulnerable, angry, and anxious thus, precipitating thoughts about their own death (Batley et al., 2017). The studies cited above have found a link between distress and medical students' exposure to dying patients. It is against this background that the current study sought to ascertain if the medical students' distress at two newly established medical schools in Zimbabwe was emanating from the exposure to dying patients and death.

A Canadian study by Davies (2016), however, found that death does not contribute to distress for medical practitioners. The study concluded that death was part of the doctors' lives and therefore, any signs of distress were shameful and unprofessional. According to this study, for medical practitioners to attend to death and dying patients in hospital wards is their routine and forms part of their daily experiences. The Davies study concluded that death is not linked to distress in the generality of medical practitioners and those experiencing distress are normally those facing other work-related challenges such as disciplinary hearings and financial complications. Another study conducted in Turkey by Akyol, Celik, Koc, Bayindir, Gocer, Karakurt ... and Simsek (2022) also concurs that witnessing patients die is not inherently stressful to all medical practitioners but it can be stressful to those who are not prepared for the

emotional experiences that come with losing a loved one. The major weakness of the study by Akyol et al. (2022) is that it only used an online survey instrument to collect data, hence the study could have failed to capture the real experiences of the participants one would ordinarily get if there were a combination of survey and face-to-face interviews. The present study included the face-to-face interview to capture the subjective experiences of the participants. It is important to note that online survey instruments are mainly emotionally flat tools, which do not draw the emotional experiences of the participants, as a face-to-face interview would do. The present study focused on medical students after the realisation that unlike students from other programmes, medical students' training sometimes involves interacting with depressed and ill patients, which can worsen their own distress. Witnessing illness or death during performance of duty may lead to negative health outcomes for other patients owing to the distressed nature of the medical practitioner him or herself, hence the present study sought to understand the relationship between witnessing dying patients and distress with a view to proposing measures that can make health outcomes for the medical students and their patients better.

The literature cited above relates to the Lazarus and Folkman theory, the theory guiding this study in that it emphasises threatening tendency of the stress and how one appraises the stressors contributes to their stress. In the context of the forgoing, if an individual interprets death in hospital wards as one of the stages of human development, they will not feel distressed but if one interprets death as a permanent loss, they will feel distressed.

Having discussed the nexus between dying patients and distress among medical students, the following subsection discusses the connection between certifying dead bodies brought to hospitals and distress among medical students.

2.3.2 Examination of dead bodies for certification of death and distress

Certification of death by medical doctors is one area, which has shown to be a source of distress among medical practitioners the world over. A study on death and distress by McAllu, George and White (2005) found that the manner of death could cause uncertainty and anxiety among medical practitioners. In criminal investigation terms, manner of death is simply how one has died. For example, there are four manners generally accepted for death and these are natural causes, accidental death, suicide and homicide (Ramsland, 2017). It follows, therefore, that certifying the death of someone who has died due to accidental death, that is, by being crushed

into pieces by a train may be more stressful than certifying the death of someone who has died due to natural causes like a long illness. While distress as a result of certifying deaths due to unnatural means may be regarded as a problem for qualified medical practitioners who are qualified to certify a person dead, in developing countries like Zimbabwe this responsibility can ordinarily be passed on to trainee medical practitioners due to the insufficiency of the qualified medical personnel. Sometimes, doctors or medical students experience the impact of certifying a patient's death long after it occurs. The re-living of the experience can lead to feeling of numbness, guilt, and stress. The distress for physicians is reported to be compounded by COVID-19 pandemic-related deaths, where practitioners' fears are increased by the possibility of contracting the disease themselves during exposures like treatment or certifying dead bodies (Afshan, Ahmed, Anwer, & Khuhro, 2022).

While acknowledging the impact of examining dead bodies on medical health professionals, Mooney (2002) reported that some health care facilities in the United Kingdom such as the Plymouth General Hospital banned the full post-mortem procedure because they felt that it was more appropriate for nurses to spend their time with the living rather than with the dead. The acknowledgement by Mooney serves to demonstrate how working with dead bodies can be distressing, hence, the need for a possible departure from such a practice. Other studies that examined the stressful nature of post-mortems and working with dead bodies among medical practitioners include Srivastava, Paul and Razdan (2022) and Maixenchs, Anselmo, Sanz, Castillo, Macete, Carrilho... and Munguambe (2018). While both these studies implicated examination of dead bodies as a form of distress for the majority of medical practitioners, Paul and Razdan (2022) found no link between examining dead bodies and distress of seasoned and senior practitioners but a substantial amount of stress was found among junior practitioners. While studies such as those by McAllu et al. (2005), Ramsland (2017), Maixenchs et al. (2018), Afshan et al. (2022) and Srivastava et al. (2022) focused on medical practitioners who are already qualified and working, the present study focused on medical students still undergoing medical training to see if they also experience stressors similar to those who are already qualified.

Having examined the impact of examination of dead bodies during death certification, the following sub-section discusses the relationship of infant death in maternity wards and distress.

2.3.3 Infant deaths in maternity wards and distress

Maternity wards are supposed to be sources of happiness for expecting mothers and the medical practitioners responsible for them. However, sometimes some pregnant mothers are not so fortunate to hold their babies in their hands. Some infants do make it beyond birth whilst others are born dead and these experiences leave medical practitioners at risk of distress. In light of this, Agteren et al. (2019) and Mathews and MacDorman (2008) contend that death is a stressful event, which places a lot of burden on both the families and the practitioners working in the maternity wards. Medical practitioners who include medical students face such traumatic experiences frequently. The manner in which they deal with death and dying in maternity wards has, therefore, been a subject of interest for stress scholars.

A Ghanaian study by Dartey, Phetlhu, and Phuma-Ngaiyaye (2019) done in the Ashanti Region concluded that when faced with maternal and infant deaths, work becomes difficult for medical practitioners as they have to deal with stress and trauma emanating from seeing helpless infants and sometimes their mothers lose battle to death. This qualitative research used an exploratory descriptive design whose aim was to highlight the coping strategies adopted by midwives to mitigate the effects of maternal deaths and how they adapt to their work environment. Similar to the current study, Dartey et al. (2019) opted for purposive sampling to select eighteen ward supervisors and thirty-nine ward-based midwives. Data were collected through semi-structured individual interviews and focus group discussions with the latter being an addition, which the current study, did not have. An important methodological shortcoming, despite the use of a qualitative approach, gleaned from this study, was that the researchers did not focus on determining the cause-and-effect relationship of the phenomena under investigation. The researchers justified this by advancing that their objective was to depict coping strategies used by midwives to mitigate the effects of maternal deaths as they experienced them (Dartey et al. 2019). Studies such as Patel, Bachu, Adikey, Malik and Shah (2018) and Prins, Linn, van Kaam, van de Loo, van Woensel, van Heerde, M. ... and de Vos (2022) examined the contribution of infant deaths on physicians and concluded that such deaths are major sources of distress in the health delivery system.

In their study, Dartey et al. (2019) found that midwives resorted to a plethora of informal coping strategies to ameliorate the impact of witnessing infant deaths in the wards. These coping strategies included; talking to someone they trust irrespective of the person's professional background after experiencing maternal death, getting support from colleagues, involving personal family members, self-support which involved depending on their own will power and

inner strength to survive each time they experienced maternal death, and religious coping in which they found relief in praying to God. Welbourne et al. (2007) argue that the ability to cope efficiently with challenging work situations is contingent on a person's discrete understanding of that event because coping mechanisms depend on the source of the problem, individual's appraisal and situation in the workplace. In a related study conducted in Columbia, Henao-Castaño and Quiñonez-Mora (2019) found that infant death does not necessarily cause distress on health professionals. In their study, they found that nurses deal with potential distress by inhibiting their emotions towards the patient and their family. The study found that nurses resort to religious practices such as prayer to alleviate themselves from distress.

The studies cited previously (Patel et al., 2018; Dartey et al., 2019; Prins et al., 2022) all used exploratory qualitative approaches to examine the link between infant deaths in hospitals and distress of physicians. The weakness of exploratory qualitative studies is that they are not generalisable due to the subjective nature of data generated from participants. The present study therefore, used a convergent parallel design to obtain both qualitative and quantitative data to statistically and scientifically test the hypothesis that there is no link between medical students' distress and witnessing death and dying of patients while at the same time understanding the subjective experiences of the medical students. This allowed the triangulation of results and therefore, making the results generalisable to the larger population.

The literature above relates to the theory guiding this study, which is the Transactional Theory of Stress and Coping in that it has shown that while some health professionals experience distress when they see infant deaths in hospital wards as advanced by Patel et al. (2018), Dartey et al. (2019) and Prins et al. (2022), others do not experience distress as they inhibit their emotions towards patients as opined by Henao-Castaño & Quiñonez-Mora (2019). The literature above relates to the theory guiding this study, the Transactional Theory of Stress and Coping in that the theory emphasises the importance of appraisal and interpretations as being central in determining ones' state of mind after exposure to a potential stressful situation. As an illustration, he who appraises examination of dead bodies as being distressing is likely to experience distress while he who appraises and interprets death as something inevitable in human life will not experience distress.

The next section discusses the extent to which personal life events are linked to their distress.

2.4 PERSONAL LIFE EVENTS AND DISTRESS

Studies such as those by Gungor, Young and Sivo (2021), Torres-Chávez, Hidalgo-Rasmussen, Chávez-Flores, Telles, Rosales-Damián and Javier-Juárez (2022) and Buizza, Bazzoli and Ghilardi (2022) investigated the link between personal life events of students and their stress levels using students drawn from the general population at different universities. They found that personal life events such as losing a loved one, separation from a spouse and change of college circumstances was a major contributor to university students' distress. In their studies, negative life events were found to be unpleasant, uncontrollable, and therefore, generally stressful. Life events, as alluded to, describe numerous stimuli experienced during the progression of life (Seo et al., 2018; Steinmayr et al., 2019). Life events are one of the major factors in the mental health of university students in general. Personal life events include but are not limited to; pregnancy, gaining a new member in the family, change in health of self or family member, death of a loved one, marital separation, interpersonal relationships, and financial status. Extant literature reveals that university students with the capacity to cope with stress through healthy life events will probably exhibit better life fulfilment (Saha et al., 2014). Nevertheless, some studies reveal that stressful life events can have short and long-term outcomes on subjective well-being (Senocak & Demirkiran, 2020). While the above studies by Saha et al. (2014), Seo et al. (2018), Steinmayr et al. (2019), Gungor, Young and Sivo (2021), Torres-Chávez et al. (2022) and Buizza, Bazzoli and Ghilardi (2022) focused on general university students, the present study focused exclusively on medical students to establish if the cited effects experienced by general university students are also applicable to medical students from a Zimbabwean sample. The present study focused on medical students because medical students, compared to students from other programmes, are possibly the only ones who regularly visit hospital wards to face dying patients and that can make their distress a unique area of study.

Medical students are reported to have higher levels of psychological distress than their same-age peers despite having similar or healthier personal life profiles than peers at the outset of medical school (Noone, 2017; Al-Rouq, Al-Otaibi, AlSaikhan, Al-Essa & Al-Mazidi, 2022; Broks et al., 2022). In explaining how personal events impacted medical students, Noone (2017) used a 43-item questionnaire to measure the stress levels of medical students at the University of Galway, Northern Ireland and found a strong correlation between life events of medical students and their distress. In his study, Noone surveyed over five thousand medical patients using their Social Rating Re-Adjustment Scale, which is a self-report questionnaire

that is objectively crafted and weighted, asking the patients if they had experienced any of the series of forty-three life events in the previous twelve months. The items on the statement questionnaire included death of a spouse, death of a close family member, marital separation, serious personal injury, change in health of personal or family member, change in living conditions, sex difficulties, pregnancy, gain of a new family member and change in sleeping habits among other items. In the Noone study, the higher, the total score, the higher the likelihood that one was distressed. For example, a score of 150 gives a 50-50 chance of developing high level of distress, thereby increasing one's chances of developing an illness. While life events have been shown to adversely affect students' quality of life and professional development in general, the present study sought to establish if effects of personal events reported at the University of Galway by Noone study were applicable to the present study, which used a Zimbabwean sample from two newly established medical schools in Zimbabwe.

Further, studies such as those by Hill et al. (2018), Howarth, O'Connor, Panagioti, Hodkinson, Wilding and Johnson (2020) and Fontana, Generoso, Sizilio and Bivanco-Lima (2020) examined the role of personal life events in causing medical students' distress and found an association between life events and distress. The Hill et al.'s (2018) study concluded that personal life events make medical students, especially susceptible to stress and poor life fulfilment. The Hill et al. study identified personal life of medical students such as loss of a loved one, job loss of a parent, gaining a new family member and spousal separation as the leading causes of distress among medical students. The weakness of the Hill et al. (2018) study just like other quantitative studies already cited is that it used a structured questionnaire to collect data. The weakness of using such a data collection tool without other supporting tools is that it does not tell us about the feelings of the participants as expressed by themselves. The present mixed methods study addressed the rigidity element of the structured questionnaire by including a semi-structured interview to also understand how medical students feel about their distress.

While there is evidence of personal events being linked to distress in the medical schools, there is also evidence that medical students also experience numerous personal life stressors common to individuals their age (Dyrbye et al., 2006). In the Dyrbye et al. (2006) study which involved more than 1000 medical students, many participants reported personal illness or injury (25%), or change of health in a relative (42%) within the past year as personal life events that were stressful to them. Work-life balance (family/parenting), lack of time for self-care (sleep,

exercise) and complex personal relationships are some of the personal events found to cause distress to medical students. However, the exponential rise of multiple factors places even the most resilient student at high risk of burnout (Shapiro, 2011; Bell, 2013; Anne, 2014).

An Iranian cross-sectional study conducted on medical students by Hassanzadeh et al. (2017) with 4763 participants used a scale comprising 46 items in 11 various dimensions. The study utilised self-administered standard questionnaires to collect data. Data were analysed using latent factor regression for grouped outcomes to model the relationship of stressful life events, as latent predictors, with psychological problems, as the grouped outcomes. The study observed that stressful life events directly associated with components of psychological problems and their profile scores, with greater associations in females than in males. The researchers identified five prevalent sources of potential distress. First, home life was measured with addiction, divorce or separation, concern about addiction of a family member, quarrels with spouse, being accused, legal problems, and troubles with children. Second, financial problems were measured with getting in debt, low income, major financial problems, taking on a mortgage, and financial inflation. Third, social relations included social discrimination, major social changes, social insecurity, and concern about the future. Fourth, personal conflicts included loneliness, lack of social support, cultural alienation, not having an intimate friend, and failure in achieving life goals. Fifth and finally, job conflicts were measured with quarrels with colleagues/boss, dealing with customers, increased working hours, and improper working place and environment. The sentiments by Hassanzadeh et al. (2017) were echoed by another study conducted in Syria by Al Hourri, Jomaa, Arrouk, Nassif, Al Ata Allah, Al Hourri and Latifeh (2023) who reported that personal events such as financial problems and social relations were some of the causes of distress among medical students.

A major strength of the Hassanzadeh et al. (2017) study was that its use of a large population, to which it applied latent factor regression modelling for grouped outcomes with confirmatory latent predictors for evaluating the association of stressful life events and psychological disorders. The current mixedmethods study used a similar approach with a small sample. The Hassanzadeh et al. (2017) study acceded that due to the cross-sectional design of their study, cause-and-effect relationships could not be inferred from their findings and as such, the current mixedmethods study attempted to overcome the failure to determine the cause-and-effect hurdle through method triangulation, in which modelled data were further explained using interview data.

Having highlighted in general terms the different types of life events that have the potential to impact negatively on the medical students' performance, the following sub-section discusses specific life events and how these are potential sources of distress among medical students.

2.4.1 Pregnancy and distress

While for the majority of women having a baby is one of the most exciting developments in one's life, it can be a source of stress for others. Worse still, giving birth can be a distressing and debilitating event for others. In a study which focused on non-students by Holmes and Rahe (1967) cited in Noone (2017), pregnancy was found to be a contributing factor to women's distress. A Czech Republican study, which focused on general college students by Stepanikova et al. (2020: 1199), found that pregnancy was more distressing in the earliest stages as compared to later pregnancy or postpartum stages and concluded that:

...the magnitude of the effect of life events was the largest for early pregnancy. It was almost double compared to later pregnancy and triple compared to postpartum. Notably, the pattern was reversed for depressive symptoms. No effect was found for early pregnancy and the effect for postpartum was slightly larger compared to late pregnancy. Based on these results, life events matter most during early pregnancy while depressive symptoms are especially important during postpartum.

Stepanikova, et al. (2020) confirm the fact that while pregnancy should bring joy and happiness to pregnant women, it is, more often, a source of distress for young women, especially those who are still pursuing an academic or college career. Other studies, such as those by Vehmeijer et al. (2020), Ibrahim, and Lobel (2020) also interrogated the relationship between pregnancy and distress in women and concluded that pregnant women in general, suffered such psychological and emotional disturbances as anxiety, depression, hostility, phobic anxiety, interpersonal sensitivity, obsessive-compulsiveness, paranoid ideation, psychoticism and somatisation, which are all indicators of the presence of distress.

While studies like those by Stepanikova et al. (2020) focused on non-students and Vehmeijer et al. (2020) and Ibrahim and Lobel (2020) focused on general college students, their findings are important in understanding the link between pregnancy and distress among women in general. The present study sought to find out if medical students in particular, also experienced similar effects of distress as experienced by non-students and by students from the general population of college or university.

Dryer, Schulenburg and Brunton (2020) used a quantitative approach to research on the relationship between stress and pregnancy. In their study, which examined the impact of culture on pregnant women, found out that younger women were more prone to socio-cultural pressures, which border on thinness and body dissatisfaction during pregnancy and concluded that engaging in fat talk during pregnancy was detrimental to women's mental health. Studies such as the one by Dryer et al. (2020) lays bare the relationship between pregnancy and distress from a general point of view. A similar study by Taubman–Ben-Ari, et al. (2020) also used a quantitative approach on a sample of 336 Jewish and Arabic pregnant women from Israel and found that pregnant women have heightened anxiety and psychological distress. The relationship between stress and pregnant women, therefore, needs a scrutiny in order to ascertain if it is a universal phenomenon and to ascertain if the students at universities suffer from similar effects. Both studies (Dryer et al., 2020; Taubman–Ben-Ari, et al. 2020) relied on a quantitative approach to determine the link between pregnancy and distress. The weakness of such a reliance on quantitative approaches is that they focus on the relationship between two variables, that is, pregnancy and distress and do not tell the cause and effect. The current mixed methods study, which sought to examine the extent to which pregnancy as a life event affected the distress levels of women used the qualitative part of the study to explore the cause and effect relationship between pregnancy and distress, an aspect which is not possible with an exclusively quantitative approach.

Having discussed pregnancy as a potential contributor to distress among medical students, the following subsection discusses how the gaining of a new member in the family can cause distress to the medical students.

2.4.2 Gain of a new member in the family and distress

Research studies that focused on general population of students such as Anne (2014), Bell (2013) and Shapiro (2011), investigated the link between birth of a child and distress. These studies seem to concur that while childbirth and childrearing are defined as positive life events, children add a level of complexity to students' lives with a mental health effect that may be gender-specific. According to Anne (2014), female students were more likely to be depressed if they had children, whereas no such relationship was observed among their male colleagues. In support, Stoll, Hall, Janssen, and Carty (2014) also researched on how the general population

of students responded to the gain of a new member and they asserted that childbirth while at college increases the responsibilities of the female student, thereby exposing them to stress. The cited study posits that stress originates from the care demands of the child. Care demands mean the mother shelves or abandon some tasks such as assignments and reading to provide special care to the young one. The present study focused on medical students to establish if the gain of a new member contributes to their distress the same way it does to the general population of students as revealed in literature by Shapiro (2011), Bell (2013), Anne (2014) and Stoll, Hall, Janssen and Carty (2014).

Other studies that focused on general students and have found a correlation between gaining of a new member in the family and distress are Gausman et al. (2020), MacGinty et al. (2020) and Marsh et al. (2020). The Gausman et al. (2020) study carried out in three low and middle-income economies in Ethiopia, India and Vietnam used a sample of 5485 mothers who had welcomed new members into the family through giving birth. The participant sample was as follows: Ethiopia 32.6%, India 30.5% and Vietnam 1.28%. The study concluded that mental distress as a result of birth of a child was more pronounced in women who had six months to one and half years postpartum. The study by MacGinty et al. (2020) which used data from the Drakenstein Child Health Study, a birth cohort in South Africa, sought also to determine if newly born babies bring distress to the family. The study surveyed 961 women and concluded that there was a positive correlation between childbirth and distress. The three cited studies (Gausman et al., 2020; MacGinty et al., 2020; Marsh et al., 2020) all used a quantitative approach. As alluded earlier, studies that focused on general population of students may not be a reliable source of information regarding the distressing experience of medical students who would have gained new members in their families hence, the present study focused exclusively on medical students to establish if gaining a new member had an effect on the distress experiences of medical students at two Zimbabwean medical schools.

The following subsection discusses how the illness of a family member contributes to distress of medical college students.

2.4.3 Change in health of self or family member and distress

Major personal illness and illness of a close family member have been implicated in university student distress. Numerous studies such as Stewart-Brown, Evans, Patterson, Petersen, Doll,

Balding and Regis (2000), Modis, Mokgaola, Sehularo and (2021) and Amass, Van Scoy, Hua, Ambler, Armstrong, Baldwin, ... and Curtis (2022) researched on the correlation between personal illness and distress among the general population of university students and found a strong correlation between illness of self or family member and distress. The above studies found that, among other personal life events, the health status of students is a serious indicator of distress among university students. In support, Stewart-Brown et al. (2000) opined that students who fell ill in the last twelve months seem to have higher levels of distress if compared to students who had not had major illnesses within the last twelve months. According to the study by Stewart-Brown et al. (2000), falling ill while at university is part of human development most students are not prepared for as this sometimes leads one to assume a sick role at the neglect of the school assignments, school tasks and even examinations. The other study that focused on general population of students, for example, Schwarzer and Luszczynska (2012) found a correlation between the illness of a loved one and distress. According to this study, the illness of a close member of the family is associated with distress because it disrupts the way of life for family members. The family is normally affected following the illness of a family member due to, among other things, fear of loss, and assumption of duties previously done by the ill member. These responsibilities also add to the emotional burden faced by students who concentrate on academic work.

Also focusing on the general population of university students, Khandelwal et al. (2020) conducted a study on the relationship between the illness of a member and distress in the United States of America. Their study used a sample of 175 students, which were drawn from the University of Washington, and from the University of North Carolina. They reported high levels of psychological distress, symptoms of depression and anxiety among family members who stayed with critically and chronically ill members. In another study, Chronister, Fitzgerald, and Chou (2021), interrogated the role of the family as a source of social support to ill members of the family and how they are impacted by the change of life for any one member of the family. The study by Chronister et al. (2021) focused on mental illness of a member within the adult population who were not going to school; the study while not focusing on college or university students, it however, provides a useful insight in understanding how the illness of a family member can contribute to the distress of other family members. Chronister et al. (2021) used a sample of 14 adults in a qualitative approach and concluded that family members endure more stress and anxiety due to the change of family circumstances, such as the role of assuming responsibilities previously done by the ill member. As alluded to, while

the Chronister et al. (2021) used a qualitative approach, which captured students' lived experiences, it could not be generalised to medical students since its focus was on the general population of adults who were not attending any school or university. The lack of generalisation prompted the present study to investigate sources and levels of distress among medical students using a mixed methods approach to allow for the generalisation of the study results.

While studies by Stewart-Brown et al. (2000), Modis et al. (2021) and Amass et al. (2022) used quantitative approaches, the fact that they focused on non-student population meant that a more direct study focusing on the sources and levels of distress among medical students needed to be carried out, hence the present study. The present study focused on medical students because their mental well-being or lack of it may affect the health outcomes of their patients. To understand distress emanating from the illness of a family member, Khandelwal et al. (2020) used a quantitative approach to measure distress among adults who were not going to college or university. The study, like other cited quantitative studies, typically had a weakness of failing to capture the lived experiences of the students, as such, the study might have failed to provide a full account of students' distress as told by students themselves. In view of the highlighted weaknesses, the current mixed methods study sought to determine the relationship between the illness of a family member and distress, specifically on medical college students to get a fuller appreciation of medical students' distress and to generalise the findings.

Having examined how the illness of a family member can impact the medical college students, the following subsection discusses how loss of a loved one can contribute to distress in medical students.

2.4.4 Death of a loved one and distress

While death is inevitable, death of a family member or any significant other is difficult to contend with. Studies such as Stroebe, Abakoumkin and Stroebe (2010) and Joaquim et al. (2021) researched on the link between death of a loved one and distress among the general population of university students and found that the death of a loved one is one of the leading causes of distress in students. While buttressing the psychological effect of losing a loved one, Joaquim et al. (2021) posited that the mixed experience of loss of a close family or friends, especially during the height of COVID-19 could elicit negative manifestations of affection, and psychological distress. In examining the impact of losing a loved one, Stroebe, Abakoumkin and Stroebe (2010) posited that the intensity of the stress caused by the life event depends on the extent to which the perceived demands of the situation tax or exceed the individual's coping

resources, given that failure to cope can bring harmful effects. According to Stroebe et al. (2010), the loss of a significant other in the last twelve months, especially a partner leads to discrepancies in areas that can broadly be characterised as loss of instrumental support, loss of validation support, lack of emotional support and loss of social contact support. Furthermore, the foregoing study postulated that the loss of a spouse is a key contributor to the distress levels. This is largely so because the extent to which spouses feel supported by their partners are key indicators of marital satisfaction. In addition, loss of loved ones like a child, a sibling or a mother is ordinarily speaking, a source of distress. While studies by Stroebe et al. (2010) and Joaquim et al. (2021) focused on general university students and found a correlation between personal life events of students and distress, the present study sought to establish if medical students experienced the same effects as those experienced by the students from other faculties.

A study by Corden, Hirst, and Nice (2008) found that loss of loved ones does not cause distress in general, but posited that a lot depends on the timing of the interviews after such loss. The timeframe is the most critical aspect when determining distress due to loss of a loved one. If interviews on distress are conducted ten months after the loss, the participants might not necessarily show distress. Not only does loss of a loved one predict distress for students but also people whose psychological well-being was relatively secure, as well as those already experiencing high levels of distress, were vulnerable to the emotional impact of loss. In a study aimed at understanding the effects of death of a loved one, Laranjeira et al. (2022) found that 51% of participants in their study faced high susceptibility to sorrow and showed a raised need for emotional support, particularly in dealing with expressing emotions and feelings. Most bereaved individuals adapt to loss, but a significant minority report high levels of persistent grief symptoms long after loss. The Laranjeira et al. (2022) study reported that complicated grief manifests in excessive rumination, alienation, hopelessness, and intrusive thoughts about the dead.

The preceding studies like the Corden et al. (2008), Joaquim et al. (2021) and Laranjeira et al. (2022) appear to suggest that the experience of distress because of the loss of a loved one is a subjective experience. The foregoing literature review presented mixed and perhaps inconclusive findings on the impact of death of a loved one on distress. Given the inconclusive nature of the preceding findings, the current study, therefore, sought to examine the effect death of a loved one had on the distress of medical students at two Zimbabwean universities. The medical students were chosen in the present study because of the clinical nature of their duties

that expose them to dying of patients and deaths in the wards. Deaths in the wards may make the medical students' distress unique when contrasted with students from other academic programmes. For this reason, understanding the impact of losing a loved one by a medical student may allow decision makers to allow medical students sufficient time off after losing a loved one to give them enough healing time. Such may help reduce negligence related hospital accidents.

The following subsection discusses how marital status can affect the experience of distress.

2.4.5 Marital separation and distress

In a bid to understand the impact of marital separation on human well-being, Crabtree and Harris (2020) carried out a study comprising 20 married male individuals who were non-students. At the time of the interviews, these were identified as having separated from their wives. According to the above study, separation and divorce are not synonymous. Marital separation is an understudied phenomenon linked to divorce related processes and transitions (Crabtree & Harris 2020; O'Hara, Grinberg, Tackman, Mehl & Sbarra, 2020). Crabtree and Harris (2020:01) investigated marital separation and found that:

During separation, a couple remains legally married, but their relationship is on hold, either legally or informally, due to relationship distress. ... a socially ambiguous status—not quite married, not quite divorced. Treating separated persons as divorcing suggests an assumption that separation inevitably and linearly leads to divorce and leaves little room to examine different outcomes (e.g., reconciliation, long-term separation), pathways to various outcomes, or unique elements of the separation experience. This also implies that marital decision-making happens prior to separating when it may continue after.

The preceding study concluded that separation is not sustainable and that those involved in separation cannot go on indefinitely as the doubt of the future was too much to bear. In support of the above findings, Wolchik and Sandler (2013) assessed how separation affected children and their parents and concluded that during separation one may feel overwhelmed by everything that goes on during separation, especially when it comes to having to tell one's children or parents, friends or colleagues about one's separation. The study by Wolchik and Sandler (2013) also found that having to deal and manage the emotions and reactions, or even the act of sharing and distributing the property and other possessions. While studies by Wolchik and Sandler (2013) and Crabtree and Harris (2020) focused on adults who were at neither university nor college, they however, have important implications to our understanding of the role of marital separation in human distress.

Similarly, studies such as Tong, Chen and Shu (2019) and Reneflot, Oien-Odegaard and Hague, (2020) researched on the association between marital separation and distress using secondary data and found a positive correlation between the two variables. The Tong, Chen and Shu (2019) study used 2010, 2012 and 2014 data from the Chinese Family Panel Studies (CFPS). While the Reneflot et al. (2020) study used secondary data from the Norwegian Population Register of between 2005 and 2015 to conclude that marital separation and distress had a positive correlation. The weakness of using secondary data as in the studies by Tong et al. (2019) and Reneflot et al. (2020) is that the data used was from China and Norway respectively and hence, may not be relevant to a Zimbabwean study like the present study. In addition, secondary data used do not provide answers to some research questions in the present study, hence the use of the current mixed methods approach, which combines questionnaires and interview questions, to answer all the questions about medical sources and levels of distress among medical students in the two newly established medical schools in Zimbabwe.

Having discussed the relationship between marital status and distress in medical students, the following sub-section discusses interpersonal relationship can be linked to distress in medical students.

2.4.6 Interpersonal relationships and distress

Extant literature has shown that interpersonal relationships are one of the leading causes of distress among the general population of university students (Waiswa, Baguma & Oonyu, 2020; Adams, Murdock, Daly-Cano & Rose, 2020; Smith, Brown, Grady, Sowl, & Schulz, 2022). Similarly, Kaur and Bashir (2016) suggested that most adolescents at the institutions of higher learning are preoccupied with the critical need to develop relationships with fellow students of the opposite sex. In an effort to develop these relations, most students find it difficult to initiate a romantic dialogue or to propose to their counterparts, hence exposing them to unending distress. The above study implicates lack of confidence and general lack of security as major causes of distress among these students. In their study, Wang and Ko (1999) found that developing and maintaining a heterosexual relationship during adolescents can be a nightmare for most students, especially during the first years at college. These studies appear to agree that interpersonal relationships pose a great challenge for young adults, especially those that are at college or university. According to these studies, distress emanates from the need to belong. In

support, Erikson (1950, 1968) cited in Jackson and Finney (2002) suggests that one of the most significant developmental tasks for young people involve identity formulation and sustaining intimate relationships. This means, if the relationships between or among students do not work out according to expectations; they become a fertile ground for distress. While literature is replete with evidence linking interpersonal relationships with distress among students from the general population, little evidence has been found regarding medical students' interpersonal relationships and distress, hence the present study focused, specifically on medical students to establish if they experienced the same effects as the general population of students.

In an attempt to explain the importance of inter-relationships, psychologists studied a variety of reasons that prompt people to look for social contact: the yearning to associate with others and the need to affiliate as well as the need to have intimacy. According to O'Connor and Rosen-blood (1996) cited in Darling et al. (2007), inter-relationships which are primarily about affiliation of people are based on an affiliation model. This model proposes that people seek to maintain an optimal level of social contact and this model suggests just like other homeostatic models, deviations from a preferred level of interpersonal contact motivates people to adjust their behaviour so that an optimal degree of contact is restored. According to this study, after an episode of solitude, people will be motivated to seek out additional opportunities for affiliation, whereas after having a high amount of contact with others, people will draw back and affiliate less for a time. To augment the above assertion, Leary (2010) postulates that affiliation is the desire to establish and maintain rewarding interpersonal relationships and affiliation with others helps to fulfil the need for social comparison, since people depend on others for information about the social and physical world around them. The same study concludes that the longing for close, communicative relationships known as the need for intimacy is also of critical importance in understanding distress among students (Leary, 2010).

Studies such as those by Campbell, Blank, Cantrell, Baxter, Blackmore, Dixon and Goyder (2022) and Fu, Hu and Liu (2022) looked at the link between the interpersonal relationships and distress among students from the general population and found that there were highest distress levels for divorced students, followed by non-married partners and much lower for the married students. In explaining distress levels for married students, Dyrbye, et al. (2006) found marriage to protect against distress. In an attempt to understand the impact of marriage on distress, Dyrbye, et al. (2006) administered a graduation questionnaire to the students from the Association of American Medical Colleges in 1995. Of the sample, 30% were married (a lower

prevalence than reported in the age matched general population), and another 14% were engaged or partnered and the finding of this study was that marriage acted as a buffer zone for distress. The lower stress found among married students relative to their single counterparts was attributed to the emotional support provided by the spouse. Although marriage is relatively common among medical students, smaller numbers of students (10%) have children by graduation. Similarly, divorced students as well as non-partnered students' high levels of distress were attributed to lack of emotional support, which in most cases is derived from spousal relationships. In explaining inter-relationships challenges, Keser, Kahya, and Akin (2020; 03) used a Stress Generation Hypothesis Model of depressive symptoms in interpersonal stressful life events and asserted that:

Conflict includes misunderstandings, disagreements, disparagement, disapproval, criticism, sarcasm, or rejection in the communication process. When a conflict occurs in an interpersonal relationship, communication lacks warmth, nurturance, care, and empathy. Conflict in communication generally stems from different thoughts, values, and feelings between individuals. In the process of conflict, some individuals cannot use confrontation, self-disclosure, or emotional expression to deal with it since they may lack of emotional well-being and the ability to interpret conflict events in healthy ways.

From the above observations, students having misunderstandings, rejection or criticism or sarcasm are at high risk of distress. According to the above study, the impact of these conflicts is, especially worse for live-in boyfriends and girlfriends who would have to separate while the college life moves on. Sometimes separations are worsened by the fact that the relationship would have come to be known by colleagues, hence adding more pressure to the student. Studies by Campbell et al. (2022) and Fu et al. (2022) focused on general university students, hence the present study focused on medical students to establish if medical students experienced the same effects as those experienced by general university students. While the study by Dyrbye et al. (2006) focused on medical students, it was conducted using a sample from an American University, hence the present study focused on a Zimbabwean sample drawn from two Zimbabwean universities to establish if interpersonal relations similarly affected the Zimbabwean sample.

Having discussed how interpersonal relationships are linked to distress, the following subsection looks at how financial status can be linked to distress in medical students.

2.5 FINANCIAL STATUS AND DISTRESS

Financial status among the general population of students at institutions of higher learning has been studied and found to have a direct correlation with distress (Hicks, 2021; Hossain, Mahfuz, Latif & Hossain, 2023; Szkody, Hobaica, Owens, Boland, Washburn & Bell, 2023). Finances matter a great deal for various aspects of individual, couple and family well-being and they have been consistently identified as one of the top stressors in American Students from across different faculties (Kelley et al., 2022). While the above studies focused on general college students and not medical students, they however, provide a very good basis from which to conceptualise the link between the financial status and medical students' distress.

While focusing on general university students and using a health model known as Roy Adaptation Model (RAM), Heckman, Lim, and Montalto (2014) study the impact of finance on college students. This model talks about the likelihood of college students to report financial distress. Under this framework, the patient is viewed as an adaptive system that manages external or internal stimuli through control processes and effectors (coping mechanisms) and the output is either adaptation (health) or ineffective responses (Heckman, et al., 2014). According to Heckman, et al. (2014), what exacerbates the situation at colleges is the fact that peers whose parents have better paying jobs usually overshadow students with poor financial resources by always having money to recklessly spend. In the study, the majority of the students also revealed that they did not have enough loan money to cover basic needs through summer without having to take out another loan that charges higher interest.

Similarly, a study conducted in the United States of America by Hurd, Bethany and Powell (2016) posits that financial stressors are common for most college students. Most students carry the burden of a student loan, and often do not have time to get jobs. College students, therefore, always have to make a decision as to whether they can survive with current funds or acquire another student loan. Similarly, Cadaret and Bennett (2019) posited that among students drawn from different faculties at institutions of higher learning, the financial status plays an important role in students' well-being, and poor financial status has harmful psychological effects that if uncontrolled may lead to negative health outcomes and poor academic results. Research has also found a close nexus between financial stress and family background in terms of family income, race, gender, and first-generation status. Most studies focusing on financial status and distress seem to suggest that most college students' distress emanates from financial stressors. These stressors include living expenses, tuition and academic expenses, overspending or credit

card debt, student loan debt, work–school–life balance, financial pressures from family, and uncertain employment after graduation (Beiter et al., 2015; Heckman et al., 2014; London, 1989; Nelson et al., 2008; Wisconsin HOPE Lab, 2016; Tran, Lam & Legg, 2018).

Poor financial resources base coupled with many financial demands for the purchase of academic equipment, such as laptops, memory sticks, textbooks and other items like exercise books and pens seem to put more pressure on students, thereby exposing them to distress. In support, Cadaret and Bennett (2019) found a positive relationship between increased financial demands and stress. Moreover, increased financial demands were linked to the presence of anxiety and other mental health challenges in students and that increased financial demands were predictive of lower engagement in college activities such as studying and the overall academic performance of students (Hunt et al., 2012; Joo, Durband & Grable, 2009; Ziskin et al., 2014). Finance induced distress emanates from financial issues such as amount of debt, lower availability of family financial resources, and increased need for employment and these have been found to be particularly impactful with respect to attrition rates (Lombardi, Murray & Gerdes, 2012). Some European studies, however, did not find a direct link between financial status and students' distress. Studies such as McCloud and Bann (2019), Wilson et al. (2022), found that financial status in European settings was not a major issue since the education model in Europe has funding options, thus putting little burden on the individual student. While studies cited earlier in literature (Nelson et al., 2008; Heckman et al., 2014; Tran et al., 2018; Cadaret & Bennet, 2019; Heckman et al., 2020; Hicks et al., 2021; Kelley et al., 2022; Szkody et al., 2023; Hossain et al., 2023) reveal a strong nexus between the financial status of general students at universities and distress, the present study focused on medical students to establish if medical students from a Zimbabwean sample also experienced similar effects of distress to those experienced by students from the other faculties within the university environment.

Regarding medical students, a study conducted in the United States of America by Hill, Goicochea and Merlo (2016) investigated the relationship between financial status of medical students and their distress. The study found that like students from the general population, most medical students have financial concerns that affect their school performance. According to the preceding study, the majority of students at the universities have challenges in terms of financial support, leading to higher levels of distress. In fact, Hill et al. (2016) indicate that most students expressed frustration over lack of money. While the sentiments raised by Hill et al.(2016) were echoed by a study by Ziskin et al. (2014), the limitation noted in the Hill et al.

(2016) study is that it was based on a grounded theory methodology that was susceptible to the biases of the researcher because of its qualitative nature. To address such a limitation, the present study used the mixed methods approach, which included quantitative techniques to address the biasness emanating from the qualitative approaches.

Despite the abundance of literature linking students from the general population at universities and evidence of medical students' distress at international level, there is little evidence of medical students' distress at the local level, hence the present study sought to establish if medical students drawn from the Zimbabwean sample also experienced the same effects as general students and medical students from other contexts.

Having examined the link between financial status and distress in medical students at a global level, the current study sought to examine the extent of such a link using a Zimbabwean sample of medical students.

The following sub-section discusses levels of distress that can be experienced by university students.

2. 6 LEVELS OF DISTRESS

Studies that have examined distress among the general population of students identify different levels of distress. Distress can be measured and classified into three distinct levels as can be experienced by an individual, and these are mild, moderate, and severe (Jones & Johnston 1997; Gust et al., 2017). Jones and Johnston (1997) and Gust et al. (2017) measured distress levels among general university students and found that university students suffered more distress as grade level increases. On the contrary, a study by Rafique, Al-Asoom, Latif, Al Sunni, and Wasi (2019) measured distress for medical students using the Kessler 10 (K10) scale. The K10 scale is a 10-item questionnaire that measures stress levels, using questions on anxiety and depressive symptoms that a person has experienced during the last month. Numbers are assigned to 10 response options for items, which are then added up to yield a total score. Scores range from 10 to 50. Based on these scores, subjects are classified as having mild, moderate, and severe stress. According to Rafique et al. (2019), those who score, less than 20 experience no stress, those who score between 20 and 24 experience mild stress, those who

score between 25 and 29 experience moderate stress and those who score more than 30 experience severe stress.

In explaining distress levels among the general population of students, Niedobylski, Michta, Wachol, Lopuszańska, Samardakiewicz and Próchnicki (2022) posited that students at different levels of distress (mild, moderate and severe) may display such behaviours as serious grade problems or a change from consistently passing grades to unaccountably poor performance. Some students display excessive absences from school, which is, especially visible if their current attendance is compared to the previous attendance (Bore, Kelly, & Nair, 2016). Students in moderate distress may exhibit behaviours that indicate significant emotional distress. They may also be reluctant or unable to acknowledge a need for help. One key defining feature of students at the moderate level are repeated requests for special consideration, such as deadline extensions, especially if the student appears uncomfortable or highly emotional while disclosing the circumstances prompting the request (Lyndon et al., 2014). The same study also found out that students with moderate levels of distress could display new or repeated behaviour, which pushes the limits and interferes with effective management of the environment, unusual or exaggerated emotional response that is disproportionate to the situation. The present study focused on measuring the distress levels among medical students at two newly established medical schools in Zimbabwe to establish if the local sample experienced similar distress thresholds as those in other countries as reported in literature by Bore et al. (2016) and Gust et al. (2017). The choice of medical students for the present study was informed by the unique training curriculum they undergo and the seriousness of their duties while in clinical settings helping patients. Understanding the levels of distress for medical students may help authorities in hospitals to deploy or not deploy medical students with a certain threshold of distress.

In terms of academic levels, the Rafique et al.'s (2019) study focused on medical students and used the K10 scores to first determine if the distress was mild, moderate or severe and thereafter, the frequencies and distributions of students into these categories were calculated for each academic level. A comparison of mean K10 scores across study-year levels was conducted using one-way ANOVA. In their study, Rafique et al. (2019) investigated the prevalence of physiological distress among first-year medical students and the stress scores increased significantly with progression in the year of study. Other authors have reported almost similar results (Vehmeijer et al., 2020; Voltmer, Kösllich-Strumann, Voltmer, & Kötter,

2021). High stress levels in the first-year group may be due to the nature and overload of the work inherent to the medical course. In fact, entering medical school is associated with numerous challenges, beginning with a substantial burden associated with one's studies, frequent assessments, a high cut-off point, a competitive environment, and high expectations by parents and society. As the course progresses, medical students continue to suffer high levels of distress owing to their exposure to the clinical settings where they engage in surgical procedures and unavoidably witness death in the hospital wards ((Rafique et al., 2019; Vehmeijer et al., 2020). Taken together for the first two pre-clinical years of medical education, some studies found a significant increase in stress and mental health symptoms as well as the proportion of students with risk patterns. In the following clinical years, this development partly reversed but a high proportion of students with the unambitious patterns emerged (Voltmer et al., 2021).

Recent studies such as those by Melaku and Bulcha (2021), Alotiby (2022), Gellisch, Bablok, Morosan-Puopolo, Schafer and Brand-Saberi (2023) measured distress levels of undergraduate medical students who were at various levels of their programmes and concluded that medical students responded differently to stressors. After measuring distress levels across academic grades for medical students, Melaku and Bulcha (2021) concluded that medical students suffered more distress at the beginning of their medical training due to adjustment issues. Melaku and Bulcha (2021) recommended counseling centres to help the new students adjust to the new college environment. Similarly, Gellisch et al. (2023) measured distress levels of preclinical medical students as well as those who were in the clinical years and they concluded that preclinical students who were doing first year medical studies experienced more distress than the clinical students. In contrast, Alotiby (2022) reported higher stress levels for medical students in higher-grade levels. Given that the studies cited above seem to have varied findings about the grade level affected most by distress, the present study sought to establish if distress levels among medical students were similar across the grade levels.

Having examined how to measure the levels of distress among university students, the following section discusses how university students cope with distress.

2.7 COPING WITH DISTRESS

The tertiary education climate is perceived as an extremely stressful environment for students across the faculties. General students from institutions of higher learning are susceptible to distress and to manage their distress, they employ different coping strategies such as cultural and religious styles, social support and meaning making (Greer, 2021; Shpakou, Krajewska-Kulak, Cybulski, Seredocha, Talaj, Andryszczyk, ... & Modzelewski, 2022); Mishra, Samanta, Panigrahi, Dash, Behera & Das, 2023). The way students at higher institutions of learning cope with distress has important implications to the present study. The present study sought to determine if the coping styles used by general college students were similar to those used by the Zimbabwean medical students.

Medical students were found to experience distress emanating from the academic climate at medical schools (Yusoff et al., 2011). Undergraduate medical studies are highly competitive (Fiorotti et al., 2010) and involve difficult, demanding courses over a long duration (Soliman, 2014). Medicine is characterised by many demands on oneself, social expectations and excessive responsibility. Because of this, the study of medicine is stressful and medical students are, thus, expected to experience greater incidence of depression, anxiety and stress than others (Puthran et al., 2016; Dyrbye, et al., 2006). Research reveals that when medical students begin their studies, they very often experience depression levels comparable to those of the general population (Akhtar, Herwig & Faize, 2016). Medical students may experience stress when curricular demands exceed their resources to deal with them (Moffat et al., 2004 and Heinen, Bullinger & Kocalevent, 2017), and they have been reported to suffer from higher perceived distress compared to the general population and students in other academic fields (Dyrbye & Shanafelt, 2011; Voltmer, Kötter, & Spahn, 2012).

In the light of the stressful situations cited above, medical students need to develop resilience to cope with various sources of distress during their training. Coping is a very broad concept, which involves the subjective appraisal and response to stressful events (Senderayi, 2021). Coping is conceptualised as cognitive and behavioural efforts to manage situations appraised as taxing or exceeding a person's resources and is therefore an effort to avoid or minimise what an individual appraises to be a stressor (Carver & Connor-Smith, 2010). This study used the Transactional Theory of Stress and Coping (Lazarus & Folkman, 1984) as a theoretical model in which coping is initiated through secondary appraisal. Secondary appraisal imports the decision a medical student' takes in choosing an appropriate action to take when confronted

with a stressor. Given that distress affects individuals differently, the actions that people take cope with distressors will be a matter of individual differences. Therefore, using coping strategies effectively and as appropriate will undoubtedly help medical students in reducing their stress level (Yusoff, et al., 2011).

According to Folkman and Lazarus (1984), coping is grouped into two general types: problem-focused (PFC) and emotion-focused (EFC). However, Carver (2013) broadened this framework by adding potentially maladaptive emotion-focused coping (PMEFC). The current study, therefore, conceptualised coping based on this categorisation with the three broad coping categories. In the present study, coping is limited to three categories. Each category has five dimensions, as detailed in the COPE-DV (Carver, 2013). Carver (2013) proposed fifteen (15) dimensions of coping. Five dimensions assess conceptually distinct aspects of problem-focused coping (active coping, planning, suppression of competing activities, restraint coping, seeking of instrumental social support); five dimensions assess aspects of what might be viewed as emotion-focused coping (seeking of emotional social support, positive reinterpretation, acceptance, denial, turning to religion); and five dimensions assess coping responses that are less useful (focus on and venting of emotions (venting), behavioural disengagement, mental disengagement (self-distraction), humour, substance use). Supporting the use of three categories. Connor-Smith and Flachsbart (2007), indicate that the utilisation of the three categories and five dimensions per category should not disqualify the use of other categorisations since there are many other categorisations that can be used to explain coping. The present study sought to establish if the coping styles cited in the above literature are also applicable to the Zimbabwean sample.

The following subsection discusses the use of problem focused coping in dealing with distress.

2.7.1 Problem-focused coping

Problem-focused coping implies that, an individual identifies the source of distress or the stressor and then carries out an action that helps him or her to avoid or reduce the effects of the stressor (Carver & Connor-Smith, 2010). Problem focused coping includes dimensions such as active coping and planning (Senderayi, 2021). Active coping is when an individual takes aim at the form of stressor as well as on how the stressor is appraised. (Rothmann, Jorgensen & Marais, 2011). Carver et al. (1989), highlight that active coping involves deliberate effort, and

is a product of direct and conscious effort by the distressed individual to deal with the stressor itself. Planning on the other hand, is concerned with the best ways of managing distress and deals with evaluating options of how best to manage the stressor (Senderayi, 2021). The dimension of social support for instrumental reasons is when an individual seek outside help to get useful information, which can be used to manage the problem. When an individual is overwhelmed with distress, they may resort to suppression. Suppressing competing activities as a coping strategy allow an individual to ignore distractions or diversions to put their attention fully on the source of distress (Senderayi, 2021). Restraint, on the other hand, is the exercise of self-control, the ignoring or avoidance of spontaneous actions (Carver et al., 1989).

A study on coping by Schiffrin and Nelson cited in Senderayi (2021) revealed that individuals who chose to use active coping were capable of sustaining high work engagement levels, while those who did not use this strategy were characterised by low levels of work engagement. In a quantitative study of Malaysian medical students, in which the Brief COPE inventory was one of the three quantitative measures administered (Yusoff et al., 2011), the top five coping strategies were religion, active coping, positive reinterpretation, acceptance and planning. It can be noticed that active coping and planning were ranked second and fifth, which implied that medical students in this Malaysian sample who are Muslim did not resort to the use of alcohol and substance abuse on account of their religion, which does not encourage alcohol use. The present study, which used a predominantly Christian sample, sought to find out if the medical students also used similar coping styles as those used by Muslim students from the Malaysian sample.

The following subsection discusses the use of emotion-focused coping and distress.

2.7.2 Emotion-focused coping

According to Carver et al. (1989) cited in Senderayi (2021), Emotion-focused Coping involves a situation where a distressed individual evokes feelings of pity, asks for compassion, or moral support to ameliorate distress. Emotion-focused coping is concerned with bypassing the stressor and focusing attention on managing the feelings, which cause the distress. The individual decides to view the stressor positively as opposed to seeing it as what it is hence, seeing it in a good way. Seeking emotional social support is aimed at stimulating empathy. Religious coping entails one using their own faith and belief system to manage distress. Acceptance as a coping strategy involves a distressed person completely resigning to the reality

that whatever they do, they cannot change the stressor. It means one is coming to terms with fact that the stressor is unchangeable. The use of humour, on the other hand, refers to laughing off the stressor or making jokes about it in an attempt to minimise the stressor. Humour as a coping style is described as a general positive character strength that contributes most strongly to life satisfaction (Peterson et al., 2007). Humour as a coping style focuses on altering the individuals' views about the stressor and then it helps an individual to move away from potentially harmful situations (Keltner & Bonnano, 1997).

Studies, such as those by Abel (2002) and Kuiper (2012) found that humour has a positive effect and that those individuals with high levels of humour are better able to fight the damaging effects of humour if they are compared to those with low levels of humour. Other studies, such as Radman et al. (2011) and Bardi & Guerra (2011), found religion to be a widely used coping style among individuals with non-Western culture. Religious coping style was found to be mostly used in Eastern cultures and the reason given was that these cultures believe there is always that supernatural being who if called upon and is able to solve all human problems (Bardi & Guerra, 2011). In the Yusoff et al. (2011) study which examined Malaysian students, two out of the top three coping strategies were emotion-focused coping namely; turning to religion and positive reinterpretation. Interestingly, the Yusoff et al. (2011) study revealed that the prevalence of distressed first year medical students was 50%. The use of religion as a coping strategy was hardly surprising given the fact that Malaysian society is predominantly Muslim. In the current mixedmethods study, Christianity is the dominant religion in Zimbabwe and it was, therefore, important to examine whether religion was also a preferred coping strategy. On the other hand, the Shakhivel et al. (2017) study confirmed among students who reported moderate or high level stress, religious coping (25%) ranked among the four most used strategies with more girls (30%) resorting to this strategy.

Having examined the use of emotion-focused coping, the following subsection discusses potentially maladaptive emotion-focused coping.

2.7.3 Potentially maladaptive emotion-focused coping

Concerning the potentially maladaptive emotion-focused coping, there are five dimensions of coping; denial, mental disengagement, behavioural disengagement, the use of alcohol and drugs and focus on and venting of emotions. When a person ventilates emotions, they openly

air out feelings at the source of stress (Senderayi, 2021). Denial as a coping style is similar to a defense mechanism evidenced by overlooking the cause and the presence of the stressor and putting up a strong showing as if the stressor does not exist. Mental disengagement as a coping style involves detaching oneself from the source of distress. It involves engaging oneself in alternative psychological activities away from the source of the distress. On the other hand, behavioural disengagement explains the resignation one goes through in the face of distress. Mitchell, Griffin, Stewart and Loba (2004), describe behavioural disengagement in terms of the behaviour of reducing one's effort when dealing with the stressor. Another coping style, though it is maladaptive, is the use of alcohol and drugs. Individuals use alcohol and drugs to get intoxicated to forget the existence of stressors (Chalfont & Bennett, 1999; Rothmann et al., 2011).

Leandro and Castillo (2010) in their study, using a Spanish sample, found that behavioural disengagement and denial were not frequently used as coping styles by their sample. Regarding the issue of gender and potentially maladaptive emotion-focused coping, the Spanish study cited above found that more men used denial coping style more than women. In their cross-sectional survey, Shakthivel et al. (2017) found that among Indian medical students, the use of humour (26%) was the most prevalently used coping strategy used by the males. On the other hand, mental disengagement/self-distraction was the used by 19% of the total student sample.

In a bid to ventilate the role of coping among distressed medical students, Goldman and Bell (2022) researched on potentially maladaptive emotion-focused coping as used by college students. The Goldman and Bell (2022) study found that some students engage in denial and others engage in higher levels of mental disengagement in handling distress. Both are maladaptive coping mechanisms that can expose students to even worse stress. Potentially maladaptive emotion-focused coping strategies are essentially not coping strategies at all, as they allow a problem to lie dormant waiting to show again. In support, Straup, Prothro, Sweatt, Shamji and Jenkins (2022) researched on how college students utilised the potentially maladaptive emotion-focused coping and if it really provided relief to distressed students. They specifically examined the role of avoidant coping during the outbreak of COVID-19 pandemic and they concluded that avoidant coping increased students' distress than decreasing it.

The present study sought to establish if medical students at the two newly established medical schools in Zimbabwe also resorted to potential maladaptive emotion-focused coping to manage distress.

2.8 IMPLICATIONS OF COPING ON DISTRESS

The coping strategies explained in section 2.7 confirm the Lazarus and Folkman (1984)'s Transactional Model of Stress, which guided the current study. Lazarus and Folkman cited in Margaret, Ngigi and Mutisya (2018), identified two cognitive appraisals, which include primary appraisal and secondary appraisal. In primary appraisal, individuals question what they have at stake in a particular threatening situation. In secondary appraisal, individuals question what they can do in response to the perceived threat. It is evident from the literature that while medical students are exposed to the same learning environment, they react differently to different stressors and have varying distress levels. Lazarus and Folkman cited in Dubow, Rubinlicht, Brown, and Prinstein (2011), theorised that coping could be divided based on its function, into problem-focused coping and emotion-focused coping.

As already alluded in this discourse, problem-focused coping includes those strategies that involve acting on the environment (e.g., seeking support from others to solve the problem) or the self (e.g., cognitive restructuring). Emotion-focused coping includes those strategies used to regulate one's stressful emotions (e.g. talking or writing about one's emotions, using and emotional ventilation). Coping efforts are broadly categorised into problem-focused coping (PFC) and emotion-focused coping (EFC) and potentially maladaptive emotion-focused coping (PMEFC) include denial, avoidant coping and using drugs. In light of this, research has shown PFC as more effective in stressful situations while being positively associated with psychological well-being. In contrast, extant literature shows that EFC is associated with depressive symptoms (Akhtar, Herwig & Ahmad, 2019). Successful coping infers the students' ability of being more organised and systematic. Problem-focused coping is more productive and effective besides having a high correlation with psychological well-being. Therefore, the preceding review indicates that EFC strategies are maladaptive in nature and may have unpleasant effects on the health of medical students.

Understanding the implications of coping on distress may help authorities in the medical school to encourage different coping strategies that can be used by medical students. As such, the

recommended coping strategies should be informed by the demographic characteristics of the students to be assisted. For example, Dubow et al. (2011) posited that female students tend to use emotion focused coping strategies if compared to their male counterparts. Males tend to resort to maladaptive coping styles such as drug and substance use, denial or avoidant coping to ameliorate themselves from the effects of distress. Based on demographic information, gender and academic level become key factors in deciding which coping strategy to use as alluded.

Given that extant literature indicated that medical studies are stressful, the current mixed method study sought to explore the coping strategies, which a sample of Zimbabwean medical students used to ameliorate the negative impact of various stressors.

2.9 SUMMARY

This chapter presented the literature under subheadings derived from the objectives of the study. The chapter reviewed literature on academic workload and distress, medical students' exposure to dying patients, deaths and distress, personal life events and distress, financial status and distress, levels of distress and coping with distress. Under the academic workload and distress, the chapter focused on assignments, in-class tests, examinations, semester duration, competition for grades and the nature of the medical curricular. The chapter also discussed how personal life events such as marital separation, pregnancy, gaining of a new family member, change in health status for self or loved ones and death of a loved one in relation to distress. The chapter also ventilated on how the financial status of students can be associated with distress. The chapter further discussed levels of distress focusing on mild, moderate and severe levels. Under coping with distress, the chapter focused on the use of problem focused coping, emotion focused coping and potentially maladaptive emotion-focused coping. The chapter revealed that while extant literature is replete with evidence of the relationship between academic workload, personal life events, financial status and exposure of medical students to dying patients, there is no evidence to suggest that medical students' distress is because of the same factors. The chapter also highlighted some coping strategies that can be used by people in the helping professions to assist clients deal with stress. The next chapter discusses the research methodology used in the current study.

CHAPTER 3: RESEARCH METHODOLOGY

3.1 INTRODUCTION

The present chapter discusses the research methodology adopted in this study. Research methodology refers to the procedures that are used in the collection of data, analysis of data and the interpretation of results or findings. The chapter explores the research philosophy defining this study and discusses research approach, research design, population, sample, instrumentation, data analysis and the ethical considerations. The chapter also gives a justification for the choice of the research methodology.

3.2 RESEARCH PHILOSOPHY

There are five major philosophical underpinnings in research and these are the positivist, critical realism, interpretivist, post-modernism and the pragmatist philosophies. These philosophies are essentially worldviews from which one views research. du Plooy-Cilliers, Davis and Bezuidenhout (2014:289) postulate that:

Although not always required, it is useful to include a brief discussion about the research paradigm or tradition you are following. The reason for this is that if you do not state, for example, your epistemological and ontological positions clearly, a reader from a different tradition may judge your research unfairly by using the criteria from that tradition.

According to Saunders, Lewis, and Thornhill (2019) the world-views derive from the assumptions that are made in terms of the nature of reality, what constitutes acceptable knowledge as well as values the researcher brings to the research process. These assumptions are the ontological assumptions, the methodological assumptions and axiology (researcher's values in research). The worldview underpinning this study is pragmatism. Saunders et al. (2019:169) influenced the choice of this philosophy, arguing, "... pragmatists view the exclusive adoption of one philosophical position as unhelpful and choose instead to see these as either end of a continuum, allowing a choice of whichever position or mixture of positions will help them to undertake their research."

The pragmatist philosophy allowed the researcher to use quantitative methods such as a structured questionnaire to measure medical students' distress levels across the five levels of students from level one to level five. The Pragmatist approach was chosen for its ability to empirically test the quantitative data to get results, while at the same time using qualitative

methods to obtain information regarding the lived experiences of the medical students. The qualitative methods generate information about sources of medical students' distress and interpret information given by students following themes that came out during the course of the study to construct reality (Creswell & Creswell, 2017). In support, Saunders et al. (2019:170) assert that, "For pragmatists, the nature of the research question, the research context and likely research consequences are driving forces determining the most appropriate methodological choice." According to Creswell and Creswell (2017), the pragmatist philosophy holds the view that the truth is that which works. Concurring with this view, Kelemen and Rumen cited in Saunders et al. (2019:143) assert, "Pragmatism strives to reconcile objectivism and subjectivism, facts and values, accurate and rigorous knowledge and different contextualised experiences". Saunders et al. (2019:143) further state that:

For a pragmatist, research starts with a problem, and aims to contribute practical solutions that inform future practice. Pragmatists are more interested in practical outcomes than abstract distinctions; their research may have considerable variation in terms of how 'objectivist' or 'subjectivist' it turns out to be.'

The pragmatist philosophy is not committed to any one system of philosophy or reality. The freedom inherent in this paradigm means the researcher is able to select methods, techniques and procedures of research that best meet his/her needs and purposes. This paradigm was seen as ideal because it recognises that there are many different ways of interpreting the world and undertaking research. It further recognises that no single view can ever give the entire picture and it accepts that in life they may be multiple realities. Thus, this paradigm allowed the researcher to combine both the quantitative and qualitative positions within this single research. Onwuegbuzie influenced the choice of this paradigm also and Leech cited in du Plooy-Cilliers, et al. (2014:79) who assert that:

Pragmatic researchers are more likely to promote collaboration among researchers, regardless of philosophical orientation. By having a positive attitude towards both techniques, pragmatic researchers are in better position to use qualitative research to inform the quantitative portion of research studies and vice versa. Pragmatic research places the emphasis on the process of enquiry itself, that includes multiple ways of observing.

Having discussed the research philosophy informing the current study, the next section discusses the research approach used in this study and how it was seen to be the most appropriate.

3.3 RESEARCH APPROACH

The current study used a mixedmethods approach also known as the abductive research approach (Lipscomb, 2011). A mixedmethods approach to research was chosen in this present study because it allowed the researcher to measure, test and describe quantitative data empirically using statistical procedures, thus, it enhanced the objectivity of the study by gaining an in-depth insight and understanding of sources and levels of distress among medical students derived from the qualitative data. Furthermore, the mixed methods approach was seen as appropriate for the present study because it allowed the researcher to triangulate the results of the study; hence, coming up with the right sources of distress as well as the correct measurements of distress across medical degree grade levels. The triangulation therefore, ensured results which are more accurate and from different vantage points.

According to Wisdom and Creswell (2013), the term mixed methods refers to an emergent methodology research that advances the systematic integration or mixing of quantitative and qualitative data within a single investigation. The core assumption of this approach is that the combination of qualitative and quantitative approaches provides a more complete understanding of a research problem than either approach alone. Mixed methods research is defined as a class of research where the researcher has the liberty to mix or combine quantitative and qualitative research methods, approaches, concepts or language into a unitary study (Johnson & Onwuegbuzie, 2004). Teddlie and Tashakkori (2009:129) aptly define mixed methods research questions as questions “concerned with the unknown aspects of a phenomena and are answered with information that is presented in both narrative and numerical forms.” Mixing therefore, implies that the data or the findings are integrated or corroborated at some or several points in the study depending on the nature of the research questions (Ivankova, Creswell & Clark, 2007). Towards this end, Collins and O’Cathain (2009) postulate that the researcher approaches a mixed methods investigation by initiating and completing a series of steps focused on delineating the *process of mixing* in a study or a programme of research. The following sub-sections discuss the specific aspects of mixed methods that are being mixed in this research. Firstly, the quantitative approach is discussed followed by the qualitative approach.

3.3.1 Quantitative Approach

The quantitative research approach involves the collection of data so that information can be quantified and subjected to statistical treatment in order to support or refute, “Alternate knowledge claims” (Creswell, 2003: 153). Creswell (2002) asserts that quantitative research originated in the Physical Sciences, particularly in Chemistry and Physics. In support, Creswell (2009) posits that this approach is for testing objective theories by examining the relationship between or among variables. Furthermore, this approach uses the deductive logic in which the researcher uses hypotheses and then collects data, which can be used to determine whether there is empirical evidence to support the fact that the hypothesis exists. In explaining the characteristics of the quantitative approach, Saunders et al. (2019:166) state “Quantitative research examines relationships between variables, which are measured numerically and analysed using a range of statistical and graphical techniques. It often incorporates controls to ensure the validity of data, as in an experimental design.” Under this approach, the data collected was tested empirically using statistical procedures.

A mixed methods approach also involves data collection that is typically numeric and the researcher tends to use mathematical models as the methodology of data analysis. Additionally, the researcher used the inquiry methods to ensure alignment with statistical data collection methodology. In the present study, the quantitative research approach sought to establish, confirm and validate relationships and to develop generalisations that contribute to theory on the sources and levels of distress in medical students at two newly established medical schools in Zimbabwe by measuring the distress levels among these students using questionnaires. In quantitative approach, deductive theorising involves reasoning from general assumptions to more specific assumptions (du Plooy-Cilliers, Davis & Bezuidenhout 2014). In the current study, deductive theorising was based on the following general assumptions; academic workload does not contribute to medical students’ distress; there is no relationship between exposures of medical students to dying patients and distress; personal events are not associated with medical students’ distress; there is no link between finance and medical students distress, and there is no significant difference in levels of distress across the five levels of the medical degree programme. These assumptions were used as hypotheses and were tested for their applicability.

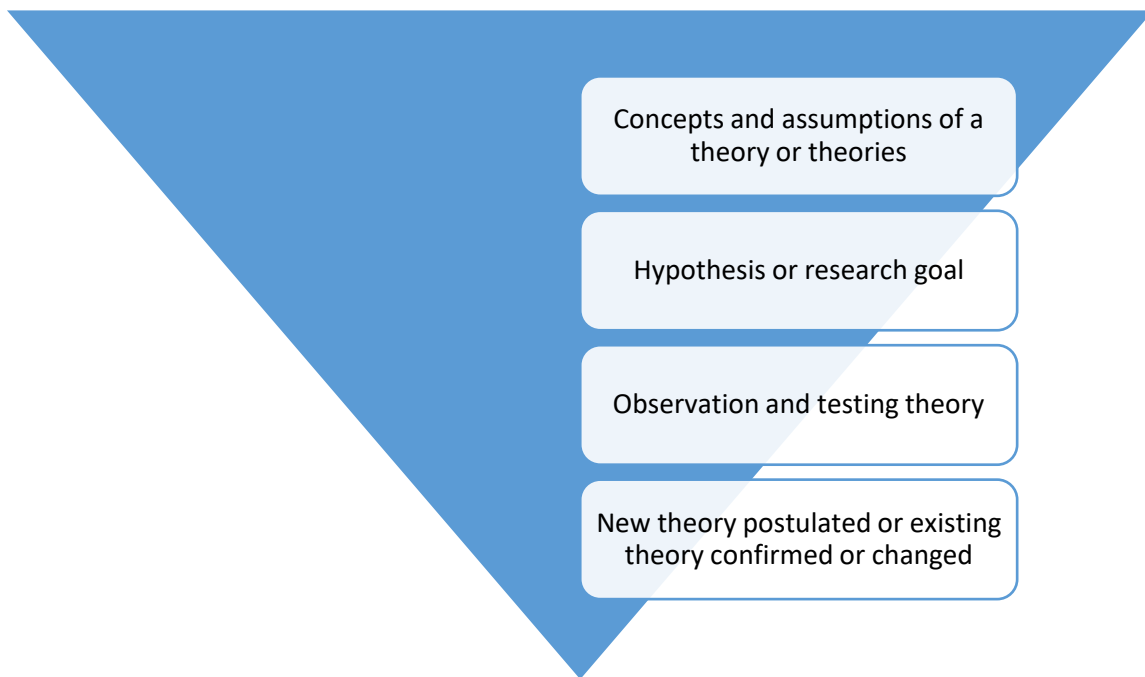


Figure 2: Deductive Reasoning

Adapted from du Plooy-Cilliers, et al. (2014)

Having explained the aspects of the quantitative approach relevant to this mixed methods study, the next sub-section explains those aspects of the qualitative methodology that are relevant to the current study.

3.3.2 Qualitative Approach

The qualitative research approach is a holistic approach that involves discovery. It is described as an unfolding model that occurs in a natural setting that enables the researcher to develop a level of detail from high involvement in the actual experiences (Creswell, 1994). According to Saunders et al. (2019:168), "...the qualitative approach is interpretive because researchers need to make sense of the subjective and socially-constructed meanings expressed about the phenomenon being studied." The qualitative approach is also viewed as an approach to explore and better understand the complexity of a phenomenon by assigning meanings individuals or groups ascribe to a social or human problem (Creswell, 2009). This approach entails merging questions and procedures, data typically collected in the participant's setting, data analysis done inductively, building from particulars to general themes, and the researcher making interpretations of the meaning of the data.

In this study, the information gathered from the medical students through the semi-structured interviews was dealt with using the qualitative approach. In support, du Plooy-Cilliers, et al. (2014:174) state that: “Qualitative researchers often refer to a whole world experience because they are interested in the depth of human experience, including all the personal and subjective peculiarities that are characteristic of individual experiences and meanings associated with a particular phenomenon.” The qualitative approach helped the researcher to understand and hear through the medical students’ mouths what experiences they have pertaining to the sources and levels of their distress. In the qualitative approach, you move from the specific to the general and apply your findings to more abstract and theoretical constructs (du Plooy-Cilliers et al., 2014). In light of this study, the present study was based on du Plooy-Cilliers et al. (2014) in that it started from a specific case of two medical schools, followed by the generation of data derived from the medical students’ interviews and a theory would be built based on the findings derived from the medical students’ responses. The findings from the medical students’ responses were used to confirm the theory.

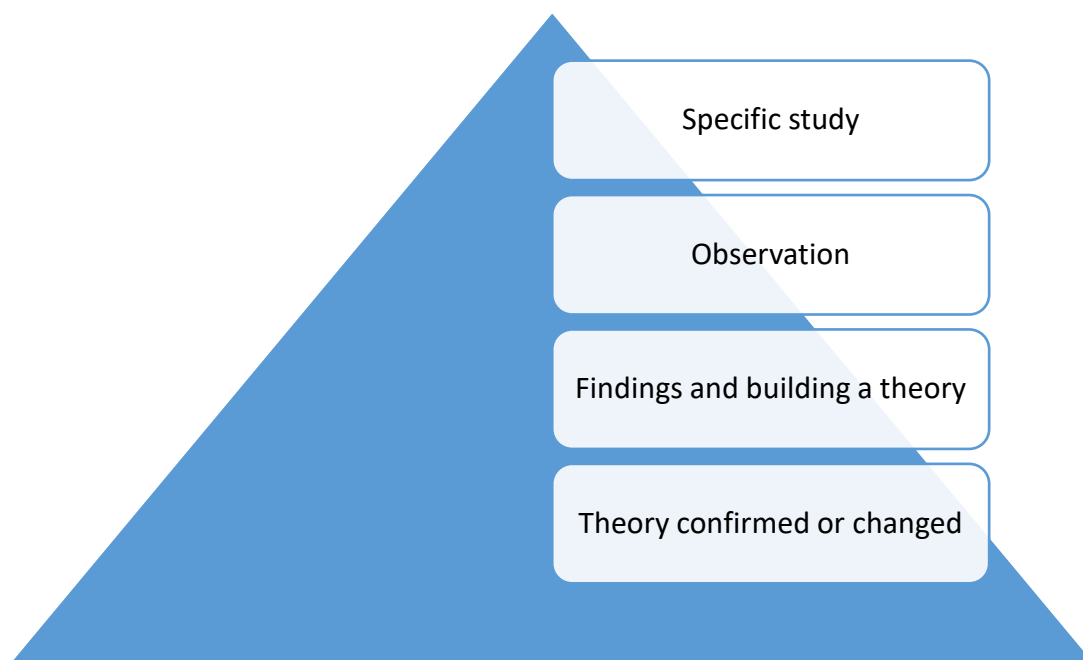


Figure 3: Inductive reasoning

Adapted from du Plooy-Cilliers, et al. (2014)

The research approach adopted in the current study gave birth to the research design, which is discussed hereunder.

3.4 RESEARCH DESIGN

This study adopted a convergent parallel design. According to Saunders et al. (2019:170), convergent parallel design, "... involves the separate use of quantitative and qualitative methods as within a single phase of data collection and analysis." Researchers such as Lane, McGrath, Cleary, Guerandel, Malone (2020), Chang, Lee, Anderson, Lewis, Chakraverty and Yates (2022), Otaki, ALHashmi, Khamis, and Azar (2023) researched on medical students' distress using the convergent parallel design and to a greater extent, encouraged the researcher to adopt the same design in the present study. Other studies that successfully used the convergent parallel design and played a part in the choice of the current design include Metz (2018), Demir and Pismek (2018), and Volpe et al. (2022). Although unrelated to medical students, Boyd (2019) influenced the choice of this design through his study which used the convergent parallel design to identify frequently used coping behaviours and to understand the lived experiences as perceived by high-risk mothers who were hospitalised and prescribed bed rest. The use of the convergent parallel design in this study allowed both sets of results to be interpreted together to provide a richer and a more comprehensive response to the research questions in comparison to the use of mono method. This design is applicable to this study because the researcher was able to develop a complete understanding of the sources and levels of medical students' distress through analysing the survey data quantitatively while at the same time gaining an in-depth understanding of medical students' sources and levels of distress through data obtained qualitatively.

A convergent parallel design was, especially relevant to this study in that it allowed a more accurate picture of what the sources of distress in medical students are through an integration of two strands of data and then merge the two sets of results to assess in what ways the results about medical students' views converge or diverge. This design therefore, entails that the researcher concurrently conducts the quantitative and the qualitative elements in the same phase of the research process, weighs the methods equally (QUAN-QUAL) analyse the two components independently and interprets the results together (Creswell & Plano-Clark, 2011). Further, the convergent design allowed the researcher to overcome a weakness associated with using one method while benefitting from the strength of the other method.

The convergent parallel design employs a concurrent triangulation design. The triangulation design has been described as the use of more than one source of data and method of collection to confirm the validity/credibility/ authenticity of research data, analysis and interpretation.

This design was adopted in the current study, the results obtained quantitatively from medical students about their sources and levels of distress were compared with the qualitative findings of the study generated through interviews. This was done to see if the two sets of results would give a same picture in terms of sources and levels of distress confronting medical students. Through this design, the researcher was able to discern that quantitative results and qualitative findings of the study converged. The diagrammatic presentation of concurrent triangulation is as follows:

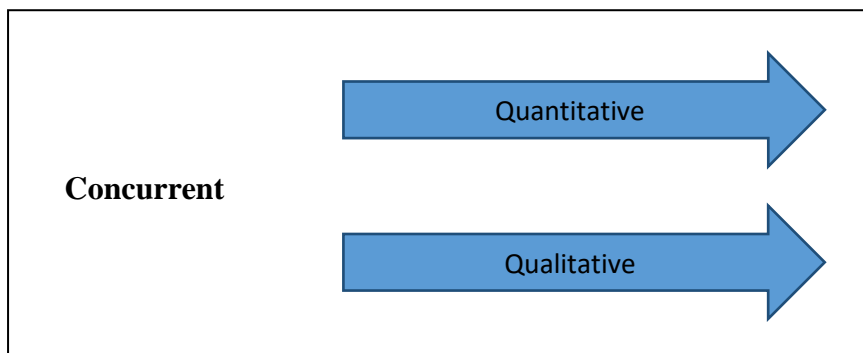


Figure 4: Concurrent parallel design

Adapted from Saunders et al. (2019)

After adopting an appropriate design for the study, the researcher determined the total elements that make the population of the study.

3.5 POPULATION AND SAMPLING

Population and sampling for the present study are discussed under the following sub-sections.

3.5.1 Population

Pascoe (2015:132) defines a population as “the total group of people or entities from whom information is required. In support, Kalat (2016) defines a population as the entire group of individuals considered when conducting a research. To buttress Kalat (2016)’s views, Cooper and Schindler (2014), view population as the total collection of elements in a population such that conclusions that relate to the entire population are drawn. In this study, the population are all the medical students from the two newly established medical schools in Zimbabwe, which are referred to as Medical School A and Medical School B. Medical School A has 125 medical students, while Medical School B has 120 students to give a total population of 245 medical students for the whole study.

From the population drawn, the sample and sampling techniques to be used in the study are explained.

3.5.2 *Sample and sampling techniques*

A sample refers to a section of the population, which embodies the total population under study (Cohen, 2013). Concurring with the above definition, Pascoe (2015:135) says, “A sample is a sub-set of a population that is considered to be representative of the population.” In the present study, all medical students from the first year to the fifth year who were present on the day of data collection were included in the study through a simple random sampling technique. All medical students who were not picked through a simple random selection and those who were absent on the day of data collection were excluded from the study. A sample of medical students was chosen in line with Krecjie and Morgan (1970) sample size table, which suggests that for a population of two hundred and forty, one should have a sample size of one hundred and forty-eight participants. After the distribution of questionnaires, one hundred and twenty-three questionnaires were returned out of a possible one hundred and thirty-four, meaning, twenty-five questionnaires were not returned, leaving a return rate of eighty percent, which is acceptable in research. The other fourteen participants were sampled qualitatively through purposive sampling. This sample was drawn from two distinct strata which were referred to as Medical School A and Medical School B. Medical school A had forty males and thirty-six females, to give a representation of seventy-six medical students. Medical school B had thirty-five males and thirty-seven females, to give a sample representation of seventy-two medical students.

Table 2: Distribution of participants of the sample and its breakdown (n=148)

Medical students	Medical school A	Medical school B	Total
Male	40	35	75
Female	36	37	73
Total	76	72	148

The present study used a stratified sampling technique and the purposive-simple random technique.

3.5.2.1 Stratified Sampling technique.

Since the population was drawn from two different medical schools, the stratified sampling technique was used. Saunders et al. (2019: 290), aver, “Stratified random sampling is a modification of random sampling in which you divide the target population into two or more relevant and significant strata based on one or a number of attributes.” In the current study, each school, therefore, was treated as a stratum; this technique takes the importance of each stratum into account, and weighs it accordingly. It follows that each individual stratum was expressed as a fraction of the total population and then multiplied by the required sample size to get the required number that contributed to the sample by the corresponding stratum. The following formula was used to come up with a representation of participants from each stratum.

$\frac{S}{N} \times n$ Where;

S= Stratum size

N= Population Size

n= Sample size

This study determined the representation as follows:

$$(i) \quad \frac{125}{245} \times 148 = 76$$

Using this formula suggested under stratified sampling technique, Medical School A provided 76 participants as indicated above.

$$(ii) \quad \frac{120}{245} \times 148 = 72$$

Using this formula suggested under stratified sampling technique, Medical School B provided 72 participants as indicated previously. Therefore, the summation of 76 and 72 research participants from Medical School A and B respectively, provides a sample of 148, fulfilling the predetermined sample size of 148 as per Krejcie and Morgan (1970) sample size table.

3.5.2.2 Simple Random Sampling Technique

Having determined the number of participants each school was to provide using the stratified sampling technique; the researcher employed the simple random technique to select specific participants for the study. The simple random sampling also referred to as random sampling

involves the selection of the sample at random from the sampling frame using either a computer or random number tables (Saunders et al. 2019:287). After determining the sample representation, Medical School A provided seventy-six medical students while Medical School B provided seventy-two medical students. Using the stratified sampling technique, the researcher then used simple random sampling to select seventy-six participants from Medical School A, which had one hundred and twenty-five students. The researcher also invoked simple random sampling to select seventy-two participants from medical school B that had one hundred and twenty medical students.

3.5.2.2.1 Demographics of participants

The participants of the current study are shown by demographics, that is to say, they are grouped according to gender, age, marital status, those with children, and according to whether they stay at the medical school premises or are commuting every day from location to school and from school back to location. 57% of the participants were in 18-22-year range, 41% were in the 23-27-year range, 0.8 were in the 28-32-year range and 0.8 were in the 33-50-year range. 57% of the participants were males while 47.2 were females. 17% of the participants were in the first year of the programme, 26% in the second year, 23% in the third year, 15% in the fourth year, and 20% were in the fifth year of the programme. Other demographic characteristics are as indicated in table 3 below. Primarily, capturing of participant characteristics in this study helped to generalise findings regarding a particular characteristic like age group, financial status, gender and marital status of medical students. The inclusion of demographic information in this study also served to check if the demographic variables did not significantly affect the relationship between variables. Thus, any interaction between any demographic variable and any independent variables were noticed and reported. Further, the capturing of the characteristics of the participants in this study also helped to see if the sources of and levels of distress are homogeneous in all sampled medical students. Hammer (2011:261), underscores the importance of capturing demographic information by saying: “Provision of detailed information about participant characteristics allows researchers to move toward a position of universalism,” which recognises that “there may be universal psychological processes that manifest differently depending on the culture, race/ethnicity, and or sex of the participants.”

Having highlighted the importance of demographic characteristics of the participants in the current study, the next sub-unit discusses the instruments that were used in this study. The

validity and reliability of these instruments are also be highlighted to show their relevance to the current study.

3.6 INSTRUMENTATION

The study used two questionnaires and semi-structured interviews to collect data and these are discussed below.

3.6.1 Structured Questionnaires

Two different questionnaires were used in the current study in an effort to reach as many respondents as possible. According to Saunders et al. (2019), a questionnaire is a form prepared and distributed to respondents for them to write their responses on. The questionnaires were personally hand-delivered to medical students by the researcher in both medical schools. The delivery of the questionnaires followed a strict observance of COVID-19 pandemic protocols as prescribed by the Ministry of Health and Child Care and the World Health Organisation standards. The decision to use questionnaires as primary data collection instruments in this study was influenced by Wilkinson and Birmingham (2003:10) who state that questionnaires are the most effective, cheap and efficient way of eliciting views and opinions from a large number of participants in a structured way. In the current study, questionnaires were used to collect data from medical students because they enabled the researcher to collect data from many medical students whose population was dispersed across two medical schools in Zimbabwe. Further, the questionnaires were cheaper to administer. One hundred and thirty-four questionnaires were administered and these comprised seventy questionnaires administered to students in Medical School A, and sixty-four questionnaires administered to students in Medical School B. One hundred and nine questionnaires were returned, and this gave a return rate of 81%. The return rate was acceptable in the present study as it was in line with recommendations by Babbie (2010) who posits that a response rate of between 50%-70% is acceptable in research.

The two questionnaires administered to collect data in the present study were the Revised Students-Life Stress Inventory, and the Dispositional Version of the Coping Inventory. The Revised Students-Life Stress Inventory was used to collect data on the sources and levels of stress among medical students and the Dispositional Version of the Coping Inventory was used

to find out how medical students cope when confronted with negative stress. The two instruments are separately discussed in the following subtopics.

3.6.1.1 Revised Student-Life Stress Inventory (SSI-R)

The Gadzella's (2005) revised Student-life Stress Inventory questionnaire was used to determine the sources and levels of distress in medical students. The scale is a revision of the original Student-Life Scale Inventory (Gadzella, 1991) which is a 51-item Likert type scale. The Revised Student Stress Scale used in the present study has 21 items and the items are each rated from 1-5. In the scale, 1 means the identified stressor does not affect the student at all. The 5 in the scale means the identified stressor affects the student very much. When using this scale, you only list those areas that are rated 3 and above. This instrument sought to measure student distress across two sections; *stressors* and *reaction to stressors*. According to Gadzella (2005), in the stressor section there are five categories; frustration, conflicts, pressures, changes and self-imposed stressors. In the reactions to psychological distress, there are four categories; physiological, emotional, behavioural, and cognitive appraisal. The scoring for the revised student-life stress scale was the summation of the nine categories' (scores) values (Gadzella, Baloglu, Masten & Wang, 2012). The total stress score was, therefore, the summation of the nine categories. To interpret the SSI-R, it is important to note that those who obtain a score within 84-105 indicate having severe stress, those with 63-84 reflect having moderate stress and those who obtain a score of 42-63 reflect having mild stress. The Revised Student Stress Scale was relevant in the present study because of its reliability co-efficient of .789.

3.6.1.2 Dispositional Version of the Coping Inventory

The Coping Inventory is a Likert type scale comprising 60 items. The Coping Inventory scale is used to measure how those exposed to stressful situations generally behave when faced with stress. The scale is widely used in academia. Different people adopt different formats for the scale, as some of the sub-scales may not be relevant to all situations. The scale range is 1-4 where 1 represents the, "I usually do not do this at all," the 2 represents the, "I usually do this a little bit," the 3 represents the, "I usually do a little amount" and the 4 represents the, "I usually do this a lot" (Kaiseler, Nicholls & Madigan, 2019). In simpler terms, at the end, the items of the COPE are added up to come up with scale scores. A low score of 1 on the scale shows what a person does not usually do whereas the highest score shows what a person usually does and hence, it is indicative of a behaviour, which is regular to the individual. The regular

behaviour as reflected on the scale shows a particular coping strategy used by an individual when faced with distressing situations.

The COPE scale was found to be relevant for the current study due to its high internal consistency ($\alpha=.959$). This dovetails with other studies such as those by Carver et al. (1989) and Donoghue (2004) which reported an alpha of .68 and .91 respectively for the situational form of COPE and to be between .45 and .92 for the dispositional part.

The primary focus of the dispositional version of the Coping Inventory is to measure how people confront the challenging and distressing situations in their lives. The instrument acknowledges that people react differently to stressful situations in life; hence, it sought to find out what medical students generally feel when exposed to stressful situations. In using this scale, there were no right or wrong answers since the students were only reporting how they normally respond to stressing circumstances. This coping inventory was chosen for the present study because it dovetails with the theory, which guided this study, that is, Lazarus and Folkman (1984)'s Transactional Model of Stress and Coping. This model as cited by Skinner and Zimmer-Gembeck (2016; 55), theorises that:

...coping is divided based on its function, into problem-focused coping and emotion-focused coping. Problem-focused coping includes those strategies that involve acting on the environment (e.g., seeking support from others to solve the problem) or the self (e.g., cognitive restructuring). Emotion-focused coping includes those strategies used to regulate one's stressful emotions (e.g., using substances, emotional venting).

Therefore, medical students' coping strategies were assessed based on the premise that no two people react similarly to the same stressors as espoused in Lazarus and Folkman (1984)'s Transactional Model of Stress and Coping.

3.6.2 Semi-structured interview

The interviews were conducted face-to-face with medical students with strict adherence to World Health Organisation (WHO) and the Ministry of Health and Child Care protocols on COVID-19 pandemic. Fourteen medical students comprising seven medical students from Medical School A and seven from Medical School B were interviewed. The idea to interview a total of fourteen medical students from both schools was informed by a study carried out by Guest, Bunce and Johnson (2006) which states that if you are generating data using interviews, about twelve participants should be interviewed as data saturates around twelve interviews.

The semi-structured interview was seen as ideal because it is flexible, and it allowed the researcher to have follow-up questions and at the same time, allowing respondents to freely express and share their thoughts on particular issues (Harrell & Bradley, 2009). The interview was divided into four parts, namely: A, B, C and D. Part A talked about the general administration of the interview, Part B talked about the demographic information of medical students, Part C discussed sources and levels of distress among medical students, and Part D discussed how medical students coped with stressors in their learning environment. To guarantee trustworthiness, the researcher used iterative probing where clarifications were made on vague and unclear questions. The probing was done to get meaningful information from the interviewees on the sources and levels of distress affecting them. Trustworthiness is discussed in detail in section 3.10.

3.7 RELIABILITY AND VALIDITY

Reliability and validity were used to address the quantitative approach. Their use was in line with Babbie (2009:146) who avers, “Reliability and validity should be established for the standardisation of an instrument to be used in research.”

3.7.1 Reliability

According to Creswell (2007), reliability it is the extent to which a research instrument is repeatable and consistent. Saunders et al. (2019:202) had this to say about reliability, “... replication and consistency. If a researcher is able to replicate an earlier research design and achieve the same findings, then that research would be seen as being reliable”. In discussing reliability, Saunders et al. (2019) identified four threats to reliability. The first threat is participant error, which refers to any error, which adversely alters the way in which a participant performs. A classic example of participant error as explained by Saunders et al. (2019), is when you ask a participant to complete a questionnaire just before a lunch break may affect the way they respond compared to choosing a less sensitive time. The second threat is participant bias, which refers to any factor, which causes a false response. An example of participant bias is when an interview is conducted in a public place where the participant says out false positive responses because they believe people who have nothing to do with interview are overhearing their response. The third error according to Saunders et al. (2019) is the researcher error, which refers to any factor, which changes the researcher’s interpretation. For example, when a researcher is ill or when he/she is tired, he/she may fail to properly

comprehend some of the responses from the interviewees. The last threat to reliability as posited by Saunders et al. (2019:203) is the researcher bias, which they describe as “any factor which induces bias in the researcher’s recording of responses. For example, a researcher may allow her or his own subjective view or disposition to get in the way of fairly and accurately recording and interpreting participants’ responses.”

To safeguard one’s research from the four threats mentioned above, the researcher ensured that the research process was clearly thought through and evaluated and did not contain leaps and false assumptions (Saunders et al, 2019). To guarantee reliability in the present study, the revised Student Life-Stress Inventory questionnaire and Dispositional Version of the Coping Inventory were pilot tested first on non-participating members of the same population. This allowed for the identification, correction and revision of grey areas. The Revised Student-Life Stress Scale Inventory (SSI-R) had twenty-one items and its Cronbach Alpha was .789, which indicates an acceptable Cronbach Alpha in research, and the Dispositional Version of the Coping Inventory had sixty items and its Cronbach Alpha was .959, which indicates an excellent Cronbach Alpha in research.

Revised Student-Life Stress Inventory (SSI-R)

Reliability Statistics

Cronbach's Alpha	N of Items
.789	21

Dispositional Version of the Coping Inventory

Reliability Statistics

Cronbach's Alpha	N of Items
.959	60

3.7.2 Validity

The validity is indispensable for any research to be credible. It refers to the degree to which a measuring instrument measures what it is supposed to measure. According to du Plooy-Cilliers, Davis and Bezuidenhout (2014:256), “... validity is the extent to which the instrument that was

selected actually reflected reality of the constructs that were being measured.” Saunders et al (2019) explain validity as comprising two distinct forms of measurement. These two forms are identified in this research as internal and external validity. Internal validity is described in research as when a research accurately demonstrates a causal relationship between two variables. Saunders et al. (2019) identified six threats to internal validity as past events, testing, instrumentation, mortality, maturation and the ambiguity about the causal direction. In support, Maxwell (2005) described validity as the correctness or credibility of a description, conclusion, explanation, interpretation or other sort of account. In the current study, the researcher used the item total correlation to test for the validity of the instruments. Corrected Item-Total Correlation indicated that some items which include racial or ethnic discrimination, health of parent, friend or other had values that were not discriminating well ($r < 0.19$) in the student stress revised scale, suggesting poor construct validity for the sources of distress as measured by the Student stress revised scale. These items were removed from further analysis. Corrected Item-Total Correlation indicated that all items of the coping styles sub-scale had good to very good discriminant and convergent validity, all items were related to the construct the least item “I make a plan of action” had a correction of $r = .266 > 0.2$ with the construct, suggesting good validity and hence, these items measured what they purport to measure, that is copying styles.

The test focused on instrument sensitivity and the population characteristics. External validity, which is the second form of measurement, is primarily concerned with whether the research findings can be generalised to other relevant settings or groups. To guard against the threats raised by Saunders et al. (2019), the researcher conducted a pilot study using a non-participating population to check if the Revised Student-Life Stress Inventory and the Dispositional Version of the Coping Inventory were free from the threats raised by Saunders et al. (2019) and that the two instruments actually measured what they intended to measure.

3.7.3 Pilot Study

The pilot study was carried out to serve as a pre-test of the instruments that the researcher used to collect data. The pilot study was done to rectify any anomalies noted and to guarantee reliability and validity of the instruments. In support, du Plooy-Cilliers, Davis and Bezuidenhout (2014:257), argue that, “A pilot study can act as a pre-warning system, because possible errors or difficulties with your measurement instrument will emerge during a pilot study.” In support of this view, Vincenzi, Stock, Borba, Cleary, Oppenheim, Petruzzi, and Henderson (2014) posit that studies that are not pilot-tested usually result in a great effort being exerted on irrelevant or unintelligent, ambiguous questions that produce unquantifiable results.

The researcher pilot-tested the Revised Student-Life Stress Inventory, and the Dispositional Version of the Coping Inventory. For each instrument, a set of 16 questionnaires were distributed to other medical students from both Medical Schools A and B who did not take part in the main study. The essence was to ensure that all medical students understand all the questions in the questionnaire correctly before they responded to get accurate and objective responses. All anomalies such as spelling errors and words with ambiguities were noted and adjusted before the questionnaire was administered to the actual participants. For example, 'ventilation of emotions' was corrected in the Dispositional Version of the Coping Inventory scale to mean 'venting of emotions'. Also, under Section A of all the three instruments where the information was sought on the qualifications of siblings, some highlighted that they had no siblings and the instrument was adjusted to include 'other' for them to tick such a box.

3.7.3.1 The Pilot Study Sample

Table 3 Biographical data of the Pilot study (n=16)

Biographical variable	Category	Number of responses	Frequency Percentage (%)
Gender	Male	08	50
	Female	08	50
Age (years)	18-22	08	50
	23-27	07	47
	28-32	01	7
Marital status	Single and dating	13	87
	Single and not dating	03	20
Institution	Medical school A	08	50
	Medical school B	08	50
Degree level	First year	03	20
	Second year	03	20
	Third year	05	33
	Fourth year	03	20
	Fifth year	02	13
Place of residence	On campus	10	67
	Other	06	40
Area of permanent residence	Rural	02	13
	High density	06	40
	Medium density	04	27
	Low density	04	27
Level of education of parents	O level	06	40
	Diploma	07	47
	Degree	02	13
	Post graduate	01	7
Nature of parents degree	Medicine	01	7
	Social sciences	02	13
Income of parents	1-20000 RTGS	2	13
	21000-40000 RTGS	12	80
	41000-60000 RTGS	02	13
	60000 RTGS-Above	05	33
	Other	02	13
Religion	No response	09	60
	Christianity	16	100

3.8 TRUSTWORTHINESS

Lincoln and Guba (1985) cited in du Plooy-Cilliers, Davis and Bezuidenhout (2014:258), aver, “the overarching term that is used for validity and reliability in qualitative research is

trustworthiness, which is further divided into credibility, transferability, confirmability, and dependability.” Trustworthiness is defined as the believability of the researcher’s findings, that is, all that the researcher has done in designing, carrying out and reporting the research to make the results credible (Morrow, 2005). The trustworthiness aspect hinged on credibility, transferability, confirmability, and dependability, which are explained below.

3.8.1 Credibility

According to Korstjens and Moser (2018), credibility refers to the confidence that is placed in the truth of the research findings. In support, Saunders et al. (2019:206), view credibility as “...a parallel criterion to internal validity which emphasises on ensuring that the representations of the research participants’ socially-constructed realities actually match what the participants intended.” To guarantee credibility in this study, a range of techniques was used. For example, the researcher had a lengthy involvement in this research to build trust and rapport with participants for sufficient data collection. Other strategies that were used to enhance credibility in this research included making sure that the researchers’ pre-conceived expectations about the research were revealed and were not privileged over the social constructions of the participant by regularly recording these and challenging them during analysis of the data in line with Saunders et al. (2019:206).

3.8.2 Transferability

Transferability refers to the degree to which the results of the study are transferrable to other contexts or settings with other respondents (Korstjens & Moser, 2018). In support, Saunders et al. (2019:2016) assert, “This is the parallel criterion to external validity or generalisability. By providing a full description of the research questions, design, context, findings and interpretations, the researcher provided the reader with the opportunity to judge the transferability of the study to another setting in which the reader is interested to research.” By so doing, the researcher ensured that the findings are applicable to other contexts or similar situations, similar populations and similar phenomena by using thick descriptions to show that the research findings are applicable to other situations.

3.8.3 Confirmability

According to Connelly (2016), confirmability of research is the extent to which the findings of the study can be confirmed by other researchers. In support, du Plooy-Cilliers, Davis and Bezuidenhout (2014:259) assert, “Confirmability refers to how well the data collected support

the findings and the interpretation of the researcher.” In the study, the researcher ensured confirmability of the study’s findings by providing an audit trail, which highlights every step of data analysis made to provide a rationale for the decisions made.

3.8.4 Dependability

This is the parallel criterion to reliability. In qualitative researches, the focus is normally adjusted during the course of the research. This refers to the extent that other researchers could repeat the study and that the findings would be consistent (Connelly, 2016). For the current study to be dependable, the researcher captured all the changes that took place during the research to produce a dependable and a reliable account of the new research focus that was understood by others. The researcher also used an enquiry to establish dependability, which required an outside person to review and examine the research process and the data analysis to ensure that findings are consistent and repeatable.

3.9 DATA COLLECTION PROCEDURES

In the current study, the quantitative data were collected through hand-distributed structured questionnaires. The hand-distributed questionnaire, as a way of collecting data, is one of the procedures that have been identified in quantitative data collection. In support, Saunders et al. (2019:440) posit, “The design of a questionnaire differs according to how it is delivered, returned or collected and the amount of contact you have with the respondents.” There is an array of data collection procedures available to the researcher, for example, there are self-completed questionnaires (completed by respondents and are usually referred to as surveys). The self-completed questionnaires comprise Internet questionnaires (those distributed to respondents through the internet), Web questionnaires (these are distributed and respondents assess them through web browsers using a hyperlink), Mobile questionnaire (respondents assess these through their mobile cellphones) and the postal or mail questionnaires (those that are posted to respondents who return them by post after completion) Telephone questionnaires (undertaken through the telephone) and the final category is the face-to-face questionnaire (Interviewers meet the respondents physically and ask the questions on a face-to-face basis), (Saunders et al, 2019).

In the current study, the researcher employed the self-completed questionnaires, which were hand-distributed to one hundred and nine medical students from both Medical Schools A and

B. The questionnaire contained closed questions; which were distributed and received back after three days. This was done to give the respondents time to respond to the questionnaires and this period proved enough for participants to respond and return the questionnaire. The choice of the self-completed questionnaire was influenced by the nature of the questions medical students had to answer and the number of questions they answered.

The qualitative data were generated using semi-structured interviews. According to Saunders et al. (2019:391), “In semi-structured interviews, the researcher has a list of themes and possibly some questions to be covered, although their use may vary from interview to interview.” In the current study, face-to-face interviews were conducted. The interviews were recorded using an audio recorder on all fourteen participating medical students. When following the semi-structured interview guide, the order of questions is not of primary importance. In fact, in the present study, the order of the questions in the semi-structured interviews were varied to allow the free flow of the conversation. The points raised during the interviews were audio-recorded to keep a clear record of what transpired during interviews and for the ease of data analysis.

3.10 DATA ANALYSIS

Data for the present study were analysed both quantitatively and qualitatively as explained in the following subsections.

3.10.1 Analysis of quantitative data

The quantitative data were analysed using a Statistical Package for Social Sciences Version 28.0 (IBM SPSS). According to Rahman and Muktadir (2021), SPSS is a data management and statistical analysis tool which has a very versatile and data processing capability. In the current study, the following tests were used for the statistical analysis, Linear Regression, the t-test, Multiple Linear Regression and One-Way Analysis of Variance. Regression analysis was used as a statistical method to estimate relationships between sources of distress and medical students’ distress. Regression analysis was also used to assess the strengths of the relationships between the variables. A regression table is normally represented by an unstandardised beta (B), but it also used to be denoted by r and is by design constrained as follows as: positive values denote positive linear correlation; negative values denote negative linear correlation; a value of 0 denotes no linear correlation; and, the closer the value is to 1 or -1 , the stronger the linear correlation. The statistical tests were chosen primarily because of their ability to investigate the quantitative, continuous variables like academic workload and

distress, medical students' exposure to dying patients and distress, personal life events and distress and, finances and distress. The other test used in the present study was the t-test. This t-test was used to determine the significance of individual parameter estimates. According to Greenland, Rothman, Carlin, Poole, Goodman, and Altman (2016) and Rahman and Muktadir (2021), a p-value of the T statistic $>.05$ indicates that the predictive variable has no influence on the dependent variable). Using this test, if, for example, the result obtained is greater than Alpha, accept the null hypothesis. If you reject the null hypothesis, then the alternate hypothesis becomes correct. ANOVA as a statistical procedure was used to compare distress levels among medical students across grade levels.

Given that both quantitative and qualitative data are analysed concurrently, the analysis of qualitative data is discussed hereunder.

3.10.2 Analysis of qualitative data

The data obtained through interviews was analysed thematically. The analysis followed a six-step analysis process. The first step in this analysis unfolded first as the researcher was familiarising with the data generated through interviews. The second step the researcher undertook was to assign preliminary codes to the data to describe the content. On the third step of analysis, the researcher looked for patterns or themes within the codes in the interviews. On the fourth step, the researcher reviewed the themes to see if no omissions were made in terms of key information emanating from the interviews. On the fifth step, the researcher defined and named the themes coming out of the interviews before producing a report on the sixth and final step. The six-step method of thematic analysis highlighted above was accurately captured by Kiger and Varpio (2020), who posited that coding can be carried out by choosing segments of text using line numbering in the document or by highlighting the specific quotation to be coded to necessitate listening to all the recorded interviews. According to Kiger and Varpio (2020), recorded responses should be transcribed following the question order in the interview schedule. All the transcribed data were then subjected to an intensive process of coding. Kiger and Varpio further indicate that the idea behind coding is clearly to see and to attend to relevant phenomena in the research environment; collecting relevant examples of these phenomena and analysing these phenomena in order to find commonalities, differences, patterns, and structures. For the foregoing reason, key phrases and terms were highlighted to develop data

categories which were then merged into themes which describe the distress phenomenon under observation.

3.11 ETHICAL ISSUES

It was critical to safeguard the interests and concerns of those who participated in the present study. Saunders et al. (2019:201) aver, “Research ethics are a critical part of formulating your research design.” In the present study, the researcher was bound by the ethical principles supplied by the Great Zimbabwe University, the Ministry of Higher and Tertiary Education, Innovation, Science and Technology Development, Medical Research Council of Zimbabwe, and from the Institutional Review Boards from both Medical School A and B. The following ethical issues were addressed:

3.11.1 Permission

The researcher negotiated entry at the beginning of the enquiry by obtaining letters from; the Department of Research and Postgraduate studies of the Great Zimbabwe University, the Ministry of Higher and Tertiary Education, Innovation, Science and Technology Development, Medical Research Council of Zimbabwe, and from the Institutional Review Boards from both Medical Schools A and B. The letters explained the nature of the research the researcher intended to conduct.

3.11.2 Anonymity

The researcher adhered to the principle of anonymity by making data anonymous. Encouraging participants not to use their names as well as other information, which could help to identify participants, for example; job title, age, gender, length of service and membership of clubs achieved the anonymity of data. Removing participants’ names from the questionnaires was done after realising that the more pieces of information are presented together; the easier it is to identify someone by their name. For the quantitative phase, the questionnaires distributed were coded according to the medical school the respondent was attending. For example, MSA represented Medical School A while MSB represented Medical School B. Numbers were then suffixed after the medical school code to distinguish one participant from the next. For the qualitative phase, all participants were given pseudo names to use during the duration of the study.

3.11.3 Confidentiality

The researcher respected the confidentiality between him and the participants. Confidentiality was upheld through ensuring that all confidential communication such as questionnaire returns

was fully protected and not disclosed except only for academic purposes. All participants used pseudo names to protect their identities and the information they supplied.

3.11.4 Informed consent

The ethical principle of *informed consent* was observed by making sure that participants understood the implications of participating in the present study. The participants were informed about their right to participate; their right to withdraw and their right to terminate all proceedings regarding the present study and all these rights were observed and adhered to. All participants signed the informed consent forms before participating in the present study.

3.11.5 Harm to participants

The researcher ensured that the principle of not harming the participants was observed. Thomas (2009) identifies five potential risks all researchers need to guard against during the research and these are causing psychological or physical harm to participants or others, damaging the standing or reputation of participants or others, infringing the privacy of participants or others, and breaking the law.

3.11.6 Beneficence

Finally, the researcher adhered to the principle of beneficence as indicated below:

- (i) The participants were the first to be informed of the outcome of the research. This enabled them to gain an understanding and enlightenment on the sources and levels of distress in medical students at the newly established medical schools.
- (ii) At an institutional level, the study may help the participants to identify factors in the learning environment that cause distress and burnout and enable them to develop adaptive coping styles in line with the coping model proposed in the current study.
- (iii) The findings of the research shall be communicated to the Ministry of Higher and Tertiary Education, Innovation, Science and Technology Development officials, Vice Chancellors of other Universities in the form of an academic report detailing the key findings and recommendations.

3.12 SUMMARY

This chapter looked at research methodology under the research philosophy, research approach, research design, population and sampling, instrumentation, reliability and validity, trustworthiness and data analysis. The next chapter focuses on the findings of the study.

CHAPTER 4: RESEARCH FINDINGS

4.1 INTRODUCTION

The aim of the study as stated in Chapter 1 was to investigate the sources and levels of distress among medical students at the two newly established medical schools in Zimbabwe. In order to examine this aim, the main research question was framed as follows:

What are the sources and levels of distress among medical students at the two newly established medical schools in Zimbabwe?

This chapter presents both the quantitative and qualitative findings of this study as illuminated by the research sub-questions and research hypotheses.

4.2 BIOGRAPHICAL DATA

This section presents the biographical variables of the respondents. Biographical variables provided the context in which information was gathered. An appreciation of the context would enhance understanding of the information gathered. One hundred and twenty-three medical students drawn from two universities' medical schools were sampled for the study as indicated in Table 4.

Table 4: Biographical data (n=123)

Biographical variable	Biographical description	Frequency	Percentage (%)
Gender	Male	65	52.8
	Female	58	47.2
Age	18-22 years	70	57
	23-27 years	51	41
	28-32 years	01	0.8
	33-50 years	01	0.8
Marital status	Single and dating	66	53.6
	Single and not dating	56	45.5
	Married	1	0.8
Medical school	Medical school A	61	49.5
	Medical school B	62	50.4
Academic year	First year	21	17.0
	Second year	32	26.0
	Third year	28	22.8
	Fourth year	18	14.6
	Fifth year	24	19.5
Residence	On campus	114	92.7
	Other	9	7.3
Area of permanent residence	Rural	42	34.1
	High Density	42	34.1
	Medium Density	29	23.6
	Low Density	10	8.1
Educational qualification of parents	O level	35	28.4
	Diploma	22	17.9
	Degree	12	9.8
	Post Graduate	11	8.9
	Other	43	35.0
Nature of parents' degree	Medicine	9	7.3
	Engineering	1	0.8
	Social Sciences	13	10.6
	Other	86	70.0
	No response	14	11.3
Nature of siblings' degree	Engineering	3	2.4
	Social Sciences	17	13.8
	Other	75	61.0
	No response	28	22.8
Family Income status per month	1-20000	16	13.0
	21000-40000	34	27.6
	41000-60000	10	8.1
	61000 and above	56	45.5
Race	No response	7	5.7
	African	122	99.2
	European	1	0.8
Religion	Asian	0	0
	Christianity	113	91.8
	Muslim	8	6.5
	No response	2	1.6

The next section presents the results for research sub-question one, which focused on how academic workload contributes to medical students' distress.

4.3 RESEARCH SUB-QUESTION 1: TO WHAT EXTENT DOES ACADEMIC WORKLOAD CONTRIBUTE TO MEDICAL STUDENTS' DISTRESS.

The following section presents quantitative findings on the extent to which academic workload contributes to medical students' distress.

4.3.1 Quantitative results on how academic workload contributes to medical students' distress

One Sample t-test was the parametric test statistic employed to establish the extent to which academic workload contributes towards medical students' distress. The test results are shown in Table 5.

Table 5: Academic workload versus medical students' distress

One-Sample Test						
	Mean	Std. Deviation	Mean Difference	T	Df	Sig. (2-tailed)
Academic workload	1.79	1.123	-1.211	-11.261	108	.000

Based on a test value of 3 (somewhat extent) as the test value of the population mean, medical students reported that academic work had less contribution towards medical students' distress (M =1.79, SD = 1.12) than the normal population of students as a whole, $t(108) = -11.26$, $p = 0.00$.

Linear regression analysis was used to test the association between academic workload and distress of medical students{,} andto explain the amount of the variance accounted by academic demands in distress.

Table 6: Linear regression model for academic workload versus distress

Model	Unstandardised Coefficients		Standardised Coefficients	T	Sig	Collinearity Statistics	
	B	Std. Error	Beta			Tolerance	VIF
(Constant)	31.185	2.749		11.346	.000		
	1.943	.638	.284	3.046	.003	1.000	1.000
Regression Equation Statistics							
F			9.280				
P-value of the F-Statistic			.003				
R ²			.081				
R ² adjusted			.072				
a. Dependent Variable: Distress							
b. Predictors: (Constant), Academic workload							

The study hypothesised that academic workload does not contribute to distress in medical students. Table 6 shows a positive relationship between academic workload and medical students' distress. Academic workload explained a significant amount of variance in distress ($F = 9.280$, $p = .069$.003, $R^2 = .081$, $R^2_{\text{adjusted}} = .072$). Table 6 reveals that academic workload explained 7.2% of variability in the distress experienced by medical students. The standardised regression coefficient (Beta = .284) indicated that for every unit increase in academic workload, medical students' distress score increases by .284 points. This shows that as academic demands increase so do distress levels experienced by the medical students.

The following section presents qualitative findings on the extent to which academic workload contributes to medical students' distress.

4.3.2 Qualitative results on how academic workload contributes to medical students' distress

Academic workload was viewed as the most common source of distress among the medical participants in the study. Most participants indicated that academic workload was in the form of the semester length. Some implicated too many assignments while others pointed out that the nature of the medical programme was a clear source of distress as it involves a lot of memorisation of science facts and unfamiliar medical jargon. Further to that, others pointed out that the curriculum changes never involved them, thereby creating some distress on their part. Some indicated that distress emanated from competition for grades amongst students, leaving them with little time to rest as they strive for better marks. The following verbal quotes illustrate the above:

We have too many assignments to write. This means I have to wake up early and dismiss late, which leaves me with little time for family, friends and myself. (Thulani)

The nature of the medical programme demands us to memorise and internalise loads and loads of science facts and new medical words, which are largely unfamiliar. The new terminology causes us to spend the whole day at school reading, leaving us with no time for other activities. (Vumani)

While our medical school has not changed its curriculum yet, we hear many changes are about to be implemented in the curriculum through rumours. We are told very soon medical students would be made to do biomedical sciences before doing MBBS. This causes us worries because we did not do biomedical courses ourselves. It means our curriculum will soon be irrelevant and will be called an old curriculum before we even finish the training. (Sibusisiwe)

Yes, we compete for grades as students and this requires us to do extra reading in order to grasp everything to get distinctive marks and be on course for book prizes at the end of the programme. This means you have to read a lot and sleep very late every day. (Sinanzeni)

The length of the semester is one of the most visible causes of distress. It is rather too long and this leaves us tired and unmotivated at the end of the day. (Mabutho)

The longer semesters we have in medical school take away our social life. We spend enormous time in the library because it is important that we do extensive and wide research in the various courses that we undertake. We need to be up to date with broad based stuff we learn. (Amukela)

The length of the semester is one of the biggest contributors of distress in my course. We spend more time at school than any other programme. We would want a situation where we rest too. (Ntando)

Medical students experienced various academic demands as explained in sections 4.3.1 and 4.3.2 above.

The next section presents the results for research sub-question two, which focused on how exposure to dying patients contribute to medical students' distress.

4.4 RESEARCH SUB-QUESTION 2: HOW DOES EXPOSURE TO DYING

PATIENTS CONTRIBUTE TO MEDICAL STUDENTS' DISTRESS.

The following section presents quantitative findings on how dying patients contribute to medical students' distress.

4.4.1 Quantitative results on how the exposure of medical students to dying patients contributes to Medical Students' distress

Linear regression analysis examined the link between medical students' exposure to dying patients and distress. Table 7 reveals the findings.

Table 7: Linear regression for Medical students' exposure to dying patients versus distress

Model	Unstandardised Coefficients		Standardised Coefficients			Collinearity Statistics	
	B	Std. Error	Beta	T	Sig.	Tolerance	VIF
(Constant)	30.231	3.176		11.135	.000		
Death	0.723	.651	.211	2.234	.022	1.000	1.000
Regression Equation Statistics							
F			23.519				
P-value of the F-Statistic			.000				
R ²			.189				
R ² adjusted			.181				
a. Dependent Variable: distress							
b. Predictors: (Constant), Death							

Linear regression analysis examined the link between medical students' exposure to dying patients and distress. The study hypothesised that there is no relationship between medical students' exposure to dying patients and distress. Table 7 reveals that medical students' exposure to dying patients and distress were positively correlated (Beta = .211). In addition, results on exposure to dying patients and distress explained a significant amount of variance in distress (F = 23.519, p = .000, R² =.189, R²_{adjusted} =.181). Table 7 reveals that 18.1% of variability in the distress experienced by medical students is explained by medical students' exposure to dying patients.

The following section presents qualitative findings on how dying patients contribute to medical students' distress.

4.4.2 Qualitative results on how the exposure of medical students to dying patients contribute to Medical Students' distress

There were varying experiences with regard to how exposure to dying patients contributed to medical students' distress. The experiences ranged from less affected, not affected and extremely affected as indicated in the verbal excerpts below.

Witnessing patients dying in hospital wards is scary and a big contributor to distress. It causes me distress even long after I have left the ward. Seeing a person die is really taxing emotionally. (Mabutho)

Going to the hospital wards and watching patients die is a primary cause for anxiety, distress and depression. You feel as a practitioner that you did not do enough to save the client (Nkanyiso)

I know seeing many dead bodies is not the best sight for me. Seeing a pathologist cut the dead body examining it is nerve wrecking and distressing. (Sabelo)

Witnessing patients dying does not affect me much. I am able to separate events from my emotional reaction.(Dumoluhle)

I have been to the infant wards and my experience with dying infants, sometimes together with their mothers is a major distress for me.(Sithembani)

Most medical students experienced negative emotions on the sight of death in the clinical settings as verbalised above.

The next section presents results for research sub-question three, which focused on how personal life events of medical students are linked to distress.

4.5 RESEARCH SUB-QUESTION 3: HOW ARE MEDICAL STUDENTS' PERSONAL LIFE EVENTS LINKED WITH DISTRESS.

The following section presents quantitative findings on how personal life events of medical students are associated with distress.

4.5.1 Quantitative results on how medical students' personal life events link with distress

The researcher employed linear regression to establish the association between personal life events and medical student distress, and explain the amount of the variance in distress. Table 8 shows the findings.

Table 8: Linear regression model for personal life events and medical student distress

ANOVA ^a						
Model		Sum of Squares	Df	Mean Square	F	Sig.
1	Regression	1.005	1	1.005	4.876	.033 ^b
	Residual	8.654	42	.206		
	Total	9.659	43			

a. Dependent Variable: Distress

b. Predictors: (Constant), personal life events

Coefficients ^a								
Model		Unstandardised Coefficients		Standardised Coefficients	t	Sig.	95.0% Confidence Interval for B	
		B	Std. Error	Beta			Lower Bound	Upper Bound
1	(Constant)	1.795	.292		6.156	.000	1.206	2.383
	Personal life events	.259	.117	.323	2.208	.033	.022	.495

a. Dependent Variable: Distress

b. Predictor: Constant (Personal life events)

The study hypothesised that personal events are not associated with medical students' distress. Table 8 reveals that there is a significant positive association between students' exposure to student personal life events and distress. Personal life events had a significant positive association with distress and explained significant amount of variance in distress ($F = 5.545$, $p = .020$, $R^2 = .050$, $R^2_{\text{adjusted}} = .045$). Table 8 shows that 4.5% of variability in distress of medical students is a result of personal life events experienced by medical students. The regression coefficient (Beta = .323, $p = .20 < .05$) suggested that the unit increase in life events of medical students results in an increase in medical students' distress by .223 points.

The following section presents qualitative findings on how personal life events of medical students are associated with distress.

4.5.2 Qualitative results on how medical students' personal life events link with distress

The majority of the medical students indicated that personal life problems such as losing a loved one constituted another source of distress. Some students indicated that they experienced adjustment problems owing to losing loved ones such as a sibling, parent or guardian, while a

few others mentioned that they had not experienced such life problems. The following verbal quotes illustrate the above:

Losing a loved one is a big problem because it can wear a person down because they take long to accept the fact that someone is gone and is not coming back. This can cause a fall in academic performance; sometimes-suicidal thoughts can arise. (Sithabile)

Losing a loved one is a great setback as it brings sadness, anxiety and worry and this affects reading.(Amukela)

Fortunately, for me, I have so far not lost any close member of my family. I have seen how distressing it is to my friends who have gone through that sad chapter in lives while at the medical school. (Nkanyiso)

While I have heard and seen fellow students showing signs of distress after losing loved ones, I am yet to experience such since I commenced my programme.(Sibusisiwe)

Some medical students cited adjustment problems as a major stressor.

The next section presents the results for research sub-question four, which focused on the relationship between finance and medical students' distress.

4.6 RESEARCH SUB-QUESTION 4: WHAT IS THE RELATIONSHIP BETWEEN FINANCIAL STATUS AND MEDICAL STUDENTS' DISTRESS?

The following section presents quantitative findings on the relationship between finance and medical students' distress.

4.6.1 Quantitative results on the relationship between financial status and medical students' distress

One- sample t-test was employed to measure the extent to which lack of financial resources contributes to distress of medical students. The findings are presented in Tables 9 and 10. Linear regression was used to test the extent to which lack of financial resources predicted distress experienced by medical students, and explain the amount of variance attributed to lack of financial resources in this regard.

Table 9: Lack of financial resources versus distress of medical students

Test Value = 3					
	Mean	Std. Deviation	T	Sig. (2-tailed)	Mean Difference
Financial	4.2890	.77068	16.405	.000	1.21101

Based on a test value of 3 (somewhat extent) as the test value of the population, medical students reported that lack of financial resources contributes to higher levels of distress ($M = 4.29$, $SD = .77$, $t = 16.41$, $p = .000$) than the normal population of students as a whole. These findings reveal that lack of financial resources is one of the major sources of distress that mainly affects medical students.

Table 10: Linear regression model for financial status versus distress of medical students

Model	Unstandardised Coefficients		Standardised Coefficients	T	Sig.	Collinearity Statistics	
	B	Std. Error	Beta			Tolerance	VIF
(Constant)	34.775	2.284		15.223	.000		
Not enough money	2.419	1.170	.197	2.068	.041	1.000	1.000
Regression Equation Statistics							
F			4.278				
P-value of the F-Statistic			.041				
R ²			.039				
R ² adjusted			.030				
a. Dependent Variable: Distress							

The study hypothesised that there is no link between financial resources and medical students' distress. Table 10 reveals a positive relationship between financial resources and medical students' distress. Lack of financial resources explained a significant amount of variance in distress ($F = 4.278$, $p = .001$, $R^2 = .039$, $R^2_{\text{adjusted}} = .030$). Table 10 reveals that 3% of total variability in the distress of medical students is explained by lack of financial resources. The regression coefficient ($Beta = .197$, $p = .041 < .05$) indicated that if the financial position of the students worsens by unit, on average, it may cause an increase in distress by .314 points.

The following section presents qualitative findings on the relationship between finance and medical students' distress.

4.6.2 Qualitative results on the relationship between financial status and medical students' distress

Most medical students verbalised that they had distress emanating from financial issues relating to the purchase of stationery, travelling costs and buying data bundles for research activities. Their responses are as indicated in the following verbal excerpts.

Yes, my view is that financial situation at school can contribute to distress because there are many things to be bought at school. You talk of printing, money for lunch and other things. They all bring distress if money is not enough. (Sithembani)

Travelling to college from home every day places a huge financial strain on me in addition to the cost of fees, which are normally difficult to raise. (Sabelo)

The course demands a lot of finance for stationary like bond paper and printing out assignments as well as data bundles for internet connection when doing research. (Dumisani)

As can be gleaned from responses, some medical students implicated financial status as the cause of their distress.

The next section presents the results for research sub-question five, which focused on the comparing distress levels of medical students across the five levels of the medical degree programme.

4.7 RESEARCH SUB-QUESTION 5: HOW ARE LEVELS OF DISTRESS ACROSS THE FIVE LEVELS OF THE MEDICAL DEGREE PROGRAMME?

The following section presents quantitative findings on the levels of distress across the five levels of the medical degree programme.

4.7.1 Quantitative results on the levels of distress across the five levels of the medical degree programme.

To determine the levels of distress among medical students across the five levels of the medical degree programme, One-Way ANOVA (Analysis of variance) was employed, and the summary results are shown in Table 11.

Table 11: Levels of distress among medical students across the five levels of the medical degree programme

(I) 5. Degree level	(J) 5. Degree level	Mean Difference (I-J)	Std. Error	Sig.
First year	Second year	4.74074*	.59622	.000
	Third year	7.89744*	.60079	.000
	Fourth year	10.60417*	.67322	.000
	Fifth year	13.43939*	.62273	.000
Second year	First year	-4.74074*	.59622	.000
	Third year	3.15670*	.53838	.000
	Fourth year	5.86343*	.61817	.000
	Fifth year	8.69865*	.56276	.000
Third year	First year	-7.89744*	.60079	.000
	Second year	-3.15670*	.53838	.000
	Fourth year	2.70673*	.62258	.000
	Fifth year	5.54196*	.56759	.000
Fourth year	First year	-10.60417*	.67322	.000
	Second year	-5.86343*	.61817	.000
	Third year	-2.70673*	.62258	.000
	Fifth year	2.83523*	.64378	.000
Fifth year	First year	-13.43939*	.62273	.000
	Second year	-8.69865*	.56276	.000
	Third year	-5.54196*	.56759	.000
	Fourth year	-2.83523*	.64378	.000

Summary Statistics

F	139.952
P-value of the F-Statistic	.000

Dependent Variable: Distress

*. The mean difference is significant at the 0.05 level.

The study hypothesised that there is no significant difference in levels of distress across the five levels of the medical degree programme. Table 11 indicates that there is a negative relationship between medical degree level and distress. The mean difference (I-J) for first year (I) compared to (J) other academic years are all positive; second year (I-J = 4.74, $p < 0.01$), third year (I-J = 7.90, $p < .01$), fourth (I-J = 10.60, $p < .01$) and fifth (I-J = 13.439, $p < .01$) gets larger as academic year increases; suggesting significant decline in distress as students' progress from *one* academic year to another. Results indicate significant variations in distress among the different educational levels of students at the $p < .05$ level for the five conditions ($F = 139.95$, $p = .000$). Post hoc analysis, using Turkey's test suggests a decrease in distress as the academic year increases.

The next section presents the results for research sub-question six, which focused on coping strategies used by medical students at the two medical schools.

4.8 RESEARCH SUB-QUESTION 6: WHAT COPING STRATEGIES DO MEDICAL STUDENTS USE TO COPE WITH DISTRESS?

The study sought to determine the various coping strategies employed by medical students to cope with distress. The coping strategies were segmented into three dimensions: problem-focused coping, emotion-focused coping, and potential maladaptive emotion-focused coping. The following section presents quantitative findings on the problem-focused coping strategies used by medical students to cope with distress.

4.8.1 Quantitative results on the problem-focused coping strategies used by medical students to cope with distress

Under this dimension, the study sought to establish the link between stressors (frustration, conflicts, pressures, changes and self-imposed stressors) with problem-focused coping constructs; active coping, suppressing competing activities, restraint coping restraint, social support for instrumental reasons and planning. Table 12 presents the results.

Table 12: Multiple linear regression model for problem focused coping

Model		Unstandardise d Coefficients		Standardise d Coefficients		T	Sig.	R ²	Adjuste d R ²
		B	Std. Error	Beta	F				
Planning	(Constant)	9.09	0.96		11.96	.000 ^b	9.52	0.00	0.367 0.337
	Frustration	-0.83	0.18	-0.50			-4.61	0.00	
	Conflict	-0.17	0.14	-0.14			-1.18	0.24	
	Self-imposed distress	0.20	0.17	0.15			1.23	0.22	
	Pressures	0.22	0.17	0.14			1.28	0.21	
	Changes	0.82	0.27	0.35			3.08	0.00	
	(Constant)	9.64	1.03		17.49	.000 ^b	9.34	0.00	
Social support		-1.10	0.20	-0.57			-5.64	0.00	0.459 0.433
	Conflict	-0.21	0.15	-0.14			-1.34	0.18	
	Self-imposed distress	-0.21	0.18	-0.13			-1.16	0.25	
	Pressures	0.22	0.19	0.12			1.16	0.25	
	Changes	1.39	0.29	0.52			4.86	0.00	
Restraint	Constant	4.36	1.28		2.20	0.07	3.40	0.00	0.339 0.307
	Frustration	0.38	0.24	0.20			1.56	0.12	
	Conflict	0.00	0.19	0.00			0.02	0.99	
	Self-imposed distress	-0.42	0.22	-0.27			-1.88	0.06	
	Pressures	-0.02	0.23	-0.01			-0.10	0.92	
Suppression	Changes	0.88	0.36	0.34			2.46	0.02	0.339 0.307
	(Constant)	7.09	0.89		10.56	.000 ^b	7.94	0.00	
	Frustration	-0.73	0.17	-0.48			-4.32	0.00	
	Conflict	0.02	0.13	0.01			0.11	0.91	
	Self-imposed distress	-0.21	0.16	-0.17			-1.39	0.17	
	Pressures	0.27	0.16	0.19			1.67	0.10	
	Changes	1.14	0.25	0.54			4.57	0.00	
Active coping	(Constant)	5.60	0.85		13.78	.000 ^b	6.60	0.00	0.401 0.372
	Frustration	-0.35	0.16	-0.24			-2.21	0.03	
	Conflict	-0.11	0.13	-0.10			-0.89	0.38	
	Self-imposed distress	0.43	0.15	0.33			2.91	0.00	
	Pressures	-0.17	0.16	-0.12			-1.08	0.28	
	Changes	0.83	0.24	0.39			3.52	0.00	

The study hypothesised that there is no relationship between distress and coping. Table 12 reveals the link between stressors; frustration, conflicts, pressures, changes and self-imposed stressors with problem-focused coping constructs; active coping, suppressing competing distress such as frustration, conflicts, pressures, changes and self-imposed were found to have a significant link with problem-focused coping, $p < .05$. Increased planning was found to significantly reduce frustration among the medical students (Beta = -0.50 , $p = .000$), and enhanced changes (Beta = $.35$, $p = .000$). Social support for instrumental reasons increased changes (Beta = $.52$, $p = .000 < .01$). Suppression as a problem-focused copying strategy decreased students' frustration (Beta = $-.48$, $p = .000 < .05$) and increased changes (Beta = $.54$, $p = .000 < .01$). Active coping also significantly reduced student frustration (Beta = -0.24 , $p = .000 < .01$), but increased self-imposed distress (Beta = $.33$, $p = .000 < .01$) and changes (Beta = $.39$, $p = .000 < .01$).

The following section presents qualitative findings on the problem-focused coping strategies used by medical students to cope with distress.

4.8.2 Qualitative results on the problem-focused coping strategies used by medical students to cope with distress

Of the five coping strategies suggested by Carver (2013) under the problem-focused coping category, most medical students verbalised that they used the seeking social support for instrumental reasons, suppressing competing activities, and restraint coping to deal with distress as indicated in the following subsections.

4.8.2.1 Seeking social support for instrumental reasons

Medical students indicated that they resorted to peers, colleagues, older and wiser and their lecturers for social support as indicated in the following excerpts.

My peers support me by encouraging me, for example, we do study groups where we discuss and study together, correct each other, give each other study resources and new information. Moreover, I am encouraged to study more when my peers know a lot of stuff and this pushes me to study harder. (Mabutho)

Before I act, I usually ask for advice, especially concerning other people's feelings. When I have a misunderstanding with someone, I first consult a trusted colleague. The last incident where I had a misunderstanding, I consulted a friend and she was able to make me calm down and gave me the right choice of words to say to the individual I was in a conflict with. (Amukela)

I ask for help and advice from people who are older and wiser so that they guide me in my schoolwork. Acting alone in the face of distress has landed me in more problems and as such, seeking advice before acting has proved to be beneficial. (Dumoluhle)

My peers support me in a variety of ways; they support me during group discussions, during difficult courses. I seek advice, assistance, or information from colleagues or friends, especially when I am not sure about what to do due to a complicated and a stressful situation. (Nomathemba)

I get along with my colleagues; they are a source of support during times when I am distressed. My lecturers and I have a working relationship only. They support me to deal with academic related problems. (Ntando)

4.8.2.2 Suppressing competing activities

Medical students indicated that they resorted to using social media such as Facebook, and taking walks to suppress competing activities as indicated in the following excerpts.

I turn to Facebook and other social media activities to take things off my mind when I am distressed. Personally, social media diverts my attention because I find it interesting and I learn new and interesting facts but I normally do not turn to my schoolwork when I am stressed. (Mabutho)

In stressful situations, I normally leave my schoolwork and take a walk for about 10-15 minutes to try to distress if it is during the day. If it is at night, I will chat with friends on Facebook and ignore books until my mind is settled again. (Nomathemba)

I normally turn to walking or talking to my girlfriend and listening to music as part of coping strategy to deal with my distress. (Dumisani)

4.8.2.3 Restraint coping

Medical students indicated that they resorted to inter-alia, sleeping, and postponing dealing with the source of distress until an opportune time arises. The following verbalisations illustrate the above.

I try to circumvent distress by sleeping. Sleeping has been working for me for years now. I sometimes cry in my blankets. Sleeping has been useful to me since I sometimes sleep for extended hours; not knowing what is happening to me when I am asleep tends to be a pill I need sometimes. (Sabelo)

When stressed I hold myself and wait until an appropriate opportunity to act. I have found that if I do not restrain myself from acting I end up having more stress and then suffer even more from its effects. (Ntando)

Sometimes I avoid stressful situations like when I am being stressed by a difficult assignment, I postpone doing it until such a time when I have asked my colleagues and only attempt it when I have gotten enough information to tackle it. (Vumani)

As can be seen, most medical students suppressed competing needs to deal with distress. The following section presents quantitative findings on the emotion-focused coping strategies used by medical students to cope with distress.

4.8.3 Quantitative results on the emotion-focused coping strategies used by medical students to cope with distress

Under this dimension, the study sought to establish the link between stressors (frustration, conflicts, pressures, changes and self-imposed stressors) with emotion-focused coping constructs; positive re-interpretation, seeking emotional support, religious coping, acceptance, and humor. Table 13 presents the results.

Table 13: Multiple linear regression model for emotion focused coping.

Model		Unstandardised Coefficients		Standardised Coefficients	F	Sig.	T	Sig.	R ²	Adjusted R ²
		B	Std. Error	Beta						
Positive-reinterpretation	(Constant)	8.615	1.139		11.53	.000 ^b	7.564	.000	.424 _a	.180
	Frustration	-.648	.215	-.332						
	Conflict	-.463	.168	-.320						
	Self-imposed stress	-.020	.197	-.012						
	Pressures	.354	.208	.190						
	Changes	1.298	.317	.473						
	(Constant)	4.623	1.015							
Frustration	.118	.192	.077							
Conflict	.336	.150	.294							
Self-imposed stress	-.146	.176	-.112							
Pressures	.124	.185	.084							
Changes	.248	.282	.115							
Constant	5.681	1.126		2.06	0.07	5.046	.000	.197	-.012	
Frustration	.236	.213	.145							
Conflict	-.204	.166	-.170							
Self-imposed stress	-.083	.195	-.060							
Pressures	.012	.205	.008							
Changes	.726	.313	.319							
Emotional support										
Religious										

Table 13 indicates that positive re-interpretation and growth decreased students' frustration (Beta = -3.01, $p = .003 < .01$) and conflicts (Beta = -320, $p = .007 < .01$), while it enhanced changes (Beta = 473, $p = .000 < .01$). Seeking emotional social support increased students' conflicts (Beta = .294, $p = .027 < .05$), while religious coping decreased changes (Beta = .319, $p = .022 < .05$). Acceptance was found to reduce students' conflicts (Beta = -0.254, $p = .045 < .05$) and to increase changes (Beta = .479, $p = .000 < .01$). Humour as an emotion-focused coping strategy was found to reduce student frustration (Beta = -0.315, $p = .000 < .01$) and conflict (Beta = -0.440, $p = .000 < p = .01$).

The following section presents qualitative findings on the emotion-focused coping strategies used by medical students to cope with distress.

4.8.4 Qualitative results on the emotion-focused coping strategies used by medical students to cope with distress

Of the five coping strategies suggested by Carver (2013) under the emotion-focused coping category, most medical students verbalised that they used the seeking emotional support coping strategy, religious coping, and humor to deal with distress as indicated in the following sub-sections.

4.8.4.1 Seeking emotional support

Most medical students indicated that when faced with distress, they sought emotional support from colleagues, peers and lecturers as illustrated in the following verbal statements.

I absolutely seek the help of other students. No man is an island, we need each other all the time. I believe colleagues and friends are there to make life less difficult, hence, I share with them when under distressing circumstances. (Nkanyiso)

I seek moral support from peers. They are a good support system. Lecturers are different, some understand and are sweet while others are tough and I can always seek sympathy from the good ones. (Dumoluhle)

I personally do not seek advice or support from colleagues or my lecturers because I am a very shy person. I only do so when in clubs or groups. (Sibusisiwe)

4.8.4.2 Religious coping

Most medical students indicated that they resorted to reading the Bible, praying, and singing hymns when faced with distress. The following excerpts illustrate the above.

Religion minimises my distress levels by keeping hopeful about sad situations. The Bible gives me faith and hope that everything will be fine in life. The Bible gives me words of wisdom and comfort. By praying, I am able to cast my worries upon the feet of Jesus because I know he cares for me and he listens to my prayers. (Nkanyiso)

For me, religion gives me comfort and hope during difficult situations. I pray and sing hymns just to take away distress from myself. (Vumani).

Religion minimises distress levels in the sense that I tend to rest and forget everything on Sabbath because I am a Seventh day Adventist (SDA). I also cast my burdens on Christ and he gives me rest. (Mabutho)

In other instances, I feel dejected, hopeless, and helpless. Once I have this feeling of helplessness, I leave it to God because they would be multiple problems seeking solutions at the same time. (Dumisani).

Resorting to religion empowers me a lot during distressful situations. I pray a lot about my situation and I tend to feel relieved after meditating and praying about my situation. In stressful situations I like praying and mediating unto God so that I find comfort in his promise when he says, "Come to me all you who are weary, I will give you rest." (Sabelo)

4.8.4.3 Acceptance

Most medical students indicated that when faced with distress, they resigned themselves to and accepted distressing situation as illustrated in the following verbal statements.

I mostly accept that stress is part of life, especially if I have tried all possible ways of avoiding it. I realised that accepting it to be part of life lessens my worries as I keep reminding myself that I have faced worst days in the past and still managed to go through. (Dumoluhle)

When confronted with stressors I find myself accepting that life has its difficulties psychologically and emotionally so I tend to accept my situations for me to manage my distress. (Ntando)

Over the years, I have realised that if you come face to face with stressors, it is far much better to accept your distress so that you feel some relief. (Nomathemba).

4.8.4.4 Humour

Most medical students indicated that when faced with distress, they resort to laughing and joking about the source of the distress. The following excerpts illustrate the above.

Laughing or joking does it for me, although this lasts for a short time. If I laugh or joke, I feel better. Therefore, to me the best medicine is to laugh or joke about your distressful situations. (Mabutho)

Yes, joking and laughing does it for me as in deep jokes, I forget about some negative things life throws at me. (Dumisani)

For the greater part of my life, I have found that happiness emotions brought about by laughter and joking have a curing effect when it comes to my distress. Each time I laugh or joke, I feel better. (Sibusisiwe)

As can be seen, most students used humour to ameliorate their distress. The following section presents quantitative findings on the potentially maladaptive emotion-focused coping strategies used by medical students to cope with distress.

4.8.5 Quantitative results on the potentially maladaptive emotion-focused coping strategies used by medical students to cope with distress

Under this dimension, the study sought to establish the link between stressors (frustration, conflicts, pressures, changes and self-imposed stressors) with potentially maladaptive emotion-focused coping constructs; venting emotions, denial, and alcohol and drug use, mental disengagement, and behavioural disengagement. Table 14 presents the results.

Table 14: Multiple linear regression model for potential maladaptive emotion focused coping

Model		Unstandardised Coefficients		Standardised Coefficients	F	Sig	T	Sig.	R ²	Adjusted R ²
		B	Std. Error	Beta						
Venting emotions	(Constant)	7.231	1.020		3.15	.011 ^b	7.089	.000	.133	.091
	Frustration	-.423	.193	-.282			-2.199	.030		
	Conflict	-.029	.151	-.026			-.195	.845		
	Self-imposed stress	.034	.177	.026			.191	.849		
	Pressures	.517	.186	.360			2.780	.006		
	Changes	.269	.284	.127			.948	.345		
Denial	(Constant)	6.813	1.135		1.22	.308 ^b	6.001	.000	.058	.010
	Frustration	.183	.220	.115			.833	.407		
	Conflict	.092	.179	.079			.515	.607		
	Self-imposed stress	-.031	.198	-.023			-.154	.878		
	Pressures	.137	.224	.088			.612	.542		
	Changes	.027	.315	.012			.087	.931		
Mental disengagement	Constant	7.353	.914				8.046	.000	.215	.177
	Frustration	-.738	.173	-.521	5.65	0.000	-4.278	.000		
	Conflict	.418	.135	.398			3.098	.003		
	Self-imposed stress	.360	.158	.299			2.275	.025		
	Pressures	.060	.167	.045			.362	.718		
	Changes	.077	.254	.039			.303	.762		
Behavioural disengagement	(Constant)	4.249	.985				4.314	.000	.154	.113
	Frustration	.516	.186	.351	3.76	.004 ^b	2.776	.007		
	Conflict	.001	.145	.001			.009	.993		
	Self-imposed stress	-.292	.171	-.234			-1.711	.090		
	Pressures	-.198	.180	-.141			-1.100	.274		
	Changes	.788	.274	.382			2.877	.005		
Alcohol and drug use	(Constant)	7.345	1.361		15	.000 ^b	5.397	.000	.117	.074
	Frustration	.235	.257	.118			.915	.362		
	Conflict	.157	.201	.107			.782	.436		
	Self-imposed stress	-.001	.236	-.001			-.004	.997		
	Pressures	.370	.248	.195			1.490	.139		
	Changes	-.564	.379	-.202			-1.490	.139		

The study hypothesised that there is no relationship between distress and coping strategies. Table 14 reveals that venting emotions was found to significantly reduce student frustration (Beta = $-.282$, $p = .030 < .05$), and increase student pressure (Beta = $.360$, $p = .006 < .01$), while denial was not linked to distress of medical students, $p > .05$. Increased mental disengagement was found to reduce student frustration (Beta = $-.521$, $p = .000 < .01$), but increased conflict (Beta = $.398$, $p = .003 < .01$) and self-imposed stress (Beta = $.299$, $p = .025 < .05$). Behavioural disengagement was found to increase frustration (Beta = $.351$, $p = .007 < .01$) and increase changes (Beta = $.382$, $p = .005 < .01$). Use of alcohol and drugs was found not to have any significant impact on medical student distress as a coping strategy, $p > .05$.

The following section presents qualitative findings on the potentially maladaptive emotion-focused coping strategies used by medical students to cope with distress.

4.8.6 Qualitative results on the potentially maladaptive emotion-focused coping strategies used by medical students to cope with distress

Of the five coping strategies suggested by Carver (2013) under the potentially maladaptive emotion-focused coping category, most medical students verbalised that they used venting of emotions, denial, and alcohol and drug use. The following sub-sections illustrate the above.

4.8.6.1 Venting emotions

Medical students indicated that they vent emotions by shouting at the stressor, bursting at, or telling off the person causing the distress. The following verbal statements indicate the following.

I normally feel better after shouting at the stressor. I find venting my emotions relieving and soothing when I express my emotions. I feel better unlike when I bottle my feeling. When I express my feelings, I do not find myself yelling at other people for no absolute reason. (Silokuthaba)

I tell off the person causing the distress. I find expressing my feelings quite helpful, especially if the person is persistent. (Amukela)

I normally burst if I am cornered. This creates a sense triumph on my part, although sometimes it is for a short time. (Dumoluhle)

4.8.6.2 Denial

Medical students indicated that they used denial strategies such as refusing to accept reality or refusing to believe that distress is real. The following verbal statements indicate the above.

I sometimes find myself in a state of denial. I sometimes refuse to believe reality and it has turned me into a bad person because I become defensive and people are now afraid to talk to me. (Thulani)

Yes, sometimes I have found myself acting as if distress is not real because distress is part of the lifestyle in the medical school so I just treat it normal. (Sabelo)

Many times, I find myself refusing to believe stressors are real. The reason for me to deny the existence of stressor is that it seems every day created by God has its own fair share of stressor. So, to enjoy my life I forget about stressors. (Mabutho)

4.8.6.3 Alcohol and drug use

Medical students indicated that they used alcohol and drugs to ameliorate the negative impact of distress. The following verbal statements indicate the above.

I do find taking drugs and alcohol to be effective when dealing with some distress. However, I believe this is only a temporary way. (Nkululeko)

I sometimes go out and drink alcohol to rest my mind. I also take sleeping pills just to doze off. (Mabutho)

I sometimes go and drink alcohol with like-minded friends and with that; I tend to forget most of my challenges. (Dumoluhle)

To remove distress, I sometimes drink alcohol. The advantage of alcohol is that I get drunk and quickly forget my troubles in the short term. (Dumisani)

Most students utilised the venting of emotions, denial, and alcohol and drug use strategies as coping strategies.

4.9 SUMMARY

This chapter presented the findings of the study. The findings were presented in line with the research subquestions and the hypothesis used in the study. Tables were used for the quantitative findings while interview excerpts were used for the qualitative findings. The next chapter presents the discussion and analysis of findings.

CHAPTER 5: DISCUSSION OF FINDINGS

5.1 INTRODUCTION

The current study investigated sources and levels of distress among medical students at two newly established medical schools in Zimbabwe with a view to proposing an adaptive psychological model for managing distress among medical students in Zimbabwe. The discussion integrates quantitative and qualitative data. The study discusses the findings under six sub-headings derived from the sub-research questions posed in Chapter 1, Section 1.5.1 that guided the present study. The study discusses the findings under the following sub-headings; academic workload and distress, exposure to death and distress, medical students' personal life events and distress, finances and distress, the levels of distress among medical students across the five levels of the medical degree programme, and the strategies that can be used by medical students to cope with distress. The discussion of the findings in the present study was in relation to the local and international literature reviewed. In the first sub-section, the findings of the study on the extent to which academic workload contributes towards medical students' distress at the two medical schools in Zimbabwe is discussed.

5.2 ACADEMIC WORKLOAD AND MEDICAL STUDENTS' DISTRESS

The present section is a discussion of findings on the extent to which academic workload contributes towards medical students' distress at the two newly established medical schools in Zimbabwe. This section addressed the sub-research question in Chapter 1, Section 1.5.1 which reads: To what extent does academic workload contribute to medical students' distress? The study hypothesised that academic workload does not contribute to distress in medical students. The findings on the extent to which academic workload contributes medical student' distress are discussed under the themes that include; assignments, tests and examinations, the nature of the medical programme, competition for grades and the length of the semester of the medical programme.

The following sub-section discusses findings on how assignments, tests and examinations contribute to medical students' distress.

5.2.1 Assignments, tests and examinations

The finding in the current study that too many assignments, tests and difficult examinations were a source of distress for medical students confirms findings by Bedewy and Gabriel (2015), Fung et al. (2019), Quek et al. (2019), Sha et al. (2021), Johns et al. (2022) and Barbayannis et al. (2022) which revealed that students from the general population at universities suffered a great deal of distress which largely emanates from too many assignments, tests and difficult examinations. The findings in the present study that medical students experience distress emanating from too many assignments, tests and difficult examinations confirms findings by Yusoff et al. (2011), Fares et al. (2016), Rami et al. (2017), Mittal and Kurma (2018), Reddy et al. (2018), Campbell et al. (2018), Hill et al. (2018), Weber et al. (2019), Cipra and Muller-Hike (2019), Ragabi et al. (2021) Pelisier et al. (2021) and Zheng et al. (2023) which revealed that many assignments, tests and difficult examinations posed a serious threat to medical students' state of mental health. The distressing effect reported in the current study could be linked to many assignments arising from many courses undertaken at the two newly established medical schools. Medical students undertake written assignments, tests and examinations in all the courses offered since they are all examinable. Some of the courses undertaken by medical students include Biochemistry, Physiology, Anatomy, Behavioural Sciences, Pathology (Histopathology, Medical Microbiology, Immunology and Chemical Pathology), Community Medicine, Clinical Pharmacology, Psychiatry, Surgery, Medicine, Paediatrics and Obstetrics and Gynaecology and also do clinical assessments and case reports in Psychiatry, Surgery, Medicine, Paediatrics and Obstetrics and Gynaecology among other courses. These courses, while undertaken over a period of at least five years, a minimum of two assignments per course could be a stressor for medical students at the newly established school as students appear to not yet have fully developed personal coping strategies due to the newness of the programme in the two medical schools. Furthermore, distress among medical students in the present study, which increased around the examination periods, could be due to excessive course loads, lack of physical exercise and long duration of exams as reported by the students.

The finding in the present study that too many assignments and tests are responsible for medical students' distress is, however, in sharp contrast with findings from Annous (2017) who observed that not all students experience distress because of many assignments or homework but such stress was associated with lack of resources to do the assignments. Annous' study noted that only students from low-income homes experienced distress emanating from too many assignments while those from middle to high-income homes did not experience such.

The costs arising from assignments alluded to above, include mobile data for researching and money for printing assignments. The differences between the current study findings and the findings by Annous (2017) could be that the economic situation in Zimbabwe has collapsed economic classes among students and hence, all seem to experience the same economic difficulties; leading to distress.

The present study finding that assignments cause distress among medical students is also in contrast with findings by Van-Slyke et al. (2022), which revealed that too many assignments and tests are not always a source of distress but are sometimes a form of motivation. The finding that assignments, tests and examinations are not necessarily stressors by Van-Slyke et al. (2022), could be due to the time the survey or interview was conducted. When the surveys or interviews are done at the height of examinations or assignments writing, the participants would ordinarily report higher levels of distress. In the present study, the data were collected in November during the peak of regular lectures and examinations, possibly explaining why the sampled medical students displayed more distress resulting from assignments and examinations. In the Van-Slyke et al. (2022) study, the sample of 525 students could have been surveyed when there were neither assignments nor tests being written at the time of data collection period. In addition, the reported distress among medical students may not be due to excessive assignments as earlier reported but may be due to the lack of communication between or among departments on when the given assignments should be due for handing in. Such lack of communication can lead to six assignments being submitted on the same day yet where there is communication the due dates could be spread across the weekdays, thus minimising pressure on the students.

5.2.2 Competition for grades and distress

The present study revealed a nexus between competition for grades among medical students and their distress. The findings in the present study that medical students suffer distress emanating from competition for grades is in line with findings by Abdulghani et al. (2011), Baer (2011) and Posset and Lipson (2016) which established that university students suffered a significant amount of distress as a result of competing for superior grades. Similarly, the findings in the present study that medical students suffer distress because of competition for grades, better marks are in line with findings by Cook and Crowther (2019), and Aboummah et al. (2020) observed that medical student are a highly competitive lot who end up suffering

from mental health related problems due to competition among themselves. The possible reason for medical students to compete for grades during their training could be linked to the incentives that are offered to best performing students at the end of the medical programme.

The finding in the present study that competition for grades increases distress among medical students is, however, in contrast with findings by Chamberlin et al. (2018) and Yayla and Cevik (2022) which revealed that competition for grades among a general population of students enhanced their performance and pushed them to double their effort to pass examinations. The possible reason why in Yayla and Cevik's (2022) study, for example, most students viewed competition as a source of motivation instead of a stressor, could be that Yayla and Cevik studied a Turkish sample of working teachers who were studying advanced degrees, hence, might have developed coping ways of handling distress due to their age and maturity.

5.2.3 Semester duration and distress

The current study revealed that semester duration and distress have a positive correlation. The current study revealed that longer semesters undertaken at the two medical schools contributed to medical students' distress. The two newly established medical schools run a semester of an average of five months each and this contrasts with semesters from the general programmes, which have three to four months on average. The finding in the present study that long semesters contribute to medical students' distress confirms findings by Bilgin et al. (2017), Pitt et al. (2018) and Gallardo-Lolandes (2020) which focused on the impact of semester duration on general university students and found that the more students stayed at school, the more negative emotions and anxiety they faced due to school demands. Some of the demands that come with a lengthy semester include but are not limited to depletion of food resources, pocket money, toiletries and the lengthy separation from family members. In the current study, distress among medical students could have been exacerbated by the COVID-19 pandemic, which ushered in hard national lock downs, forcing closure of all learning institutions in the country. The initial closure of all learning institutions and all other non-essential service providers in Zimbabwe through Statutory Instrument 77 of 2020 meant the disruption of the academic calendar. The two medical schools remained closed from 30 March to 28 September 2020. This resulted in the two medical schools lagging behind in terms of syllabus coverage and when they opened, the two medical schools resorted to teaching almost throughout the year to cover up for the lost time and this could have contributed to the lengthy duration of semesters and in the process, increasing medical students' distress.

The finding in the present study that long semesters contribute to medical students' distress contradicts findings by Rafidah, et al. (2009), and Sheldon and Durdella (2009) observed that longer semesters had no relationship with students' distress. The possible explanation why medical students seemed to experience distress in the present study compared to previously cited studies could be due to the designs used to collect data. Both studies (Rafidah et al., 2009 and Sheldon and Durdella, 2009) used only one instrument to collect data, a questionnaire, and this could have resulted in them missing some important qualitative experiences of medical students that could have suggested distress. As alluded to, the use of a questionnaire to collect data could have deprived the respondents the chance to open up on their lived experiences about their sources of distress. Such a quality is only found in studies such as the present study, which included the qualitative aspects in data collection like when an interview is used. The other possible explanation to the different findings could be the collectivistic nature of the Zimbabwean sample when contrasted with the individualistic sample studied by Rafidah (2009), and Sheldon and Durdella (2009) who used an individualistic sample from Europe. The collectivistic cultures like the Zimbabwean one have all their activities revolving around the extended family. The extended family provides a lot of support to buffer distress and any extended separation from such a system of support may trigger distress, especially if the separation is as long as close to half a year. This could explain distress in the Zimbabwean sample. In the same vein, individualistic communities like the Western ones, may not be affected the same way since their children are trained to be independent from early stages of life; hence, longer semesters at school, away from the family may be of no significant influence to medical students from individualistic societies.

In addition, the findings of the present study that semester duration contributes to medical students contradicts findings by Yang, Viladrich and Cruz (2022). Yang et al. sampled 556 Chinese secondary school students using a Perceived Locus of Causality Scale and Educational Stress Scale for Adolescents at the beginning of the semester and 3 months later. In their study, Yang et al. had interesting findings regarding the relationship between Physical Education examinations tests and assignments. The study found that instead of contributing to students' distress, examinations, tests and assignments increased students' motivation levels to excel. The possible explanation for different findings is that the study by Yang et al. focused on Physical Education, which involves more physical activities like running and other body exercises than it focuses on possible demanding intellectual activities.

5.2.4 The nature of the medical curriculum

The current study established that medical students' distress emanated from the nature of the medical curriculum. While the medical curriculum in the two newly established medical schools in Zimbabwe has not been formally reviewed, the rumours around its review were potential stressors for medical students. The envisaged curriculum is initially to include the teaching and learning of the bio-medical sciences in the pre-medical training and this potentially generates anxiety among medical students who can worry about the relevance of their own curriculum, which might face extinction. The study revealed that the medical curriculum is full of big and unfamiliar words, some of which are not of English origin. The finding that the medical curriculum has a distressing effect on students confirms findings by Makela, Moller and Stephens (2018), Tikkanen, Pyhalto, Pietarinen and Soini (2019), Tikkanen et al. (2019), Wright and Mynett (2019), Thomas, Kern, Hughes, Tackett and Chen (2022), Zainal, Xin, Thumboo and Fong (2022), Tikkanen et al. (2019), Wright and Mynett (2019), which concluded that the nature of the medical programme is distressing and as such, it requires resilient students who can cope with it until the course is successfully finished. Some of the possible reasons why the present study found the medical curriculum to be distressing may be that the curriculum uses unfamiliar, non-English words like those derived from Latin such as *Pneumonoultramicroscopicsilicovolcanokoniosis* and *esophagogastroduodenoscopy*. *Pneumonoultramicroscopicsilicovolcanokoniosis* means an inflammatory lung disease caused by long-term inhalation of silica dust. *Esophagogastroduodenoscopy* is an ulcer test done to determine the cause of the ulcer. Such difficult vocabulary places a strain on medical students who have to remain awake for extended hours trying to memorise and internalise such big medical words. An effective curriculum must be developed in a way that addresses the societal expectations, but in a simplified manner, that does not put a strain on the trainees themselves.

Further, the finding in the current study that the nature of the medical curriculum contributes to medical students' distress contradicts the findings by Ragab et al. (2021) which did not find the nature of the medical curriculum to be linked to distress. The possible explanation for the contradiction of results between the Ragab et al. (2021) study and the current study may be that the Ragab et al. (2021) study only used a quantitative approach, which did not provide for the understanding of lived experiences of medical students using the qualitative methods too. The present study used the mixed methods approach and for this reason, it managed to get triangulated information regarding medical students' distress.

In addition, the finding in the present study that the nature of the curriculum contributes to distress among medical students, contradicts findings by Promsri (2019) and Lopes et al. (2020) which noted that there was no link between the nature of the curriculum and students' distress. The possible explanation why the findings of the present study and those of Promsri and Lopes, Meurer and Colauto is that the latter focused on the accounting curriculum while the present study focused solely on the medical curriculum. As alluded before, the medical curriculum comprises scientific terms, some that are of Latin origin, possibly explaining the difficult nature of the curriculum.

The subsequent section discusses the link between medical students' distress and exposure to death and dying patients.

5.3. LINK BETWEEN MEDICAL STUDENTS' DISTRESS AND EXPOSURE TO DEATH AND DYING PATIENTS

The present section is a discussion of the link between medical students' distress and exposure to death and dying patients at the two newly established medical schools in Zimbabwe. This section addressed the research sub-question in Chapter 1, Section 1.5.1.2 which reads: How is the exposure of medical students to dying patients linked to distress? The study hypothesised that there is no relationship between medical students' exposure to dying patients and distress. The findings on how the exposure of medical students to death and dying of patients is linked to distress are discussed under the theme of death and dying of patients in hospital wards.

5.3.1 Death and dying of patients in hospital wards

The current study established that death and dying of patients in the hospital wards has a direct link to medical students' distress. The finding that death of patients in the hospital wards causes distress is confirmed Smith-Han et al. (2015), Dyrbye et al. (2006), Neto et al. (2020) and Adams and Walls (2020)'s findings. These studies concluded that for medical students to witness death while visiting hospital wards during clinical period is a stressor on its own. What exacerbates medical students' distress levels is their belief that their role is to save life, if a patient dies while they are professionally helping the client, feelings of professional inadequacy are evoked, hence, creating a sense of guilt and anxiety, leading to distress.

The present study further established that examination of dead bodies during confirmation of death by medical students increases medical students' distress. This finding is in agreement with the findings by Ramsland, (2017) and McAllu et al. (2005) examined in literature, which found that the manner of death causes uncertainty and anxiety among medical practitioners, especially if it is not natural. Generally, there are four manners commonly accepted for death. These are; natural causes, accidental death, suicide, and homicide. At times medical students are required to certify the death of a person, whose body would have been crushed into pieces, hence, exposing the medical student to distress. A medical student may certify two or three deaths per day where the manner of death is gruesome and emotion evoking like in a train crush, hanging or poisoning. The continued sight of these dead bodies could trigger distress for the inexperienced medical students. Facing the reality of death in the hospital beds and recognising its inevitability can trigger feelings of existential crisis among medical students offering caregiving services and this can lead to one asking themselves questions regarding our purpose for living. Such thoughts usually lead to a great sense of loneliness and fear.

The current study established that infant deaths cause distress among medical students. This finding confirms earlier findings by Margaret et al. (2018), Dartey et al. (2019), and Agteren, (2019) which revealed that infant deaths lead to more grieving for both the relatives and the health professionals working in hospital wards. Ordinarily, qualified and experienced medical practitioners are the ones who closely monitor medical students during their clinical years. This is not always the case in developing countries, such as Zimbabwe, where medical professionals are fewer; medical students may find themselves having to visit children's wards on their own. In circumstances where medical students visit hospital under inadequate supervision, the possibility of witnessing infant death is very high and this triggers distress emotions in students who may have a deep connection to infants due to their vulnerability. Their stressful experiences emanate largely from their desire to save the child and when the child dies, the practitioners may feel they did not do enough. As previously highlighted, collectivistic societies like the Zimbabwean one, place a community ownership and responsibility on children. Every child in the community belongs to all regardless of who the parents are. This collectivistic nature of the Zimbabwean society puts medical doctors at greater risk of distress; hence, doctors witnessing the death of a child could experience the loss in personal terms. It is like losing one's own child and it is worse when one thinks of the vulnerability of children and how they need external support for them to grow and develop into adults. What could distress medical students even more is to think of the child's unrealised dreams, unfulfilled aspirations

and ambitions and feel that more could have been done to save the child's life. The death of a child contrasts with that of an adult; adults are viewed as being responsible for their own health or illness. The fact that some diseases in adults emanate from their behavioural characteristics makes the practitioners to be less connected emotionally. For example, an adult succumbing to an HIV-related illness may be regarded as a choice the adult made i.e. to indulge in unprotected sex and acquiring a disease. In addition, over-consumption of alcohol leading to cirrhosis of the liver and dying from such may not trigger distress on medical students as they may be viewed as resulting from their free-will.

The finding in the present study that witnessing death and dying of patients by medical practitioners was linked to medical students' distress contradicts the finding by a Canadian study by Davies (2016), which concluded that witnessing death and dying patients had no direct link with medical students' distress. The contradiction between the present study and Davies' (2016) is possibly due to the nature of the samples used. In his study, Davies used a Canadian sample, which possibly believes in the inevitability of death, hence, the participants could not have implicated death as a stressor as they believe one should be psychologically prepared for it. Upon seeing dying patients in the wards, the Canadian sample would probably conclude that the inevitable has happened while a Zimbabwean sample might believe that death is sacred, unusual and therefore, a distressing experience.

The subsequent sub-section discusses how medical students' personal events are associated with distress.

5.4. PERSONAL LIFE EVENTS OF MEDICAL STUDENTS AND DISTRESS

The present section is a discussion of how personal events of medical students contribute towards distress at the two newly established medical schools in Zimbabwe. This section addressed the research sub-question 3 in Chapter 1, sub-section 1.5.1.3 which reads: How are personal life events of medical students linked to distress? The study hypothesised that medical students' personal events are not linked to their distress. The findings are discussed under the theme of death of a loved one and distress.

5.4.1 Death of a loved one and distress

The present section is a discussion of how the death of a loved one is associated with distress. The current study found out that the death of a loved one had a positive correlation with distress.

The finding in the present study that the death of a loved one causes distress confirms findings by Joaquim et al. (2021), Gungor et al. (2021), and Torres-Chavez et al. (2022) observed that personal life events such as such death of a loved one contributed much to the general population of university students. It emerged from the present study that grief feelings cause an individual to lose concentration on their activities and focus on their loss. The grieving process if not supported can cause decline in academic performance, thereby further increasing students' distress. The finding that death of a loved one causes distress dovetails with findings by Laranjeira et al. (2022) which revealed that the death of a loved one leads to complicated grief which manifests in excessive rumination, alienation, hopelessness, and intrusive thoughts about the dead. A grieving student, for example, can isolate himself or herself from peers while trying to understand the loss and this also increases distress. Distress emanating from losing a loved one is linked to the nature of the relationship with the lost relative. Death of a parent has long been linked to more distress compared to any other death, which might occur in the family. Research has shown that the death of a parent is more emotionally draining compared to that of a sibling or a guardian (Laranjeira et al., 2022).

The findings in the present study that medical students suffer from distress associated with negative personal life events confirm findings by studies that focused on medical students such as those by Dyrbye et al. (2006), Noone et al. (2017), Hill et al. (2018) and Nassif et al. (2023) which reported that medical students faced distress characterised by anxiety and mental suffering as a result losing a loved one. What exacerbates the distress of the sampled Zimbabwean medical students could be due to the socialisation aspect common to the African settings where there are serious bonds between and among relatives.

In addition, the finding in the present study that personal life events contribute to medical students' distress resonate with findings by Buizza et al. (2022), which revealed that not all personal life events contribute to students' distress but only negative life events do. The present study did not find a link between positive life events such as marriage or gaining a new member in the family and distress like in the study by Buizza et al. (2022). The similarity in the findings could be because in the present study, the majority of the students were unmarried and most did not have children either.

The findings of the present study that losing a loved causes distress in the medical students contradict Corden et al. (2008) whose findings reveal that the loss of a loved one does not

necessarily lead to distress. In their study, Corden et al. found that it is not the loss of a loved one itself which causes distress but that those already experiencing high levels of distress were vulnerable to the emotional impact of loss. The possible reason why the Zimbabwean sample appeared to show more signs of distress compared to Corden et al.'s sample could be that in developing economies, the burden of school fees, rent, food and school stationery is a responsibility of one person, the breadwinner. If for any reason, the breadwinner dies, it means the student suffers from the economic and social effects. This contrasts with findings from Corden et al., which were based on sampled participants from the United Kingdom population, a developed country, and found that the loss of a loved one has no direct financial implications on the students' education. The possible reason why there are no direct effects of losing a loved one could be due to the existence of alternative funding schemes such as scholarships and grants, student loans, part time jobs, and teaching and research assistantships.

The other possible explanation why the present study results contradict results by Corden et al. regarding death of a loved one and distress could be because in Europe, it is commonly accepted that a human being will not live forever and there is always a discussion around death and dying during one's active period. In contrast, in the African societies like Zimbabwe, discussing death is regarded as taboo and when eventually deaths do come, the bereaved are usually unprepared for it, hence, its negative impacts can easily be felt.

The following sub-section discusses the link between financial status and medical students' distress.

5.5 FINANCIAL STATUS AND DISTRESS

The present section is a discussion of the link between financial status and medical students' distress. This section addressed the research sub-question 1.5.1.4 which read: What is the relationship between finance and medical student's distress?

The study hypothesised that there is no link between financial resources and medical students' distress. The findings of the current study revealed that lack of financial resources is one of the major sources of distress that mainly affects medical students. The finding that lack of financial resources distresses medical students confirms findings by Nelson et al. (2008), Heckman et al. (2014), Tran et al. (2018), Cadaret and Bennet (2019), Heckman et al. (2020), Hicks et al.

(2021), Kelley et al. (2022), Szkody et al. (2023) and Hossain et al. (2023) which found that most university students drawn from different faculties suffer from distress emanating from their poor financial status. The above studies concluded that financial resources buffered distress for students at university, while lack of financial resources predisposed students to distress. In the current study, specific financial demands, such as, the need to purchase laptops, memory sticks, textbooks and other stationery items like exercise books and pens, seemed to put more pressure on students, thereby exposing them to distress. Similarly, findings by Cadaret and Bennett (2019) revealed that distress levels increase due to financial demands. Financial distress emanates from issues such as amount of debt, lower availability of family financial resources, and increased need for employment and these were found to be particularly impactful with respect to attrition rates (Lombardi et al. 2012). In addition, the finding in the present study that poor financial status is a stressor for medical students confirms findings by Hill et al. (2016) which concluded that medical students, like students from the general population, experienced distress emanating from their financial status.

While the findings of the current study that lack of financial resources is linked to distress, the quantum of distress in the Zimbabwean sample could be higher because of the inflationary environment prevailing in in the country. For example, a Zimbabwean medical student with termly-budgeted financial resources could suffer from inadequate finances due to the price instability, inflation and unstable exchange rates, putting the student on increased distress if compared to their counterparts in stable economies like in the United Kingdom, United States, France or even South Africa.

In contrast, studies done in Europe such as those by McCloud and Bann (2019) and Wilson et al. (2022) found that financial status was not linked to student distress. These studies found that financial stress is significantly more likely for students from low-GNI (Gross National Income) countries. The possible reason why studies conducted in Europe did not find financial status as a source of distress for European students is that the majority of them come from high-GNI. In addition, European education system creates a safety net for those who cannot manage to pay, thus, making it possible for those without financial stability to still enjoy quality education without having to go through the difficulties of looking for funds. As alluded, funding alternatives are not a privilege enjoyed by most students in developing countries such as Zimbabwe where the present study is situated. In the present study, financial status is one of

the leading distressors possibly because of the volatility of the economic situation, which is facing growth-related challenges.

The subsequent sub-section discusses the levels of distress in different grade levels of the medical students.

5.6 LEVELS OF MEDICAL STUDENTS' DISTRESS

The present section discusses how the levels of distress differ across the five levels of the medical degree programme at the two newly established medical schools in Zimbabwe. This section addressed the research sub-question 1.5.1.5 which read: How are levels of distress different across the five levels of the medical degree programme?

The study hypothesised that there was no significant difference in levels of distress across the five levels of the medical degree programme. The findings of the current study indicate that there is a negative relationship between medical degree levels and distress. The results indicate that as the academic years increase, distress levels decrease, suggesting significant decline in stress as students' progress from one academic year to another. The findings in the present study that medical students' distress decreases as you increase grade levels contradict findings of studies on general population of students (e.g. Bore et al. 2016; Gust et al., 2017) and studies on medical students (e.g. Lombardi et al. 2012; Rafique et al., 2019; Vehmeijer et al., 2020; McKerrow, 2020) which showed an increase in distress as you increase academic grade levels of medical students. The increase in distress levels revealed in literature demonstrates that first and second year students have less distress and anxiety owing to their non-exposure to clinical settings. The fact that senior grades like third years up to fifth years are exposed to theatre, surgical operations and normally witness deaths in the wards; explains higher levels of distress reported in literature. The current finding that distress levels decrease as you increase medical grade levels can be attributed to the fact that medical students in the upper level of the medical programme would have developed their own coping skills during the formative years and are more prepared to face any challenges than what the first year students would do. Further, more distress in the first year as compared to the last years at the medical school can be a result of anxiety emanating from leaving home environment and starting a new life as an adult. The stress could be resulting from fear of the curriculum itself, fear of colleagues, and even fear from seniors who may want to push the narrative that the medical programme is not for the

faint hearted. With time, students can discover on their own that the medical programme is just like any other programme at university and in the process; develop their own strategies for dealing with challenges, hence, escaping the distressing nature of their training programme. The differences in distress levels as alluded, relates to the theory guiding this study, the Transactional Model of Stress and Coping in that the theory posits that; you can expose same individuals to the same sources of stress and still get different results as in the present study. What is a stressor to one is not always a stressor to the other. For example, first years may be distressed by witnessing a surgical operation being done on a patient yet the final medical student may interpret the operation differently and therefore, not feel the effect of stress.

Similarly, the finding in the present study that pre-clinical medical students suffered more distress when compared to clinical students is in contrast with findings by Pelissier et al. (2021), highlighted in the background of the study, which found higher levels of distress among fifth and sixth year medical students. The contradiction between the present study and the Pelissier study could be due to the location of the studies, the Pelissier study was conducted in France where, because of 'soft life' provided by parents, students can delay in the development of own coping mechanisms while in the present study, the sampled medical students could have developed resilience to cope with challenges due to exposure to many problems in their early lives. Further, the contradiction could be because of the differences in the medical schools used. The present study used medical students from schools established less than ten years ago while the Pelissier et al. (2021) study used students drawn from several medical schools whose establishment ranged from thirty to sixty years ago. This can present different challenges for medical students; newly established schools have mostly teething challenges while old medical schools can present traditional challenges and this has implications to coping mechanisms students can use.

The subsequent section discusses coping strategies used by medical students in dealing with distress.

5.7 COPING WITH DISTRESS

The present section discusses coping strategies used by medical students at the two newly established medical schools in Zimbabwe. This section addressed the research sub-question 1.5.1.6 which read: What coping strategies do medical students use to cope with distress?

The study hypothesised that there is no relationship between distress and coping strategies. The coping strategies are discussed under three broad dimensions: problem-focused coping, emotion-focused coping, and potential maladaptive emotion-focused coping.

5.7.1 Problem-focused coping

The finding in the present study that medical students use social support for instrumental reasons, suppressing competing activities, and restraint coping to deal with distress confirms findings of studies which focused on general students such as those by Senderayi (2021), Carver and Connor-Smith (2010), Connor-Smith and Flachsbart, (2007), and Carver (2013) which found a strong connection between distress sources and problem-focused coping. It also emerged from the present study that medical students at the two medical schools rely on seeking social support for instrumental reasons to cope with distress emanating from the learning environment. Working in groups or seeking assistance from colleagues within the medical campus seemed to alleviate students' distress as in most cases; it is much easier to get help from peers than from other potential sources of help like faculty representatives or from the lecturers. The finding that medical students at the two medical schools suppress competing needs when faced with distress confirms observations in Lazarus and Folkman (1984)'s theory that looking for alternative activities to do helps in reducing the intensity of distress. The modern day students have many alternatives of escaping from their distress. Some resort to social media and internet surfing when confronted by distress. One can decide to isolate and watch a live game of football in their own bedroom instead of brooding of what happened in the presence of other students. Others turn to Facebook where they can meet new friends and start chatting to circumvent stress.

The present finding that medical students use problem-focused coping in dealing with their own distress confirms findings by Senderayi (2021) which had similar observations after involving Zimbabwean teachers for burnout-testing. What is interesting in the present study and in the study by Senderayi (2021) is that, both studies got similar results. This could be because both samples are from the Zimbabwean agrarian and collectivistic society, which emphasises that a problem for one is a problem for all, hence, the tendency to use strategies such as social support. This could be an influence of the role of the extended family in Zimbabwe where people are encouraged to seek help from aunties and uncles when in

problematic situations or when they cannot cope with the situation using their own internal resources.

5.7.2 Emotion-focused coping

The present study established that most medical students used emotion-focused coping to manage distress. In terms of emotion-focused coping, positive re-interpretation and growth decreased students' frustration and conflicts, while it enhanced changes. Seeking emotional social support increased students' conflicts, while religious coping decreased changes. The study also found that emotional support coping, religious coping, and humour were among the critical strategies used by medical students to deal with distress. Such a finding confirms findings by Carver et al. (1989), Bonnano (1997), Abel (2002), Keltner, Samson and Gross (2012), Kuiper (2012) and Senderayi (2021), which noted that professionals commonly resorted to using emotional support coping, religious coping, and humour to deal with distress. The evident use of the religious coping strategy by the sampled medical students could be a result of the deep Christian values shared by most Zimbabweans where about 85% of the population are linked to Christianity. A large number of Zimbabweans are regular attendees at a church and are promised deliverance from their heavy burdens. The church, through the Bible teachings in Matthew 11:28-30 invites all who are weary and burdened to come to Jesus Christ and be saved from their problems (Holy Bible, 2011).

5.7.3 Potential maladaptive emotion-focused coping

Concerning the potentially maladaptive emotion-focused coping, the study reveals that venting emotions significantly reduced student frustration and decreased student pressure. Venting had relieving and soothing emotions, as they feel better after shouting at the stressor. This is opposed to bottling emotions and keeping things to oneself. There is an interesting finding in the current study, that while denial was not reported to be linked to distress in the quantitative results it was found to be popular in the qualitative results? The discrepancy noted in quantitative and qualitative findings confirms the efficacy of using the mixed methods approach. In the quantitative results, medical students could have filled in responses so that they were in harmony with what they thought the researcher wanted to hear yet on the qualitative results, sometimes it becomes difficult to say things you do not subscribe to as the non-verbal communication can betray one's true expressions. Qualitative research too, is not

always accurate; however, in this case it has helped to realise the importance of having different approaches to understanding problems.

The finding in the current study exposed that increased mental disengagement reduced student frustration, but increased conflict and self-imposed stress, while behavioural disengagement increased frustration and changes. The quantitative results revealed that the use of alcohol and drugs did not have any significant impact on medical students' distress. The qualitative results however, found that some medical students frequently use alcohol and drugs to manage stress and this confirms earlier findings by Leandro and Castillo (2010), Rothmann et al. (2011), and Dubow et al. (2011) which showed that some people resort to the use of alcohol and drugs to forget about the existence of the stressor at hand. Similarly, the findings in the qualitative phase? that some students use alcohol and drugs while the quantitative sample did not find any significant relationship between alcohol and drug use with distress points to the robustness of using both quantitative and qualitative approaches when interrogating real life challenges affecting medical students while at school.

5.8 SUMMARY

The chapter discussed the findings of the present study using the mixed methods approach. These findings were presented in the context of research sub-questions in Chapter 1 and against reviewed related literature. The next chapter gives a summary of the study, draws conclusions and makes recommendations.

CHAPTER 6: SUMMARY, CONCLUSIONS AND RECOMMENDATIONS

6.1 INTRODUCTION

The aim of the study was to investigate the sources and levels of distress among medical students at the two newly established medical schools in Zimbabwe. This chapter presents a review of the research problem, the related literature, and the research methodology, summaries of the findings of the study as well as the recommendations of the study. The chapter also presents the researcher's proposed model for the management of distress among medical students undergoing medical training in general and the contribution of the study. The chapter also makes recommendations for further studies.

The following section presents the review of the research problem.

6.2 A REVIEW OF THE RESEARCH PROBLEM

Chapter 1 revealed that worldwide, medical students are at a risk of psychological distress. Distress for medical students emanates from the unique and demanding nature of the medical training programmes (Tian-Ci Quek et al., 2019; Johns et al., 2022; Feng et al., 2022; Alotiby et al., 2021; Drapeau et al., 2012; Olivier 2005; Dyrbye et al., 2010; Nikolis et al., 2021; Soliman 2014 & Naidoo et al., 2014). Studies done internationally, for example, in Saudi Arabia (Abdulghan et al., 2011), the United States of America (Oaklander, 2016), France (Saias et al 2014), Nigeria (Seun-Fadipe & Mosaku 2017), Guinea (January et al., 2018), and South Africa (Van Niekerk et al., 2012), found that medical students' distress was linked to information overload, long study hours, high academic and personal and family events, competition for grades{,} and frequent and varied examinations. It was observed in Chapter 1 that, while there is abundant evidence of distress in medical students globally, there is little evidence available in literature about the Zimbabwean situation. Studies carried out in Zimbabwe (e.g Mapfumo et al., 2014; Mutambara 2016), focused on stress-related issues in other professions like general teaching and special needs education. Lack of studies focusing on medical students prompted the current study, which investigates students from two newly established medical school in Zimbabwe to determine if they also experience the same distress as those from the rest of the world. Chapter 1 revealed that despite efforts by medical schools to promote mental health and general well-being of students, medical students still suffer from distress.

Having discussed a review of the research problem, the following section presents the summary of the related literature reviewed.

6.3 SUMMARY OF RELATED LITERATURE

The summary of the related literature is presented as per the research questions presented in Chapter 1.

6.3.1 Academic workload and medical students' distress

The reviewed literature pointed to the existence of academic distress among medical students during medical training (Yusoff et al., 2011; Pelissier et al., 2021; Barbayannis 2022). Distress emanating from academic workload is an inevitable part of medical college and affects students at any stage of their study (Masih & Gulrez 2006; Madhyastha 2014). Researchers recognised different important stressors for medical students, which include examinations, excessive assignments, the nature of the medical curriculum, fear of failure in educational achievement, competition for grades, and the semester duration (Koschel et al., 2017; Bilgin 2017; Tikkane 2019; Gallardo-Lolandes 2020). Studies (e.g. Madhyastha, Barbayannis and Koschel et al.) have revealed a positive correlation between academic workload and mental well-being suggesting that the understanding of academic stressors is as important as understanding the human psychological well-being.

6.3.2 Medical students' exposure to dying patients and distress

The international literature has indicated that the experience of seeing a patient dying by medical students was one of the most challenging aspects of learning in medical schools (Smith- Han 2015; Dyrbye et al., 2006; Neto et al., 2020). Studies revealed that most medical students face the dilemma of balancing the act of being able to protect themselves by becoming emotionally detached, yet still being able to display empathy and caring to their patients who may after all not win the battle against the disease. Studies revealed that the amount of distress among medical students was more pronounced if an infant lost his or her life while under the care of a medical student. The literature revealed that medical students exposed to death usually experienced insomnia and many reported feeling awkward, sad, overwhelmed, apprehensive, vulnerable, angry, and anxious, thus precipitating thoughts about their own death (Batley, Bakhti, Chami, Jabbour, Bachir, El Khuri, & Mufarrij, 2017).

6.3.3 Personal life events and medical students' distress

Studies cited in literature revealed that personal life events experienced by medical students during training contributed to their distress. Personal events such as death of a spouse, death of

a close family member, marital separation, serious personal injury, change in health of personal or family member, change in living conditions, sex difficulties, pregnancy, and gain of a new family member and change in sleeping habits were identified as having a positive correlation with medical students' distress (Shapiro 2011; Bell 2013; Anne 2014; Noone 2017). Personal life events like losing a loved one was found to impact the students more as they were linked to payment of school fees, buying of groceries and the payment of rentals for the medical students.

6.3.4 Financial status and medical students' distress

Literature demonstrated that the majority of students at universities are having challenges in terms of financial support. Financial stressors identified in literature include living expenses, transport costs, tuition and academic expenses, overspending or credit card debt, student loan debt, work–school–life balance, financial pressures from family, and uncertain employment after graduation (London 1989; Nelson 2008; Heckman et al., 2014; Beiter et al., 2015; Tran 2018). Having sufficient finances during college life was reported in literature as a buffer against distress.

6.3.5 Levels of distress among medical students across the five levels of the medical degree programme

The international literature showed the highest prevalence of physiological distress among firstyear medical students and the stress scores increased significantly with progression in the year of study (Rafique et al., 2019; Vehmeijer et al., 2020; Voltmer 2021). Studies cited in literature reported high levels of distress in higher grades due to the exposure of medical students to clinical duties such as carrying out surgical operations on patients and inevitably witnessing death in the hospital wards, and examination and certification of dead bodies.

6.3.6 Strategies used by medical students to cope with distress

The literature revealed that when faced with distress, medical students use problem-focused coping, emotion-focused coping and the potentially maladaptive emotion-focused coping (Carver & Connor-Smith 2010; Carver 2013). Problem focused-coping include seeking social support for instrumental reasons and suppressing competing activities (Rothmann et al., 2011). Emotion-focused coping as reported in literature include positive reinterpretation and growth, seeking emotional social support, humour, and religious coping (Peterson et al., 2007). The

potentially maladaptive emotion-focused coping includes venting of emotions, denial or the use of drugs and alcohol (Senderayi, 2021).

Having discussed the summary of related literature, the following section presents a summary of the research methodology.

6.4 SUMMARY OF THE RESEARCH METHODOLOGY

The worldview used to underpin this study was pragmatism. Tashakorri and Teddie (2010) influenced the choice of this philosophy. The pragmatist philosophy was chosen mainly because it allowed the researcher to quantitatively determine the sources and levels of distress among medical students yet at the same time, understanding the medical students' lived experiences using the qualitative methods. A calculated sample of one hundred and forty-eight medical students drawn from two medical schools, Medical School A and Medical School B, was used for the present study. One hundred and thirty-four of these were given two questionnaires; namely, the Student Stress Inventory (Revised), a Likert type scale which rated potential sources of distress for medical students as reported by them and a Cope Dispositional Version which identified coping styles employed by medical students to manage distress. Of the one hundred and forty-eight medical students, fourteen were interviewed to understand the sources and levels of distress of medical students from a lived perspectives viewpoint. The quantitative data collected were analysed using linear regression, which tested the association between independent, and dependent variables such as academic workload and distress, death and dying and distress, personal events and distress as well as lack of finances and distress. One sample t-test was also employed to measure the extent to which lack of finances contributed to medical students' distress while the One-Way Analysis of Variance (ANOVA) was used to determine the levels of distress across the five levels of medical degree programme. The findings were then generalised to a larger population of medical students.

Having summarised the research methodology, the subsequent section presents a summary of the findings of the present study.

6.5 SUMMARY OF THE FINDINGS

The summary of the findings in the present study is presented as per the research questions presented in Chapter 1.

6.5.1 Research question 1: To what extent does academic workload contribute to Medical students' distress?

It emerged from the current study that there is a positive relationship between academic workload and medical students' distress. The research established that as academic demands increased, medical student's distress increased too. The research established that too many assignments and tests, the lengthy duration of the semester and the nature of the medical curriculum, which contains Latin words and other non-English words, contributed significantly to the medical student distress.

6.5.2 Research question 2: How is the exposure of medical students to dying patients linked to distress?

The current study established that medical students' exposure to dying patients and distress were positively correlated. It emerged that most medical students experienced negative emotions on the sight of patients dying in the wards. The study established that infant deaths were associated with more distress compared to adult deaths and medical students would feel a sense of responsibility if unable to save the helpless and vulnerable infants. The study further revealed that some medical students' distress emanated from examination and certification of dead bodies during clinical years.

6.5.3 Research question 3: How are personal life events of medical students linked to distress?

It emerged from the present study that medical students' personal life events had significant positive association with distress. The study established that some students experienced adjustment problems owing to losing loved ones such as a sibling, parent or guardian, while a few others mentioned that they had not experienced such life problems. The study established that distress was more pronounced on those medical students who lost loved ones who were breadwinners. The study found that those who lost loved ones who were breadwinners constantly worried about the change of their living circumstances at the medical schools emanating from the payments of rent, food, and transport to campus for those who stay outside the campus, and money for other medical school necessities like money for data and lunch.

6.5.4 Research question 4: What is the relationship between finance and medical Students' distress?

In the present study, there is a positive relationship between financial resources and medical students' distress. It emerged from the current study that if the financial position of the students worsened by a unit, on average, distress also increased. The study established that medical students' distress emanated largely from money to buy bond paper, printing, money for daily lunch, money for transport to and from the medical school and money to buy data for carrying out routine assignment researches.

6.5.5 Research question 5: How are levels of distress different across the five levels of the medical degree programme?

The study established that junior grades at the medical school experienced more distress as compared to senior grades. This is contrary to the literature reviewed which revealed that, distress among medical students increase as you increase grade levels due to the exposure senior grades get while doing clinical activities like performing surgical operations, visiting hospital wards and witnessing deaths of patients. The study established that senior grades showed less distress possibly due to their new-found and self-discovered ways of circumventing distress because of more years at the medical schools.

6.5.6 Research question 6: What coping strategies do medical students use to deal with distress?

It emerged from the study findings that medical students use a variety of coping strategies when dealing with distress. The study established that medical students use problem-focused coping strategies like seeking social support for instrumental reasons, suppressing competing activities and restraint coping in managing distress. The study also established that some students cope with distress using emotion-focused coping strategies like positive re-interpretation, seeking emotional support, religious coping, and acceptance. The study further established that a few other students managed distress by using potentially maladaptive emotion-focused coping strategies like venting of emotions, denial and the use of alcohol and drugs.

Having summarised the findings of the present study, the subsequent section draws conclusions from the study.

6.6 CONCLUSIONS

The main aim of the study was to investigate sources and levels of distress among medical students at the two newly established medical schools in Zimbabwe. The study concluded that medical students experience high levels of distress, which emanate from varied sources. Medical students were found to experience distress emanating from academic workload, their exposure to dying patients, personal life events like the death of a loved one and their lack of finance. The study concluded that levels of distress differ according to grade levels, with junior grades exhibiting higher levels of distress when compared to senior grades. The study also concluded that appropriate use of coping strategies could ameliorate distress among medical students.

The following section presents recommendations for policy, practice and further studies.

6.7 RECOMMENDATIONS

Consequent on the findings of the current study, the following recommendations are hereby made:

6.7.1 Policy

While there is a cross cutting policy on mental health issues in Zimbabwe (the Zimbabwe National Mental Health Policy of 1984), it is recommended that an Institutions of Higher Learning Mental Health Policy be introduced. The specific mental health policy may go a long way in addressing mental health challenges experienced by medical students and other students in institutions of learning. For better and sustainable outcomes, the Mental Health Policy for Institutions of Higher Learning may need to be integrated with the Health Act (Year). As such, an Act of Parliament should also be considered in the designing of the envisaged Mental Health Policy to get full support of law-makers. By including, a Mental Health Act in coming up with the policy, mental health issues may be given priority at medical training schools, leading to early detection of mental health-related challenges. Early diagnosis and early management in case of distress cases can prevent full-blown mental health problems like depression or schizophrenia. The policy should include sections, which protect medical students from specific stressors like financial distress emanating from the loss of loved ones who double as breadwinners. Such a section can include a clause to lend financial assistance to those who would have lost their loved ones during the medical training programme.

6.7.2 Practice

The Government through the Ministry of Higher and Tertiary Education, Innovation, Science and Technology Development can play a leading role in the establishment of mental health and well-being policy so that the management of mental health issues among medical students is standardised across all medical schools in Zimbabwe. The policy having been drawn from an Act of Parliament should provide for the establishment of Psychology Clinics in all medical schools in the country. While the current psychological services offered at the two newly established medical schools are mitigating mental health challenges, the demand for such services by medical students seems to out-match the services, hence, the need for a peer-to-peer counselling service to be introduced to cover such a gap. Peer-to-peer counselling can thus, play a complementary role to the already existing counselling services.

The establishment of Psychology Clinics in all medical schools through the Ministry of Higher and Tertiary Education, Innovation, Science and Technology Development will ensure that all students have equal access to mental health, hence affording them an opportunity to learn within environments of less distress. The proposed clinic will also allow medical students to carry out hospital visits and meet patients with various ailments to be evaluated for distress after encountering patients to check if they are psychologically vulnerable to distress or they are resilient. By their very nature, hospital visits may bring distressing experiences to medical practitioners. Psychological evaluations can identify such medical students who can then be helped in terms of psychotherapy or counselling. If established, the envisaged psychology clinic will need to be accessible twenty-four hours a day to swiftly attend to all cases of distress within medical schools. The Medical Schools can also have a peer-to-peer online facility to cater for those medical students who may not be physically present at the time they need outside psychological services. This will complement the already existing online counselling services provided by qualified psychologists.

Medical schools need to continually review the medical training curriculum in collaboration with medical students and other key stakeholders. The timeous review of the curriculum will help the lecturers in the teaching of the medical degree; understand those aspects in the curriculum, which contribute to medical students' distress. The reviews may enable the medical schools to respond to any arising societal needs or any other changes that can take place in the society. The reviews may also help the teaching staff to adjust the academic workload so that it is in line with international standards while at the same time eliminating distress linked to academic workload.

Medical students should be encouraged to attend capacity-building workshops and refresher courses on mental health so that they are equipped in terms of the best available strategies of managing distress. This exposure will make them understand what best decision-making strategies are available for them when faced with distress.

6.7.3 Recommendations for further studies

The present study, which investigated sources and levels of distress among medical students, was restricted to two newly established medical schools in Zimbabwe. It is therefore, recommended that, future studies on distress expand to look at distress on all health training facilities in the country such as nursing schools, public health schools, physiotherapy schools and occupational therapy schools so as to have a holistic understanding of distress among a wide range of health professionals undertaking degree programmes at universities. It is recommended that future researches on students' distress utilise the present study's findings as a baseline for their own studies to build from the already available information. It is further recommended that future studies include perspectives from other key stakeholders such as parents of the medical students, lecturers in the medical schools and medical practitioners who are already in the field of practice to get a comprehensive understanding regarding medical students' distress during training.

Having discussed the recommendations of the present study, the subsequent section discusses a distress and coping model that medical students may use to manage distress.

6.8 PROPOSED DISTRESS MANAGEMENT AND COPING MODEL FOR

MEDICAL STUDENTS

A Distress and Coping Model for medical students is hereby proposed. The model is a product of reviewed literature, the theoretical framework, medical students' responses and their perceptions regarding their sources of distress and how these can be effectively managed. The model borrows largely from the Lazarus and Folkman (1984)'s Transactional Model of Stress and Coping and from Gadzella's (2005) Student Stress Scale, a model which guided the current study. According to the proposed model, medical students' distress emanates from four broad sources of distress, which give birth to the specific sources of distress. These broad sources of distress are pressure, frustration, conflict, and self-imposed stress as demonstrated under the sub-sections, which address the specific components of the proposed model. The proposed model clarifies that for one to cope with distress, one first needs to identify and understand the type of stressors they are facing and what their psychological reactions to these stressors are.

Depending on his or her reactions, which could be either physiological, emotional, behavioural or cognitive, a medical student can experience either no distress, mild distress, severe distress or even burnout. If a medical student's reactions breed distress, they proceed to utilise a coping style of their choice. The coping styles as explained by Carver (2013) include problem-focused coping, emotion-focused coping and potential maladaptive coping. If any of these three coping strategies fails to reduce distress, the distressed student experiences burnout. When burned out, the students can disengage or experience exhaustion.

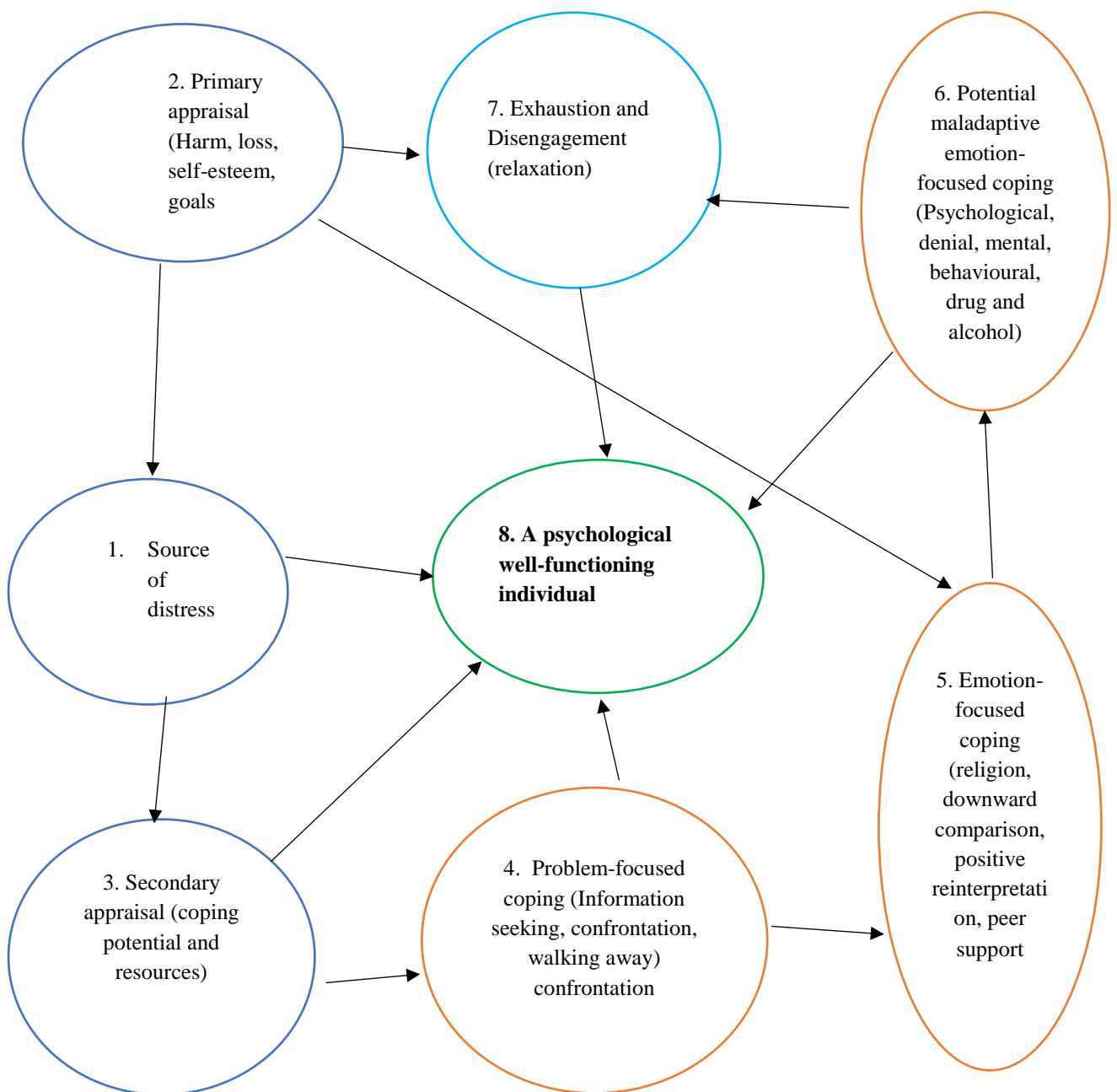


Figure 5 A proposed Distress and Coping Model for medical students

Component 1: Sources of distress

The model proposes that, for effective management of distress in medical schools, medical students need to identify and understand the sources of distress. The proposed model identifies five broad sources of distress; namely: frustration, conflict, pressures, changes and self-imposed stressors. These broad categories of distress give birth to specific stressors encountered by medical students at medical schools in Zimbabwe namely; academic demands (pressure), personal life events (changes), lack of finances (pressure), interpersonal relations (conflict) and students' exposure to dying patients (pressure). When medical students experience some of the identified stressors and they are expected to positively interpret the stressors, pick the good things the stressors present and move on with life. If they cannot pick positive things from the stressors, they are expected to either fight the stressor or flee from the stressor. Fleeing from the stressor helps to circumvent its distressing effects. The proposed model is in line with the Lazarus and Folkman (1984)'s Transaction Model of Stress and Coping which posits that stressors are not inherently stressful but the way an individual interprets and reacts to them determines whether they will experience stress or not.

Component 2: Primary appraisal

Primary appraisal is akin to a reaction. Reaction to distress is critical in distress management. How medical students respond to distress determines if they will be distressed or not. The primary appraisal involves determining whether the stressor poses a threat, a loss or interferes with goal accomplishment. The model proposes that when faced with distress, medical students should positively interpret the situation for the good of their mental health and well-being. In reacting to distress, medical students are expected to respond psychologically, emotionally, behaviourally, and cognitively. The Lazarus and Folkman (1984)'s Transaction Model of Stress and Coping, a model guiding this study, points to the fact that not all people are affected similarly when they are exposed to a stressful event. It is their reactions to the stressors which determine if they will get stressed or not. Medical students who see workload as motivation do not experience distress yet those who see workload as a problem and a hindrance to their personal and academic growth do experience distress.

Component 3: Secondary Appraisal

The model proposes that for medical students to overcome distress, they need to evaluate their coping abilities and resources. The most important factor in this component is looking at all available resources such as money, family and their ability to control the prevailing situation using the available resources. The model proposes that those students with resources at their disposal are easily able to hold themselves or the other person accountable for the prevailing situation henceforth have future expectancy in terms of managing distress.

Component 4: Problem-focused coping

The proposed model suggests that medical students make use of problem-focused coping when managing distress. The problem-focused coping entails the use of action-oriented coping strategies like social support, suppression, and restraint coping. With regard to suppressing competing needs, the model proposes that when faced with severe forms of distress, they can resort to other activities like surfing the internet, chatting with friends on social media and or taking a walk away from the stressors. The model proposes that medical students can also seek support from friends and colleagues when in need of help. This ameliorates the effects of distress. Restraint coping is another recommended coping strategy medical students can use to manage distress. Restraint coping involves delaying acting when faced with distress. Medical students can take a nap while under stress and read later to avoid or reduce distress.

Component 5: Emotion-focused coping

Emotion-focused coping entails handling one's feelings to better cope with distress. The model proposes positive re-interpretation of situations, seeking emotional and social support, religious coping and downward comparison as some of the ways through which medical students can manage their feelings to lessen distress. While emotion-focused coping is not the best coping strategy available, the model recommends that when faced with distress, medical students can seek emotional and moral support from peers and friends as this may lead to better feelings. Seeking help from friends is critical because of shared interests as opposed to seeking help from lecturers who may view distressed students with a different eye after sharing their problems. Peers understand problems shared by fellow students from an insider perspective; hence, distressed students may find it easier to implement coping strategies shared by peers. Religious coping is central to coping since the majority of households in Zimbabwe are

Christians. Reading the Bible, singing worship songs and meditating are some recommended adaptive ways of managing distress for medical students.

Component 6: Potentially maladaptive emotion-focused coping

For a better understanding of coping with distress, the proposed model recommends that medical students should understand the dangers of using potentially maladaptive emotion-focused coping constructs such as venting emotions, denial, and alcohol and drug use, mental disengagement and behavioural disengagement. Potential maladaptive emotion-focused coping has short-term benefits and therefore, the model does not recommend it for long term and sustained coping because it leads to exhaustion and disengagement in the long term. Shunning potentially maladaptive emotion-focused coping and embracing problem-focused coping is the most sustainable coping strategy recommended for medical students.

Component 7: Exhaustion and disengagement

Exhaustion describes an emotional state where the individual feels overloaded, helpless, inundated and psychologically drained by the demands of the job (Senderayi, 2021). Exhaustion is linked to too much workload. The model proposes that for medical students to escape exhaustion, they need to practice relaxation each time they feel emotional, behaviourally and psychologically drained. Medical students can also engage in sleep to relax themselves and escape exhaustion, and that way they can manage distress. Reading for examinations and witnessing death of patients in the hospital wards are some of the stressors that eventually lead to exhaustion. Failure by any coping strategy to deal with distress results in the development of burnout. Burned out medical students can experience disengagement. Disengagement is a psychological state characteristically exhibited through an individual's disinterest, indolence and loss of enthusiasm towards work (Senderayi, 2021). Given the seriousness of burnout, it is crucial for medical students to understand how burnout develops to better handle it without resorting to helplessness, losing interest in one's work or and resigning oneself to fate. For disengaged medical students to cope with distress, lecturers, universities counsellors and student peers trained on peer-to-peer counselling are expected to lead in the motivation and encouragement of the disengaged medical student.

Component 8: A psychological well-functioning individual

At the centre of the proposed model is a psychologically well-functioning individual who is distress free, an individual who is able to manage distress and its attendant negative outcomes.

For one to achieve the distress free status, one needs to identify the stressors, react to stressors in a positive way. A psychologically well-functioning individual is expected to use adaptive coping strategies such as problem-focused and emotion-focused coping strategies to deal with stress while avoiding the potentially maladaptive coping style, which has short-term relief. Medical students should also seek encouragement when they feel disengaged and less motivated to attend to their studies. Lastly, they should engage in relaxation activities such as sleeping to manage distress.

Having proposed the model of distress and coping for medical students at medical schools in Zimbabwe, the next section presents contribution made by the present study.

6.9 CONTRIBUTION OF THE STUDY

The present study is, to the researcher's knowledge, the first in Zimbabwe to investigate the sources and levels of distress among medical students at the two newly established medical schools in Zimbabwe. Using the perspectives and experiences of the medical students to understand sources of distress, the study contributes to the understanding of distress in the medical training schools and recommend adaptive ways of managing distress. Despite the limitations highlighted in Chapter 1, the present study makes a case for the understanding of specific stressors for medical students undergoing the medical degree programme. The study further highlights specific adaptive coping strategies, which medical students can use to curb distress.

Further, knowledge gained from this study may go a long way in informing a user-friendly curriculum to be adopted in teaching the medical degree programme. The study may also improve psychological knowledge regarding the various stressors found at the medical schools and make recommendations for the management of the identified stressors. Lastly, the study may help those students already suffering silently from the effects of distress to open up, discard maladaptive ways of coping and adopt the adaptive strategies highlighted in this study (religious coping, seeking emotional, and acceptance of the distressing situation).

6.10 FINAL COMMENTS

The study successfully identified sources of distress among medical students at the two newly established medical schools in Zimbabwe. Academic workload, poor financial status, personal life events and witnessing dying patients were found to positively correlate with distress among medical students. In terms of levels of distress, it emerged that distress decreased as grade

levels of medical students increased. Put simply, first year students experienced more distress compared to their counterparts in the last years of the study. In terms of the coping strategies used by medical students, it emerged that the majority of the students used the emotion-focused strategy more than they used problem-focused coping or potentially maladaptive emotion-focused coping. The emotion coping strategy frequently used by medical students include religious coping, seeking emotional support and acceptance coping. For effective management of distress, the present study proposed a distress and coping model for medical students undergoing medical training at medical schools. The proposed model sits on a tripod stand comprising sources of distress, coping and burnout. Lastly, the present study makes recommendations for further studies focusing on distress.

REFERENCES

- Abdulghani, H. M., AlKanhal, A. A., Mahmoud, E. S., Ponnampereuma, G. G., & Alfariis, E. A. (2011). Stress and its effects on medical students: a cross-sectional study at a college of medicine in Saudi Arabia. *Journal of Health, Population, and Nutrition*, 29(5), 516-522.
- Abiola, T., Lawal, I., & Habib, Z. G. (2015). Psychological distress due to academic stress among clinical students in a Nigerian tertiary institution: Comparison between medical and physiotherapy students. *Nigerian Journal of Basic and Clinical Sciences*, 12(2), 81-85.
- Abouammah, N., Irfan, F., Marwa, I., Zakria, N., & AlFariis, E. (2020). Stress among medical students and its consequences on health: A qualitative study. *Biomedical Research*, 31(1), 1-8.
- Adams, S. K., Murdock, K. K., Daly-Cano, M., & Rose, M. (2020). Sleep in the social world of college students: Bridging interpersonal stress and fear of missing out with mental health. *Behavioral Sciences*, 10(2), 54-68.
- Afshan, G., Ahmed, F., Anwer, N., & Khuhro, M. A. (2022). COVID-19 Stress and Well-being: A Phenomenological Qualitative Study of Pakistani Medical Doctors. *Frontiers in Psychology*, 6(1) 1-16.
- Agbaria, Q., & Abu-Mokh, A. J. (2022). The use of religious and personal resources in coping with stress during COVID-19 for Palestinians. *Current Psychology*, 5(3), 1-13.
- Agteren, J., Woodyatt, L., Iasiello, M., Rayner, J., & Kyrios, M. (2019). Make it measurable: Assessing psychological distress, wellbeing and resilience at scale in Higher Education. *Student Success*, 10(3), 233-245.
- Akyol, C., Celik, S. U., Koc, M. A., Bayindir, D. S., Gocer, M. A., Karakurt, B., ... & Simsek, F. A. (2022). The Impact of Patient Deaths on General Surgeons' Psychosocial Well-Being and Surgical Practices. *Frontiers in Surgery*, 9(2), 1-20
- Alotiby, A. A. (2022). The Correlation between Stress Levels among Undergraduate Medical Students and Their Motivation for Studying Medicine. *Education Research International*, 2 (1), 22-32
- Alotiby, A., Almaghrabi, M., Alosaimy, R., Alharthi, A., Khawandanah, B., Alansari, R., ... & Zamil, G. (2021). Learning Environment Quality for Medical Students at Umm Al-Qura University: A Comprehensive Study on Stressors, Sources, and Solutions After Introduction of a New Bachelor of Medicine and Bachelor of Surgery (MBBS) Curriculum. *Advances in Medical Education and Practice*, 12(2), 14-37.
- Al Hourri, H. N., Jomaa, S., Arrouk, D. M. N., Nassif, T., Al Ata Allah, M. J., Al Hourri, A. N., & Latifeh, Y. (2023). The prevalence of stress among medical students in Syria and its association with social support: a cross-sectional study. *BMC psychiatry*, 23(1), 1-13.

- Almutairi, H., Alsubaiee, A., Abduljawad, S., Alshatti, A., Fekih-Romdhane, F., Husni, M., & Jahrami, H. (2022). Prevalence of burnout in medical students: A systematic review and meta-analysis. *International Journal of Social Psychiatry*, 68(6), 1157-1170.
- Al-Rouq, F., Al-Otaibi, A., AlSaikhan, A., Al-Essa, M., & Al-Mazidi, S. (2022). Assessing Physiological and Psychological Factors Contributing to Stress among Medical Students: Implications for Health. *International Journal of Environmental Research and Public Health*, 19(24), 16-22.
- Amass, T., Van Scoy, L. J., Hua, M., Ambler, M., Armstrong, P., Baldwin, M. R., ... & Curtis, J. R. (2022). Stress-related disorders of family members of patients admitted to the intensive care unit with COVID-19. *JAMA internal medicine*, 182(6), 624-633.
- Anderson, G. S., Litzenger, R., & Plecas, D. (2002). Physical evidence of police officer stress. *Policing: An international journal of police strategies & management*, 25(2), 399-420.
- Annous, I. (2017). Homework is associated with anxiety in students. Washington DC
- Arip, M. M., Kamaruzaman, D. N., Roslan, A., Ahmad, A., Rahman, M. A., & Malim, T. (2015). Development, validity and reliability of student stress inventory (SSI). *The Social Sciences*, 10(7), 1631-1638.
- Atta, I. S., & Almilaibary, A. (2022). The Prevalence of Stress among Medical Students Studying an Integrative Curriculum during the COVID-19 Pandemic. *Advances in Medical Education and Practice*, 13(2), 35-53.
- Atta, I. S., & Almilaibary, A. (2022). The Prevalence of Stress among Medical Students Studying an Integrative Curriculum during the COVID-19 Pandemic. *Advances in Medical Education and Practice*, 13 (2) 35-47.
- Balucan, L. E., Sanico, M. C. T., Ponce, P. X. S., & Cabaron, J. B. (2021). Stressor and Coping Strategies among Accountancy Students during Covid-19 Pandemic.
- Balogun, J. A. (2020). *Healthcare education in Nigeria: Evolutions and emerging paradigms*. Routledge.
- Bamuhair, S. S., Al Farhan, A. I., Althubaiti, A., Agha, S., & Ibrahim, N. O. (2015). Sources of stress and coping strategies among undergraduate medical students enrolled in a problem-based learning curriculum. *Journal of Biomedical Education*, 20(1)145-154.
- Barbayannis, G., Bandari, M., Zheng, X., Baquerizo, H., Pecor, K., & Ming, X. (2022). Academic Stress and Mental Well-Being in College Students: Correlations, Affected Groups, and COVID-19. *Frontiers in Psychology*, 13(2)1-10
- Basit, T. (2003). Manual or electronic? The role of coding in qualitative data analysis. *Educational research*, 45(2), 143-154.
- Basnet, B., Jaiswal, M., Adhikari, B., & Shyangwa, P. M. (2012). Depression among undergraduate medical students. *Kathmandu university medical journal*, 10(3), 56-59.

- Bedewy, D., & Gabriel, A. (2015). Examining perceptions of academic stress and its sources among university students: The Perception of Academic Stress Scale. *Health psychology open*, 2(2), 329 -340. <http://doi:10.1177/2055102915596714>
- Benbassat, J., Baumal, R., Chan, S., & Nirel, N. (2011). Sources of distress during medical training and clinical practice: Suggestions for reducing their impact. *Medical teacher*, 33(6), 486-490.
- Bergen, N., & Labonté, R. (2020). “Everything is perfect, and we have no problems”: detecting and limiting social desirability bias in qualitative research. *Qualitative health research*, 30(5), 783-792.
- Bergmann, C., Muth, T., & Loerbroks, A. (2019). Medical students’ perceptions of stress due to academic studies and its interrelationships with other domains of life: a qualitative study. *Medical education online*, 24(1), 160-176
- Berjot, S., & Gillet, N. (2011). Stress and coping with discrimination and stigmatization. *Frontiers in psychology*, 2, 33-45.
- Bible, H. (2007). New International Version, (Holy Bible). *Australia. Author.*
- Bilgin, A. A., Rowe, A. D., & Clark, L. (2017). Academic Workload Implications of Assessing Student Learning in Work-Integrated Learning. *Asia-Pacific Journal of Cooperative Education*, 18(2), 167-183
- Bispo-Júnior, J. P. (2022). Social desirability bias in qualitative health research. *Revista de Saúde Pública*, 56, 27-40
- Boyd, E. (2019). *A convergent parallel mixed method study on the experience of coping during high-risk pregnancy and prescribed bed rest*. Texas Woman's University.
- Broks, V. M., Stegers-Jager, K. M., van der Waal, J., van den Broek, W. W., & Woltman, A. M. (2022). Medical students’ crisis-induced stress and the association with social support. *Plos one*, 17(12), e0278577.
- Brown, A. L., & Blankson, N. (2013). Developing the College Student Stress Inventory for Black Women (CSSI-BW). *Papers & Publications: Interdisciplinary Journal of Undergraduate Research*, 2(1), 7-15
- Buizza, C., Bazzoli, L., & Ghilardi, A. (2022). Changes in College Students Mental Health and Lifestyle during the COVID-19 Pandemic: A Systematic Review of Longitudinal Studies. *Adolescent Research Review*, 7(4), 537-550.
- Cadaret, M. C., & Bennett, S. R. (2019). College Students' Reported Financial Stress and Its Relationship to Psychological Distress. *Journal of College Counseling*, 22(3), 225-239.
- Campbell, R., Soenens, B., Beyers, W., & Vansteenkiste, M. (2018). University students’ sleep during an exam period: The role of basic psychological needs and stress. *Motivation and Emotion*, 42, 671-681.

- Campbell, F., Blank, L., Cantrell, A., Baxter, S., Blackmore, C., Dixon, J., & Goyder, E. (2022). Factors that influence mental health of university and college students in the UK: a systematic review. *BMC Public Health*, 22(1), 1-22.
- Carver, C. S. (2013). COPE Inventory. Measurement instrument database for the social science. Retrieved from www.midss.i
- Chamberlin, K., Yasué, M., & Chiang, I. C. A. (2018). The impact of grades on student motivation. *Active Learning in Higher Education*, 14 (2), 69-78.
- Chang, S., Lee, H. Y., Anderson, C., Lewis, K., Chakraverty, D., & Yates, M. (2022). Intervening on impostor phenomenon: prospective evaluation of a workshop for health science students using a mixed-method design. *BMC Medical Education*, 22(1), 1-10.
- Chireshe, R & Mapfumo, J. (2003). Sources and levels of stress among teachers in Zimbabwe, ZBTE (12)(2), Harare, Mt. Pleasant: DTE
- Cho, C., Ko, W. Y., Ngan, O. M., & Wong, W. T. (2022). Exploring Professionalism Dilemma and Moral Distress through Medical Students' Eyes: A Mixed-Method Study. *International Journal of Environmental Research and Public Health*, 19(17), 1-18.
- Chuan, C. L., & Penyelidikan, J. (2006). Sample size estimation using Krejcie and Morgan and Cohen statistical power analysis: A comparison. *Jurnal Penyelidikan IPBL*, 7(1), 78-86.
- Cipra, C., & Müller-Hilke, B. (2019). Testing anxiety in undergraduate medical students and its correlation with different learning approaches. *PloS one*, 14(3)
- Collins, K. M., & O'cathain, A. (2009). Introduction: Ten points about mixed methods research to be considered by the novice researcher. *International Journal of Multiple Research Approaches*, 3(1), 2-7.
- Connelly, L. M. (2016). Trustworthiness in qualitative research. *Medsurg Nursing*, 25(6), 435-437.
- Cook, C. J., & Crewther, B. T. (2019). The impact of a competitive learning environment on hormonal and emotional stress responses and skill acquisition and expression in a medical student domain. *Physiology & behavior*, 199, 252-257.
- Cooper, C., & Dewe, P. (2004). Managing workplace stress. *Science and Public Affairs-London-*, 4-5.
- Corden, A., Hirst, M., & Nice, K. (2008). Financial Implications of Death of a Partner: Annexes to chapters 3-6: Statistical data and analysis.
- Crabtree, S. A., & Harris, S. M. (2020). The lived experience of ambiguous marital separation: A phenomenological study. *Journal of marital and family therapy*, 46(3), 385-398.
- Creswell, J. W. (2009). Research design: Qualitative and mixed methods approaches. *London and Thousand Oaks: Sage Publications*.

- Creswell, J. W., & Creswell, J. D. (2017). *Research design: Qualitative, quantitative, and mixed methods approaches*. Sage publications.
- Creswell, J.W., & Poth, C.N. (2017). *Qualitative inquiry and research design: Choosing among five approaches*. Sage Publications.
- Crosswell, A. D., & Lockwood, K. G. (2020). Best practices for stress measurement: How to measure psychological stress in health research. *Health psychology open*, 7(2), 20-55.
- Davies, M. (2016). Death is part of a doctor's job. *BMJ*, 355(4), 16-32.
- Darling, C. A., McWey, L. M., Howard, S. N., & Olmstead, S. B. (2007). College student stress: The influence of interpersonal relationships on sense of coherence. *Stress and Health: Journal of the International Society for the Investigation of Stress*, 23(4), 215-229.
- Dartey, A. F., Phetlhu, D. R., & Phuma-Ngaiyaye, E. (2019). Reducing the effects of maternal death: midwives' strategies. *International Journal of Health Sciences and Research*, 9(2), 128-138.
- Deasy, C., Coughlan, B., Pironom, J., Jourdan, D., & Mannix-McNamara, P. (2014). Psychological distress and coping amongst higher education students: A mixed method enquiry. *Plos one*, 9(12)
- Dekeza, C. (2018). *The responsiveness of rural primary schools to the needs of orphaned and vulnerable children in Zimbabwe* (Doctoral dissertation).
- Demir, S. B., & Pismek, N. (2018). A Convergent Parallel Mixed-Methods Study of Controversial Issues in Social Studies Classes: A Clash of Ideologies. *Educational Sciences: Theory and Practice*, 18(1), 119-149.
- Donoghue, K. J. (2004). *Measuring coping: evaluating the psychometric properties of the cope*. Edith Cowan University.
- Drapeau, A., Marchand, A., & Beaulieu-Prévost, D. (2012). Epidemiology of psychological distress. *Mental Illnesses understanding, prediction and control LAbate L, editor. INTECH*, 105-134.
- du Plooy-Cilliers, F., Davis, C., & Bezuidenhout, R. (2014). Research matters. *Cape Town: Juta*, (6)(3), 25-31.
- Dubow, E. F., Rubinlicht, M., Brown, B. B., & Prinstein, M. J. (2011). Encyclopedia of adolescence.
- Dyrbye, L. N., Thomas, M. R., & Shanafelt, T. D. (2006). Systematic review of depression, anxiety, and other indicators of psychological distress among Canadian medical students and US. *Academic medicine*, 81(4), 354-373.

- Dyrbye, L. N., & Shanafelt, T. D. (2011). Commentary: medical student distress: a call to action. *Academic Medicine*, 86(7), 801-803.
- Dyrbye, L. N., Szydlo, D. W., Downing, S. M., Sloan, J. A., & Shanafelt, T. D. (2010). Development and preliminary psychometric properties of a well-being index for medical students. *BMC medical education*, 10(1), 8-15
- Dyrbye, L. N., Thomas, M. R., & Shanafelt, T. D. (2006). Systematic review of depression, anxiety, and other indicators of psychological distress among US and Canadian medical students. *Academic medicine*, 81(4), 354-373.
- Edjah, K., Ankomah, F., Domey, E., & Laryea, J. E. (2020). Stress and its impact on academic and social life of undergraduate university students in Ghana: A structural equation modeling approach. *Open Education Studies*, 2(1), 37-44.
- Eisenbeck, N., Carreno, D. F., & Uclés-Juárez, R. (2019). From psychological distress to academic procrastination: Exploring the role of psychological inflexibility. *Journal of Contextual Behavioral Science*, 13, 103-108.
- Elayan, N. T. F. (2021). Advantages and Disadvantages of University Online Learning from. *Middle East University*.
- El-Gilany, A. H., Amr, M., & Hammad, S. (2008). Perceived stress among male medical students in Egypt and Saudi Arabia: effect of sociodemographic factors. *Annals of Saudi medicine*, 28(6), 442-448.
- Elsalem, L., Al-Azzam, N., Jum'ah, A. A., Obeidat, N., Sindiani, A. M., & Kheirallah, K. A. (2020). Stress and behavioral changes with remote E-exams during the Covid-19 pandemic: A cross-sectional study among undergraduates of medical sciences. *Annals of Medicine and Surgery*, 60, 271-279.
- Fares, J., Al Tabosh, H., Saadeddin, Z., El Mouhayyar, C., & Aridi, H. (2016). Stress, burnout and coping strategies in preclinical medical students. *North American journal of medical sciences*, 8(2), 75.
- Feng, J., Jiang, H., Shen, X., Lei, Z., Li, L., Zhu, Y. ... & Gan, Y. (2022). Occupational stress and associated factors among general practitioners in China: a national cross-sectional study. *BMC Public Health*, 22(1), 1-8.
- Fernández-Ávalos, M. I., Fernández-Alcántara, M., Cruz-Quintana, F., Turnbull, O. H., Ferrer-Cascales, R., & Pérez-Marfil, M. N. (2023). Coping with Death and Bereavement: A Proactive Intervention Program for Adults with Intellectual Disability. *Journal of Mental Health Research in Intellectual Disabilities*, 3(1), 1-24.
- Fontana, M. C. P., Generoso, I. P., Sizilio, A., & Bivanco-Lima, D. (2020). Burnout syndrome, extracurricular activities and social support among Brazilian internship medical students: a cross-sectional analysis. *BMC medical education*, 20(1), 1-9.

- Fu, Y., Hu, D., & Liu, X. (2022). International Doctoral Students Negotiating Support from Interpersonal Relationships and Institutional Resources during COVID-19. *Current Issues in Comparative Education*, 24(1), 26-40.
- Frank, E., Elon, L., Naimi, T., & Brewer, R. (2008). Alcohol consumption and alcohol counselling behavior among US medical students: cohort study. *Bmj* (9)(3), 337-349.
- Fung, S. (2019). Psychometric evaluation of the Warwick –Edinburgh Mental Well-being Scale (WEMWBS) with Chinese University Students. *Health Quality Life Outcomes*, 17, 46. <http://doi:10.1186/s12955-019-1113-1>
- Gadzella, B. M., Baloglu, M., Masten, W. G., & Wang, Q. (2012). Evaluation of the Student Life-stress Inventory-Revised. *Journal of Instructional Psychology*, 39(2).
- Gallardo-Lolandes, Y., Alcas-Zapata, N., Flores, J. E. A., & Ocaña-Fernández, Y. (2020). Time Management and Academic Stress in Lima University Students. *International Journal of Higher Education*, 9(9), 32-40.
- Gellisch, M., Bablok, M., Morosan-Puopolo, G., Schäfer, T., & Brand-Saberi, B. (2023). Dynamically Changing Mental Stress Parameters of First-Year Medical Students over the Three-Year Course of the COVID-19 Pandemic: A Repeated Cross-Sectional Study. In *Healthcare* (Vol. 11 (11) 1558-1569).
- Ghaffari, M., Morowatisharifabad, M. A., Jadgal, M. S., Mehrabi, Y., & Alizadeh, S. (2021). The effectiveness of intervention based on the transactional model on improving coping efforts and stress moderators in hemodialysis patients in Tehran: a randomized controlled trial. *BMC nephrology*, 22, 1-11
- Goldman, J. A., & Bell, S. C. B. (2022). Student and Faculty Coping and Impacts on Academic Success in Response to COVID-19. *Journal of Interdisciplinary Studies in Education*, 11(1), 74-91.
- Goppert, S. A., & Pfof, M. (2021). Undergraduate students' perceived stress levels in summer term 2020—a comparison to preceding academic terms. *Frontiers in Psychology*, 12(1), 672-783.
- Granieri, A., Franzoi, I. G., & Chung, M. C. (2021). Psychological Distress among University Students. *Frontiers in Psychology*, 12 (1), 1-4.
- Greenland, S., Senn, S. J., Rothman, K. J., Carlin, J. B., Poole, C., Goodman, S. N., & Altman, D. G. (2016). Statistical tests, P values, confidence intervals, and power: a guide to misinterpretations. *European journal of epidemiology*, 31, 337-350.
- Greer, T. M. (2021). The Moderating Role of Coping Strategies in Understanding the Effects of Race-related Stress on Academic Self-concept for African American Students. *Journal of Negro Education*, 90(2), 224-235.
- Guest, G., Bunce, A., & Johnson, L. (2006). How many interviews are enough? An experiment with data saturation and variability. *Field methods*, 18(1), 59-82.

- Guetterman, T.C., Fetters, M.D. and Creswell, J.W., (2015). Integrating quantitative and qualitative results in health science mixed methods research through joint displays. *The Annals of Family Medicine*, 13(6), 554-561.
- Gungor, A., Young, M. E., & Sivo, S. A. (2021). Negative Life Events and Psychological Distress and Life Satisfaction in US College Students: The Moderating Effects of Optimism, Hope, and Gratitude. *Journal of Pedagogical Research*, 5(4), 62-75.
- Gust, D. A., Gvetadze, R., Furtado, M., Makanga, M., Akelo, V., Ondenge, K., ... & McLellan-Lemal, E. (2017). Factors associated with psychological distress among young women in Kisumu, Kenya. *International Journal of Women's Health*, 9 (4) 255-265.
- Haardt, V., Cambriel, A., Hubert, S., Tran, M., Bruel, C., & Philippart, F. (2022). General practitioner residents and patients end-of life: involvement and consequences. *BMC Medical Ethics*, 23(1), 1-11.
- Hafsa, N. E. (2019). Mixed methods research: An overview for beginner researchers. *Journal of Literature, Languages and Linguistics*, 58(1), 45-48.
- Hammer, C. S. (2011). The importance of participant demographics. *American Journal of Speech-Language Pathology*, 20(4), 261-275.
- Hariharan, M., & Rath, R. (2008). *Coping with life stress: The Indian experience*. SAGE Publications India.
- Harrell, M. C., & Bradley, M. A. (2009). *Data collection methods. Semi-structured interviews and focus groups*. Rand National Defense Research Inst santa monica ca.
- Harris, J. R. (2020). An examination of the transaction approach in occupational stress research. In *Occupational Stress* (pp. 21-28). CRC Press.
- Hassanzadeh, A., Heidari, Z., Feizi, A., Hassanzadeh Keshteli, A., Roohafza, H., Afshar, H., & Adibi, P. (2017). Association of stressful life events with psychological problems: a large-scale community-based study using grouped outcomes latent factor regression with latent predictors. *Computational and mathematical methods in medicine*, 4(3), 29-44.
- Heale, R., & Twycross, A. (2015). Validity and reliability in quantitative studies. *Evidence-based nursing*, 18(3), 66-67.
- Heckman, S., Lim, H., & Montalto, C. (2014). Factors related to financial stress among college students. *Journal of Financial Therapy*, 5(1) 77-89.
- Heinen, I., Bullinger, M., & Kocalevent, R. D. (2017). Perceived stress in first year medical students-associations with personal resources and emotional distress. *BMC Medical Education*, 17(1), 1-14.
- Henao-Castaño, Á. M., & Quiñonez-Mora, M. A. (2019). Afrontamiento de las enfermeras ante la muerte del paciente en la Unidad de Cuidado Intensivo Pediátrico. *Enfermería Intensiva*, 30(4), 163-169.

- Hicks, S. (2021). *Financial Stress in Undergraduate Students* (Doctoral dissertation, Walden University).
- Hill, M. R., Goicochea, S., & Merlo, L. J. (2018). In their own words: stressors facing medical students in the millennial generation. *Medical education online*, 23(1), 530-558.
- Ho, C.Y., Kow, C.S., Chia, C.H.J. et al. (2020). The impact of death and dying on the personhood of medical students: a systematic scoping review. *BMC Med Educ* 20(2) 516-528.
- Holton, M. K., Barry, A. E., & Chaney, J. D. (2016). Employee stress management: An examination of adaptive and maladaptive coping strategies on employee health. *Work*, 53(2), 299-305.
- Hope, V., & Henderson, M. (2014). Medical student depression, anxiety and distress outside North America: a systematic review. *Medical education*, 48(10), 963-979.
- Howarth, E. J., O'Connor, D. B., Panagioti, M., Hodkinson, A., Wilding, S., & Johnson, J. (2020). Are stressful life events prospectively associated with increased suicidal ideation and behaviour? A systematic review and meta-analysis. *Journal of affective disorders*, 266, 731-742.
- Hossain, M. K., Mahfuz, T., Latif, S., & Hossain, M. E. (2023). Determinants of financial stress among university students and its impact on their performance. *Journal of applied research in higher education*, 15(1), 226-237.
- Hussain, S. F., Ahmad, S. R., Muslehuddin, O. M., & Muslehuddin, H. M. (2016). Knowledge, attitude and practice regarding hepatitis B among medical students. *International Journal of Community Medicine and Public Health*, 3(11), 2977-2981.
- Ibrahim, S. M., & Lobel, M. (2020). Conceptualization, measurement, and effects of pregnancy-specific stress: Review of research using the original and revised Prenatal Distress Questionnaire. *Journal of behavioural medicine*, 43(1), 16-33.
- Ivankova, N. V., Creswell, J. W., & Plano Clark, V. L. (2007). Foundations and approaches to mixed methods research. *First steps in research. Pretoria: Van Schaik*, 3(3), 253-282.
- Jackson, P. B., & Finney, M. (2002). Negative life events and psychological distress among young adults. *Social Psychology Quarterly*, 3(3), 186-201.
- January, J., Madhombiro, M., Chipamaunga, S., Ray, S., Chingono, A., & Abas, M. (2018). Prevalence of depression and anxiety among undergraduate university students in low- and middle-income countries: a systematic review protocol. *Systematic reviews*, 7(1), 57-65.
- Joaquim, R. M., Pinto, A. L., Guatimosim, R. F., de Paula, J. J., Costa, D. S., Diaz, A. P., ... & Malloy-Diniz, L. F. (2021). Bereavement and psychological distress during COVID-19 pandemics: The impact of death experience on mental health. *Current Research in Behavioural Sciences*, 7(2), 100-119.

- Johns, G., Samuel, V., & Waddington, L. (2022). Prevalence and predictors of mental health outcomes in UK doctors and final year medical students during the COVID-19 pandemic. *Journal of affective disorders*, 8(3), 43-58.
- Johnson, R. B., & Onwuegbuzie, A. J. (2004). Mixed methods research: A research paradigm whose time has come. *Educational researcher*, 33(7), 14-26.
- Jones, M. C., & Johnston, D. W. (1997). Distress, stress and coping in first-year student nurses. *Journal of Advanced Nursing*, 26(3), 475-482.
- Jones, P. J., Park, S. Y., & Lefevor, G. T. (2018). Contemporary college student anxiety: The role of academic distress, financial stress, and support. *Journal of College Counseling*, 21(3), 252-264.
- Kaiseler, M., Levy, A., Nicholls, A. R., & Madigan, D. J. (2019). The independent and interactive effects of the Big-Five personality dimensions upon dispositional coping and coping effectiveness in sport. *International Journal of Sport and Exercise Psychology*, 17(4), 410-426.
- Kalat, J. W. (2016). *Introduction to psychology*. Nelson Education.
- Khan, M. J., Altaf, S., & Kausar, H. (2013). Effect of Perceived Academic Stress on Students' Performance. *FWU Journal of Social Sciences*, 7(2) 23-45.
- Kaur, R., & Bashir, L. (2016). Impact of stress on mental health of students: Reasons and Interventions. *International Journal of Education*, 9(5), 30-35.
- Kelley, H. H., Lee, Y., LeBaron-Black, A., Dollahite, D. C., James, S., Marks, L. D., & Hall, T. (2022). Change in Financial Stress and Relational Wellbeing During COVID-19: Exacerbating and Alleviating Influences. *Journal of Family and Economic Issues*, 8(4) 1-19.
- Kenny, J., & Fluck, A. E. (2022). Life at the academic coalface: validation of a holistic academic workload estimation tool. *Higher Education*, 1-20.
- Keser, E., Kahya, Y., & Akın, B. (2020). Stress generation hypothesis of depressive symptoms in interpersonal stressful life events: The roles of cognitive triad and coping styles via structural equation modeling. *Current Psychology*, 39(1), 174-182.
- Kiger, M. E., & Varpio, L. (2020). Thematic analysis of qualitative data: AMEE Guide No. 131. *Medical teacher*, 42(8), 846-854.
- Koochaki, G. M., Charkazi, A., Hasanzadeh, A., Saedani, M., Qorbani, M., & Marjani, A. (2011). Prevalence of stress among Iranian medical students: a questionnaire survey. *Eastern Mediterranean Health Journal*, 17(7), 593-598.
- Korstjens, I., & Moser, A. (2018). Series: Practical guidance to qualitative research. Part 4: trustworthiness and publishing. *European Journal of General Practice*, 24(1), 120-124.

- Kothari, C. R. (2004). *Research methodology: Methods and techniques*. New Age International.
- Kubwimana, L., Mutatsineza, G., Tesi, L., & Wong, R. (2022). Assessing the stress level among medical students in Rwanda. *Open Journal of Psychiatry, 12*(2), 174-187.
- Kumar, S. (2016). Burnout and doctors: prevalence, prevention and intervention. In *Healthcare, Multidisciplinary Digital Publishing Institute*. (4(3), 37-56.
- Kumari, A., & Jain, J. (2014). Examination stress and anxiety: A study of college students. *Global journal of multidisciplinary studies, 4*(1), 31-40.
- Kwak, E., Park, S., & Ko, J. W. (2022). The Effects of Academic Stress and Upward Comparison on Depression in Nursing Students during COVID-19. In *Healthcare* (10) (10) 2091- 2099.
- Kyaw, T. M., Murthi, K., Aveliar, V., Anadan, T., Chelven, A. A. K., Abd Mun'em, F. ... & Mazlan, N. L. (2022). Assessment of Burnout & Stress among Medical & Non-medical Students Age 18 Years and Above in Malaysia. *Research Square, 5*(2), 14-29.
- Lane, A., McGrath, J., Cleary, E., Guerandel, A., & Malone, K. M. (2020). Worried, weary and worn out: mixed-method study of stress and well-being in final-year medical students. *BMJ open, 10*(12), 40-55.
- Landy, J. F., Shigeto, A., Laxman, D. J., & Scheier, L. M. (2022). Typologies of stress appraisal and problem-focused coping: associations with compliance with public health recommendations during the COVID-19 pandemic. *BMC Public Health, 22*(1), 784-796.
- Laranjeira, C., Moura, D., Salci, M. A., Carreira, L., Covre, E., Jaques, A., ... & Querido, A. (2022). A Scoping Review of Interventions for Family Bereavement Care during the COVID-19 Pandemic. *Behavioural Sciences, 12*(5), 155.
- Lazarus, R. S., & Folkman, S. (1984). *Stress, appraisal, and coping*. Springer publishing company.
- Leary, M. R. (2010). Affiliation, acceptance, and belonging: The pursuit of interpersonal connection. In S. T. Fiske, D. T. Gilbert, & G. Lindzey (Eds.), *Handbook of social psychology* (pp. 864–897).
- Lee, H. L., Wilson, K. S., Bernstein, C., Naicker, N., Yassi, A., & Spiegel, J. M. (2022). Psychological Distress in South African Healthcare Workers Early in the COVID-19 Pandemic: An Analysis of Associations and Mitigating Factors. *International journal of environmental research and public health, 19*(1), 1-20.
- Leombruni, P., Corradi, A., Lo Moro, G., Acampora, A., Agodi, A., Celotto, D., ... & PRIMES Collaborating Group. (2022). Stress in Medical Students: PRIMES, an Italian,

Multicenter Cross-Sectional Study. *International journal of environmental research and public health*, 19(9), 50-71.

- Li, M. H. (2008). Helping college students cope: Identifying predictors of active coping in different stressful situations. *Journal of Psychiatry, Psychology and Mental Health*, 2(1), 1-15.
- Li, Z., Yi, X., Zhong, M., Li, Z., Xiang, W., Wu, S., & Xiong, Z. (2021). Psychological distress, social support, coping style, and perceived stress among medical staff and medical students in the early stages of the COVID-19 epidemic in China. *Frontiers in Psychiatry*, 12 (2) 48-68.
- Lipscomb, M. (2011) Critical realism and realist pragmatism in mixed method research: the problematics of event identity and abductive inference. In: American Educational Research Association Conference 2011 (New Orleans - USA), New Orleans, Louisiana, USA, 8th - 12th April 2011. New Orleans, USA: UNSPECIFIED [Unpublished].
- Llanes-Castillo, A., Pérez-Rodríguez, P., Reyes-Valdéz, M. L., & Cervantes-López, M. J. (2022). Academic stress in undergraduate medical students. *Journal of Positive School Psychology*, 6(6), 802-810.
- Lopes, I. F., Meurer, A. M., & Colauto, R. D. (2020). Coping Strategies Adopted by Accounting Students. *Revista de Educação e Pesquisa em Contabilidade*, 14(2), 28-32
- Madhyastha, S., Latha, K. S., & Kamath, A. (2014). Stress and coping among final year medical students. *Hindu*, 95(4), 81-92.
- Maixenchs, M., Anselmo, R., Sanz, A., Castillo, P., Macete, E., Carrilho, C. ... & Munguambe, K. (2018). Healthcare providers' views and perceptions on post-mortem procedures for cause of death determination in southern Mozambique. *PLoS One*, 13(7), 58-65.
- Mamun, M. A., Akter, S., Hossain, I., Faisal, M. T. H., Rahman, M. A., Arefin, A. ... & Hossain, M. (2020). Financial threat, hardship and distress predict depression, anxiety and stress among the unemployed youths: A Bangladeshi multi-city study. *Journal of Affective Disorders*, 27(6), 1149-1158.
- Makelä, M., Möller, R., & Stephens, C. (2018). Educating doctors for the future—Evaluation of undergraduate medical education in Finland. *Finnish Education Evaluation Centre. Publications*, 14, 2018.
- Mapfumo, J., Mukwidzwa, F., & Chireshe, R. (2014). Sources and levels of stress among mainstream and special needs education teachers in Mutare Urban in Zimbabwe. *International Journal of Educational Sciences*, 6(2), 187-195.
- Margaret, K., Ngigi, S., & Mutisya, S. (2018). Sources of occupational stress and coping strategies among teachers in borstal institutions in Kenya. *Edelweiss Psyc Open Access*, 7(2), 18-27.

- Marjani, A., Gharavi, A. M., Jahanshahi, M., Vahidirad, A., & Alizadeh, F. (2008). Stress among medical students of Gorgan (South East of Caspian Sea), Iran. *Kathmandu University Medical Journal*, 6(3), 421-425.
- Masih, P. P., & Gulrez, N. K. (2006). Age and gender differences on stress. *Recent trends in human stress management*, 10(3), 97-104.
- Matheson, K. M., Barrett, T., Landine, J., McLuckie, A., Soh, N. L. W., & Walter, G. (2016). Experiences of psychological distress and sources of stress and support during medical training: a survey of medical students. *Academic Psychiatry*, 40(1), 63-68.
- McCloud, T., & Bann, D. (2019). Financial stress and mental health among higher education students in the UK up to 2018: rapid review of evidence. *J Epidemiol Community Health*, 73(10), 977-984.
- McKerrow, I., Carney, P. A., Caretta-Weyer, H., Furnari, M., & Miller Juve, A. (2020). Trends in medical students' stress, physical, and emotional health throughout training. *Medical Education Online*, 25(1), 170-188.
- Melaku, L., & Bulcha, G. (2021). Evaluation and Comparison of Medical Students Stressors and Coping Strategies among Undergraduate Preclinical and Clinical Year Students Enrolled in Medical School of Arsi University, Southeast Ethiopia. *Education Research International*, 2021, 1-12.
- Metz, A. L. (2018). *Hear Me When I'm Well: A Convergent Parallel Mixed Methods Study of Psychiatric Advance Directives in Virginia* (Doctoral dissertation, James Madison University).
- Melese, B., Bayu, B., Wondwossen, F., Tilahun, K., Lema, S., Ayehu, M., & Loha, E. (2016). Prevalence of mental distress and associated factors among Hawassa University medical students, Southern Ethiopia: a cross-sectional study. *BMC research notes*, 9(1), 485-496.
- Mittal, R., & Kumar, R. (2018). Exam stress in MBBS students and the methods used for its alleviation. *Int J Med Dental Sci*, 7(3), 160-178.
- Mishra, J., Samanta, P., Panigrahi, A., Dash, K., Behera, M. R., & Das, R. (2023). Mental health status, coping strategies during Covid-19 pandemic among undergraduate students of healthcare profession. *International Journal of Mental Health and Addiction*, 21(1), 562-574.
- Modis, T. P., Mokgaola, I. O., & Sehularo, L. A. (2021). Coping mechanisms used by the families of mental health care users in Mahikeng sub-district, North West province. *Health SA Gesondheid (Online)*, 26, 1-8.
- Mohamad, N. E., Sidik, S. M., Akhtari-Zavare, M., & Gani, N. A. (2021). The prevalence risk of anxiety and its associated factors among university students in Malaysia: a national cross-sectional study. *BMC public health*, 21(1), 1-12.
- Morgan, D. W., & Krejcie, R. V. (1970). Determining sample size for research activities. *Educational and psychological measurement*, 30(3), 607-620.

- Morrow, S. L. (2005). Quality and trustworthiness in qualitative research in counseling psychology. *Journal of counseling psychology*, 52(2), 250-265.
- Mooney, D. C. (2002). Nurses and post-mortem care: A study of stress and the ways of coping [doctoral dissertation]. *Griffith University, Southport, Queensland, Australia*.
- Mudhovozi, P. (2012). Social and academic adjustment of first-year university students. *Journal of Social Sciences*, 33(2), 251-259.
- Mustafa, S. H., Mohammed, E. A., Makkawi, S. T., & Mohammed, Y. Y. (2022). Mental Distress among Medical Students in Khartoum, Sudan 2022. *Open Journal of Psychiatry*, 12(4), 345-358.
- Mutambara, J. (2016). Prevalence of suicidal ideation and hopelessness among students at a state university in Zimbabwe. *Midland State University*
- Nandamuri, P., & Gowthami, C. (2011). Sources of academic stress—A study on management students. *Journal of Management and Science*, 1(2), 31-42.
- Neto, M. L. R., Almeida, H. G., Esmeraldo, J. D. A., Nobre, C. B., Pinheiro, W. R., de Oliveira, C. R. T., ... & Lima, C. K. T. (2020). When health professionals look death in the eye: the mental health of professionals who deal daily with the 2019 coronavirus outbreak. *Psychiatry Research*, 18(8) 112-123.
- Ngasa, S. N., Sama, C. B., Dzekem, B. S., Nforchu, K. N., Tindong, M., Aroke, D., & Dimala, C. A. (2017). Prevalence and factors associated with depression among medical students in Cameroon: a cross-sectional study. *BMC psychiatry*, 17(1), 216-227.
- Nikolis, L., Wakim, A., Adams, W., & DO, P. B. (2021). Medical student wellness in the United States during the COVID-19 pandemic: a nationwide survey. *BMC medical education*, 21(1), 1-9.
- Niedobylski, S., Michta, K., Wachoł, K., Niedziałek, K., Łopuszańska, U., Samardakiewicz, M., & Próchnicki, M. (2022). Academic burnout, self-esteem, coping with stress and gratitude among Polish medical students—a cross sectional study. *Current Problems of Psychiatry*.
- Noone, P. A. (2017). The Holmes–Rahe Stress Inventory. *Occupational Medicine*, 67(7), 581-582.
- Oaklander, M. (2016). New ways to improve well-being at work. *Time*, 187(9), 25-35.
- Obbarius, N., Fischer, F., Liegl, G., Obbarius, A., & Rose, M. (2021). A modified version of the transactional stress concept according to Lazarus and Folkman was confirmed in a psychosomatic inpatient sample. *Frontiers in psychology*, 12 (1) 24-33.
- Ogunsemi, O. O., Afe, T., Odusan, O., Oguntona, S. A., Adefuye, B. O., & Oyelekan, A. A. A. (2013). Psychological well-being of medical students in a state university, Nigeria. *Research Journal of Health Sciences*, 1(1), 90-98.

- O'Hara, K. L., Grinberg, A. M., Tackman, A. M., Mehl, M. R., & Sbarra, D. A. (2020). Contact with an ex-partner is associated with psychological distress after marital separation. *Clinical Psychological Science*, 8(3), 450-463.
- Otaki, F., AlHashmi, D., Khamis, A. H., & Azar, A. J. (2023). Investigating the evolution of undergraduate medical students' perception and performance in relation to an innovative curriculum-based research module: A convergent mixed methods study launching the 8A-Model. *Plos one*, 18(1), 280-310.
- Oura, M. J., Moreira, A. R., & Santos, P. (2020). Stress among Portuguese medical students: a national cross-sectional study. *Journal of Environmental and Public Health*, 20 (2) 1-20.
- Ozamiz-Etxebarria, N., Dosil-Santamaria, M., Picaza-Gorrochategui, M., & Idoiaga-Mondragon, N. (2020). Stress, anxiety, and depression levels in the initial stage of the COVID-19 outbreak in a population sample in the northern Spain. *Cadernos de saude*
- Preston, R., Gratani, M., Owens, K., Roche, P., Zimanyi, M., & Malau-Aduli, B. (2020). Exploring the impact of assessment on medical students' learning. *Assessment & Evaluation in Higher Education*, 45(1), 109-124.
- Palička, M., Rybář, M., Mechúrová, B., Paličková, N., Sobelová, T., Pokorná, K., & Cvek, J. (2023). The influence of excessive stress on medical students in the Czech Republic—national sample. *BMC Medical Education*, 23(1), 168-178.
- Patel, R. S., Bachu, R., Adikey, A., Malik, M., & Shah, M. (2018). Factors related to physician burnout and its consequences: a review. *Behavioral sciences*, 8(11), 98-107.
- Pelissier, C., Viale, M., Berthelot, P., Poizat, B., Massoubre, C., Tiffet, T., & Fontana, L. (2021). Factors Associated with Psychological Distress in French Medical Students during the COVID-19 Health Crisis: A Cross-Sectional Study. *International Journal of Environmental Research and Public Health*, 18(2), 1-16.
- Petersen, I. H., Louw, J., & Dumont, K. (2009). Adjustment to university and academic performance among disadvantaged students in South Africa. *Educational Psychology*, 29(1), 99-115.
- Pienaar, C. (2009). Is the academic work role still sustainable?. *Tydskrif vir Geesteswetenskappe*, 49(2), 251-267.
- Preston, R., Gratani, M., Owens, K., Roche, P., Zimanyi, M., & Malau-Aduli, B. (2020). Exploring the impact of assessment on medical students' learning. *Assessment & Evaluation in Higher Education*, 45(1), 109-124.
- Prins, S., Linn, A. J., van Kaam, A. H., van de Loo, M., van Woensel, J. B., van Heerde, M., ... & de Vos, M. A. (2022). How physicians discuss uncertainty with parents in intensive care units. *Pediatrics*, 149(6), 98-110
- Promsri, C. (2019). Measuring Life Stress of Accounting Students. *Saudi Journal of Humanities and Social Sciences*, 4(11), 693-696.

- Posselt, J. R., & Lipson, S. K. (2016). Competition, anxiety, and depression in the college classroom: Variations by student identity and field of study. *Journal of College Student Development, 57*(8), 973-989.
- Portoghese, I., Porru, F., Galletta, M., Campagna, M., & Burdorf, A. (2020). Stress among medical students: factor structure of the University Stress Scale among Italian students. *BMJ open, 10*(9), 35-55.
- Quince, T. A., Wood, D. F., Parker, R. A., & Benson, J. (2012). Prevalence and persistence of depression among undergraduate medical students: a longitudinal study at one UK medical school. *BMJ open, 2*(4), 67-73.
- Rafique, N., Al-Asoom, L. I., Latif, R., Al Sunni, A., & Wasi, S. (2019). Comparing levels of psychological stress and its inducing factors among medical students. *Journal of Taibah University Medical Sciences, 14*(6), 488-494.
- Ragab, E. A., Dafallah, M. A., Salih, M. H., Osman, W. N., Osman, M., Miskeen, E. ... & Ahmed, M. H. (2021). Stress and its correlates among medical students in six medical colleges: an attempt to understand the current situation. *Middle East Current Psychiatry, 28*(1), 1-10.
- Rajanayagam, B. (2020). Effect of Examination Stress and its Consequences in Dental Students. *European Journal of Molecular & Clinical Medicine, 7*(9), 748-754.
- Rahi, S. (2017). Research design and methods: A systematic review of research paradigms, sampling issues and instruments development. *International Journal of Economics & Management Sciences, 6*(2), 1-5.
- Rahman, A., & Muktadir, M. G. (2021). SPSS: an imperative quantitative data analysis tool for social science research. *Int. J. Res. Innov. Soc. Sci, 5*(2), 300-302.
- Rahman, N. I. A., Ismail, S., Ali, R. M., Alattraqchi, A. G., Dali, W. P. E. W., Umar, B. U., ... & Haque, M. (2015). Stress among first batch of MBBS students of Faculty of Medicine and Health Sciences, Universiti Sultan Zainal Abidin, Malaysia: when final professional examination is knocking the door. *Int Med J, 22*(4), 1-6.
- Rammouz, I., Lahlou, L., Salehddine, Z., Eloumary, O., Laaraj, H., Ouhamou, M., ... & Boujraf, S. (2023). Religiosity, stress, and depressive symptoms among nursing and medical students during the middle stage of the COVID-19 pandemic: A cross-sectional study in Morocco. *Frontiers in Psychiatry, 14* (1), 34-45
- Rani, M. J. J. (2017). Academic Stress among School Students Writing Board Exam. *International Journal for Advance Research and Development, 2*(1) 54-66.
- Reddy, K. J., Menon, K. R., & Thattil, A. (2018). Academic stress and its sources among university students. *Biomedical and pharmacology journal, 11*(1), 531-537.

- Robinson, L. E., Valido, A., Drescher, A., Woolweaver, A. B., Espelage, D. L., LoMurray, S. ... & Dailey, M. M. (2023). Teachers, stress, and the COVID-19 pandemic: A qualitative analysis. *School mental health, 15*(1), 78-89.
- Rolland, F., Hadouiri, N., Haas-Jordache, A., Gouy, E., Mathieu, L., Goulard, A., & Frajerman, A. (2022). Mental health and working conditions among French medical students: A nationwide study. *Journal of affective disorders, 306*, 124-130.
- Reneflot, A., Oien-Odegaard, C., & Hauge, L. J. (2020). Marital separation and contact with primary healthcare services for mental health problems: a register-based study. *BMC psychology, 8*(1), 1-8.
- Rosenthal, S., Schlussek, Y., Yaden, M., DeSantis, J., Traves, K., Pohl, C., & Hojat, M. (2021). Persistent impostor phenomenon is associated with distress in medical students. *Family Medicine, 53*(2), 118-122.
- Russell, A., Thursby, K., Aubele-Futch, T., & Stoddart, R. (2021). Negative affect and performance on exam day in college students: The role of self-regulation. *Student Success, 12*(1), 35-46.
- Saat, N. Z. M., Sazlina, K., Siti Aishah, H., Ghazali, A. R., Dzairudzee, R., Nur Zaidah, Z., ... & ACWMR, W. (2015). Relationship between Co-Curriculum Activity, Stress and Academic Performance among University Student. In *Proceedings of the 3rd International Conference on Business, Law and Corporate Social Responsibility (ICBLCSR'15) May (15*(3), 5-6).
- Saha, R., Huebner, E. S., Hills, K. J., Malone, P. S., & Valois, R. F. (2014). Social coping and life satisfaction in adolescents. *Social Indicators Research, 115*(1), 241–252.
- Saias, T., Du Roscoät, E., Véron, L., Guignard, R., Richard, J. B., Legleye, S., ... & Beck, F. (2014). Psychological distress in French college students: demographic, economic and social stressors. Results from the 2010 National Health Barometer. *BMC public health, 14*(1), 256- 264.
- Saliya, C. A. (2023). Mixed Methods Strategy. In *Doing Social Research and Publishing Results: A Guide to Non-native English Speakers* (pp. 313-316). Singapore: Springer Nature Singapore.
- Smith, R. A., Brown, M. G., Grady, K. A., Sowl, S., & Schulz, J. M. (2022). Patterns of undergraduate student interpersonal interaction network change during the COVID-19 pandemic. *AERA Open, 8* (2), 233-285.
- Saunders, M., Lewis, P., & Thornhill, A. (2019). Research methods for business students. 8th. Harlow, Essex: Pearson.
- Schwarzer, R., & Luszczynska, A. (2012). Stressful life events. *Handbook of Psychology, Second Edition, 9*.
- Senderayi, P. (2021). Personality as a predictor of job stress among teachers' college lecturers in Zimbabwe. (Doctoral Thesis – University of Kwa-Zulu Natal). ukzn-dspace.ukzn.ac.za.

- Senocak, S. U., & Demirkiran, F. (2020). Subjective well-being and influencing factors in Turkish nursing students: A cross-sectional study. *Journal of the Pakistan Medical Association*, *70*(4), 630–635.
- Seo, E. H., Kim, S. G., Kim, S. H., Kim, J. H., Park, J. H., & Yoon, H. J. (2018). Life satisfaction and happiness associated with depressive symptoms among university students: A cross-sectional study in Korea. *Annals of General Psychiatry*, *17*(1), 52-66.
- Seun-Fadipe, C. T., & Mosaku, K. S. (2017). Sleep quality and psychological distress among undergraduate students of a Nigerian university. *Sleep health*, *3*(3), 190-194.
- Shah, N., Cader, M., Andrews, B., McCabe, R., & Stewart,-Brown, S.L (2021). Short Warwick –Edinburgh Mental Well-being Scale (WEMWBS): performance in a clinical sample in relation to PHQ-9 and GAD-7. *Health Quality Life Outcomes*, *19*(2), 260-273.
- Shakthivel, N., Amarnath, V. M., Ahamed, F., Rath, R. S., Sethuraman, A. R., & Suliankatchi, R. A. (2017). Level of Perceived Stress and Coping Strategies Prevailing Among 1st year Medical Undergraduate Students: A Cross-sectional Study from South Indi. *International Journal of Medicine and Public Health*, *7*(2), 312-325.
- Shapiro, E. S. (2011). *Academic skills problems: Direct assessment and intervention*. Guilford Press.
- Shpakou, A., Krajewska-Kułak, E., Cybulski, M., Seredocha, I., Tałaj, A., Andryszczyk, M., ... & Modzelewski, R. (2022). Stress Perception and Coping Strategies of Students on Both Sides of the EU's Eastern Border during the COVID-19 Pandemic. *International Journal of Environmental Research and Public Health*, *19*(16), 102-125.
- Skinner, E. A., & Zimmer-Gembeck, M. J. (2016). Ways and families of coping as adaptive processes. In *The development of coping* (pp. 27-49). Springer, Cham.
- Slonim, J., Kienhuis, M., Di Benedetto, M., & Reece, J. (2015). The relationships among self-care, dispositional mindfulness, and psychological distress in medical students. *Medical education online*, *20*(1), 279-287.
- Smith-Han, K., Martyn, H., Barrett, A., & Nicholson, H. (2016). “That’s not what you expect to do as a doctor, you know, you don’t expect your patients to die.” Death as a learning experience for undergraduate medical students. *BMC medical education*, *16*(1), 108-120.
- Solanky, P., Desai, B., Kavishwar, A., & Kantharia, S. L. (2012). Study of psychological stress among undergraduate medical students of government medical college, Surat. *Int J Med Sci Public Health*, *1*(2), 38-42.
- Srivastava, U., Paul, V., & Razdan, R. G. (2022). Psychosocial Experiences of Post-Mortem Examination Performing Mortuary Staff In Uttar Pradesh, India. *Journal of Positive School Psychology*, *6*(8), 7819-7834.
- Steinmayr, R., Wirthwein, L., Modler, L., & Barry, M. M. (2019). Development of subjective well-being in adolescence. *International Journal of Environmental Research and Public Health*, *16*(19), 374-386.

- Štěpáníková, I., Baker, E., Oates, G., Bienertova-Vasku, J., & Klánová, J. (2020). Assessing Stress in Pregnancy and Postpartum: Comparing Measures. *Maternal and Child Health Journal*, 24(10), 193-120.
- Stewart-Brown, S., Evans, J., Patterson, J., Petersen, S., Doll, H., Balding, J., & Regis, D. (2000). The health of students in institutes of higher education: an important and neglected public health problem?. *Journal of Public Health*, 22(4), 492-499.
- Stoll, K., Hall, W., Janssen, P., & Carty, E. (2014). Why are young Canadians afraid of birth? A survey study of childbirth fear and birth preferences among Canadian University students. *Midwifery*, 30(2), 220-226.
- Straup, M. L., Prothro, K., Sweatt, A., Shamji, J. F., & Jenkins, S. R. (2022). Coping Strategies and Trauma-Related Distress of College Students During Covid-19. *Journal of College Student Retention: Research, Theory & Practice*, 152-162.
- Sujatha, B., & Subhalakshmi, S. (2016). Effect of stress on exam going first year medical students of Tirunelveli. *International Journal of Medical Research & Health Sciences*, 5(1), 118-121.
- Sutrisna, M. (2009). Research methodology in doctoral research: understanding the meaning of conducting qualitative research. In *Proceedings of the Association of Researchers in Construction Management (ARCOM) Doctoral Workshop held in Liverpool John Moores University. Conducted by ARCOM Liverpool, UK: ARCOM*.
- Szkody, E., Hobaica, S., Owens, S., Boland, J., Washburn, J. J., & Bell, D. (2023). Financial stress and debt in clinical psychology doctoral students. *Journal of Clinical Psychology*, 79(3), 835-853.
- Taherdoost, H. (2022). What are different research approaches? Comprehensive review of qualitative, quantitative, and mixed method research, their applications, types, and limitations. *Journal of Management Science & Engineering Research*, 5(1), 53-63
- Tawse, J., & Demou, E. (2022). Qualitative study to explore UK medical students' and junior doctors' experiences of occupational stress and mental health during the COVID-19 pandemic. *BMJ open*, 12(12), 39-51.
- Teddlie, C., & Tashakkori, A. (2009). *Foundations of mixed methods research: Integrating quantitative and qualitative approaches in the social and behavioural sciences*. Sage.
- Tennant, R., Hiller, L., Fishwick, R., Platt, R., Joseph, S., Welch, S. ... (2007). The Warwick –Edinburgh Mental Well-being Scale (WEMWBS) development and UK validation. *Health Quality Life Outcomes*, 5(2), 55-63.
- Thomas, P. A., Kern, D. E., Hughes, M. T., Tackett, S. A., & Chen, B. Y. (Eds.). (2022). *Curriculum development for medical education: a six-step approach*. JHU press.
- Tian-Ci Quek, T., Tam, W. S., X Tran, B., Zhang, M., Zhang, Z., Su-Hui Ho, C., & Chun-Man Ho, R. (2019). The Global Prevalence of Anxiety among Medical Students: A Meta-

- Analysis. *International journal of environmental research and public health*, 16(15), 273-280.
- Tokumasu, K., Nishimura, Y., Sakamoto, Y., Obika, M., Kataoka, H., & Otsuka, F. (2023). Differences in Stress Perception of Medical Students Depending on In-Person Communication and Online Communication during the COVID– 19 Pandemic: A Japanese Cross-Sectional Survey. *International Journal of Environmental Research and Public Health*, 20(2), 15-27.
- Tong, Y., Chen, F., & Shu, B. (2019). Spousal migration and married adults' psychological distress in rural China: The roles of intimacy, autonomy and responsibility. *Social science research*, 83 (2), 102-112.
- Torres-Chávez, L. J., Hidalgo-Rasmussen, C. A., Chávez-Flores, Y. V., Telles, F. S., Rosales-Damián, G., & Javier-Juárez, P. (2022). The effect of life events, perceived stress, resilience and sex on the quality of life of university students: Conditional Process. *Psicología Conductual*, 30(3), 827-842.
- Tran, A. G., Lam, C. K., & Legg, E. (2018). Financial stress, social supports, gender, and anxiety during college: A stress-buffering perspective. *The Counseling Psychologist*, 46(7), 846-869.
- Vanden Abeele, M. M., Abels, M., & Hendrickson, A. T. (2020). Are parents less responsive to young children when they are on their phones? A systematic naturalistic observation study. *Cyberpsychology, Behavior, and Social Networking*, 23(6), 363-370.
- Van Niekerk, L., Scribante, L., & Raubenheimer, P. J. (2012). Suicidal ideation and attempt among South African medical students. *SAMJ: South African Medical Journal*, 102(6), 372-373.
- Van Slyke, C., Clary, G., & Tazkarji, M. (2022). Distress, Eustress, and Continuance Intentions for Distance Learners. *Journal of Computer Information Systems*, 4(3), 1-13.
- Vaz, R. F., Mbajiorgu, E. F., & Acuda, S. W. (1998). A preliminary study of stress levels among first year medical students at the University of Zimbabwe. *The Central African journal of medicine*, 44(9), 214-219.
- Vehmeijer, F. O., Balkaran, S. R., Santos, S., Gaillard, R., Felix, J. F., Hillegers, M. H. ... & Jaddoe, V. W. (2020). Psychological Distress and Weight Gain in Pregnancy: a Population-Based Study. *International journal of behavioural medicine*, 27(1), 30-38.
- Vincenzi, B., Stock, S., Borba, C. P., Cleary, S. M., Oppenheim, C. E., Petruzzi, L. J., ... & Henderson, D. C. (2014). A randomized placebo-controlled pilot study of pravastatin as an adjunctive therapy in schizophrenia patients: effect on inflammation, psychopathology, cognition and lipid metabolism. *Schizophrenia research*, 159(2-3), 395-403.
- Volpe, R. L., de Boer, C., Wasserman, E., & Van Scoy, L. J. (2022). Can an Arts Course Help Mitigate Medical Student Burnout? *Medical Science Educator*, 32(5), 1023-1032.

- Voltmer, E., Kösllich-Strumann, S., Voltmer, J. B., & Kötter, T. (2021). Stress and behavior patterns throughout medical education—a six-year longitudinal study. *BMC Medical Education*, 21(1), 1-12.
- Voltmer, E., Kötter, T., & Spahn, C. (2012). Perceived medical school stress and the development of behavior and experience patterns in German medical students. *Medical teacher*, 34(10), 840-847.
- Waiswa, H. C., Baguma, P. K., & Oonyu, J. (2020). Interpersonal Relations and Achievement among University Upgrading (Grade V) Teacher Students. *International Journal of Education and Literacy Studies*, 8(4), 40-52.
- Weber, J., Skodda, S., Muth, T., Angerer, P., & Loerbroks, A. (2019). Stressors and resources related to academic studies and improvements suggested by medical students: a qualitative study. *BMC medical education*, 19(1), 312-328.
- Welbourne JL, Eggerth D, Hartley TA, Andrew ME, Sanchez F. (2007). Coping strategies in the workplace: Relationships with attributional style and job satisfaction. *Journal of Vocational Behavior*, ;70 (2), 312-325.
- Wilks, S. E. (2008). Resilience amid academic stress: The moderating impact of social support among social work students. *Advances in social work*, 9(2), 106-125.
- Willmott, L., White, B., Yates, P., Mitchell, G., Currow, D. C., Gerber, K., & Piper, D. (2020). Nurses' knowledge of law at the end of life and implications for practice: A qualitative study. *Palliative medicine*, 34(4), 524-532.
- Wilson, S., Hastings, C., Morris, A., Ramia, G., & Mitchell, E. (2022). International students on the edge: The precarious impacts of financial stress. *Journal of Sociology*, 4(2), 34-50.
- Winefield, H. R., Gill, T. K., Taylor, A. W., & Pilkington, R. M. (2012). Psychological well-being and psychological distress: is it necessary to measure both? *Psychology of Well-Being: Theory, Research and Practice*, 2(1), 343-355.
- Wisdom, J., & Creswell, J. W. (2013). Mixed methods: integrating quantitative and qualitative data collection and analysis while studying patient-centred medical home models. *Rockville: Agency for Healthcare Research and Quality*.
- Wolchik, S., & Sandler, I. N. (Eds.). (2013). *Handbook of children is coping: Linking theory and intervention*. Springer Science & Business Media.
- Wright, B., & Mynett, J. R. (2019). Training medical students to manage difficult circumstances-a curriculum for resilience and resourcefulness? *BMC medical education*, 19(1), 280-293.
- Wuthrich, V. M., Jagiello, T., & Azzi, V. (2020). Academic stress in the final years of school: A systematic literature review. *Child Psychiatry & Human Development*, 51, 986-1015.

- Yamada, Y., Klugar, M., Ivanova, K., & Oborna, I. (2014). Psychological distress and academic self-perception among international medical students: the role of peer social support. *BMC medical education*, *14*(1), 256-266.
- Yayla, A., & Çevik, Ö. (2022). The Effect of Competition on Moral Development: A Phenomenological Study. *International Journal of Psychology and Educational Studies*, *9*, 967-977.
- Yang, M., Viladrich, C., & Cruz, J. (2022). Examining the relationship between academic stress and motivation toward physical education within a semester: A two-wave study with Chinese secondary school students. *Frontiers in psychology*, *13* (2), 1-17
- Yussof, M.S.B., Yee, L.Y., Wei, L.H., Siong, T.C., Meng, L.H., Bin, L.X., and Rahim, A.F.A. (2011). A study of stress, stressors and coping strategies among Malaysian medical students. *International Journal of Students' Research*. *1*(2), 45-50.
- Zainal, H., Xin, X., Thumboo, J., & Fong, K. Y. (2022). Medical school curriculum in the digital age: perspectives of clinical educators and teachers. *BMC Medical Education*, *22*(1), 1-10.
- Zheng, G., Zhang, Q., & Ran, G. (2023). The association between academic stress and test anxiety in college students: The mediating role of regulatory emotional self-efficacy and the moderating role of parental expectations. *Frontiers in Psychology*, *1* (4), 74-93.

APPENDICIES

APPENDIX A: GREAT ZIMBABWE ETHICAL CLEARANCE LETTER



Julius Nyerere School of Social Sciences
Dean's Office
P O Box 1235
MASVINGO
Zimbabwe
Tel: 263 (0)39-266427
Cell: +263-783 074 069
E-mail: bchazovachii@gzu.ac.zw

GREAT ZIMBABWE UNIVERSITY

NAME OF APPLICANT: Mqemane Tshababa

DEPARTMENT: Psychology

PROJECT TITLE: Sources and levels of distress among Medical Students at two newly established Medical Schools in Zimbabwe.

APPROVAL NO: 002/2020

COMMENCEMENT DATE: 01/10/2020

APPROVAL VALID TO: 12/12/2021

COMMENTS:

The researcher(s) must report immediately to the Faculty Ethics Review Committee anything that might affect ethical acceptance of the protocol. This includes adverse reactions of the participants, proposed changes in the protocol, and any other unforeseen events that might affect the continued ethical acceptability of the project.

In issuing this approval number, it is required that all data and consent forms are stored in a secure location for a minimum period of five years. These documents may be required for compliance audit processes during that time. If the location at which data and documentation are retained is changed within that five year period, the Faculty Ethics Review Committee should be advised of the new location.

SIGNATURES:

S. Chikwira
Chairperson, School Ethics Review Committee

01/10/20
Date

M. MUSENGI
Director, Research and Postgraduate Studies

01/10/20
Date

APPENDIX B: MINISTRY OF HIGHER AND TERTIARY EDUCATION, SCIENCE INNOVATION AND TECHNOLOGY APPROVAL LETTER

All official communications should be addressed to:
"The Secretary for Higher & Tertiary Education
Telephones: 795891-5, 796441-9, 730355-9
Fax Numbers: 792109, 728730, 703957
E-mail: thesecretary@mhet.us.zw
Telegraphic address: "EDUCATION"



Reference:

MINISTRY OF HIGHER AND TERTIARY
EDUCATION, SCIENCE AND
TECHNOLOGY DEVELOPMENT
P. BAG CV 7732
CAUSEWAY

**REF: P/ TSABABA MQEMANE (MR)
E.C NO: 5799812 S**

STAFF CONFIDENTIAL

08 June 2021

Mr. M. Tsababa
C/o Police Staff College

Dear Mr. Tsababa,

REQUEST FOR AUTHORITY TO CARRY OUT RESEARCH AT THE NATIONAL UNIVERSITY OF SCIENCE AND TECHNOLOGY AND MIDLANDS STATE UNIVERSITY: MR. MQAMANE TSABABA: EC NO. 5799812 S: LECTURER: POLICE STAFF COLLEGE: MINISTRY OF HOME AFFAIRS AND CULTURAL HERITAGE

The above matter refers.

Please note that the Head of Ministry, has granted you authority to carry out your research entitled, 'Sources and levels of distress among Medical students at two newly established Medical Schools in Zimbabwe'.

Please be advised accordingly.

E. Yesaya
E. Yesaya (Mrs)

FOR: Secretary

Higher and Tertiary Education, Innovation, Science and Technology Development

C.c The Vice Chancellor - National University of Science & Technology
The Vice Chancellor - Midlands State University
File



APPENDIX C: MEDICAL RESEARCH COUNCIL OF ZIMBABWE CLEARANCE

Telephone: 08644072773/791193
E-mail: mrcz@mrcz.org.zw
Website: <http://www.mrcz.org.zw>



Medical Research Council of Zimbabwe
Josiah Tongogara / Mazowe Street
P. O. Box CV 573
Causeway
Harare

APPROVAL

MRCZ/A/2798

25 October, 2021

Mqemane Tshababa
Manicaland State University – Dept. of Psychology
P. Bag 7001
Fernhill
Mutare

RE: - Sources and Levels of Distress among Medical Students at Two Newly Established Medical Schools in Zimbabwe Version 2.1 Dated 18 October, 2021

Thank you for the application for review of research activity that you submitted to the Medical Research Council of Zimbabwe (MRCZ). Please be advised that the Medical Research Council of Zimbabwe has **reviewed** and **approved** your application to conduct the above titled study.

This approval is based on the review and approval of the following documents that were submitted to MRCZ for review:

- Completed MRCZ Application Form 101
- Protocol Version 2.1 dated 18 October, 2021
- English Informed Consent Form Version 2.1 dated 18 October, 2021
- Data Collection Tool version 2.1 dated 18 October, 2021

• **APPROVAL NUMBER** : MRCZ/A/2798

This number should be used on all correspondence, consent forms and documents as appropriate.

- **TYPE OF MEETING** : Full Board
- **MEETING DATE** : 30 September, 2021
- **APPROVAL DATE** : 25 October, 2021
- **EXPIRATION DATE** : 24 October, 2022

After this date, this project may only commence upon renewal. For purposes of renewal, a progress report on a standard form obtainable from the MRCZ Offices should be submitted three months before the expiration date for continuing review.

- **SERIOUS ADVERSE EVENT REPORTING:** All serious problems having to do with subject safety must be reported to the Institutional Ethical Review Committee (IERC) as well as the MRCZ within 3 working days using standard forms obtainable from the MRCZ Offices or website.
- **MODIFICATIONS:** Prior MRCZ and IERC approval using standard forms obtainable from the MRCZ Offices is required before implementing any changes in the Protocol (including changes in the consent documents).
- **TERMINATION OF STUDY:** On termination of a study, a report has to be submitted to the MRCZ using standard forms obtainable from the MRCZ Offices or website.
- **QUESTIONS:** Please contact the MRCZ on Telephone No. (0242) 791193/08644073772 or by e-mail on mrcz@mrcz.org.zw

Other

- Please be reminded to send in copies of your research results for our records as well as for Health Research Database.
- You're also encouraged to submit electronic copies of your publications in peer-reviewed journals that may emanate from this study.
- In addition to this approval, all clinical trials involving drugs, devices and biologics (including other studies focusing on registered drugs) require approval of Medicines Control Authority of Zimbabwe (MCAZ) before commencement.

Yours Faithfully

MRCZ SECRETARIAT
FOR CHAIRPERSON
MEDICAL RESEARCH COUNCIL OF ZIMBABWE

MEDICAL RESEARCH COUNCIL OF ZIMBABWE

2021 -10- 25

APPROVED

PROMOTING THE ETHICAL CONDUCT OF HEALTH RESEARCH

APPENDIX D: MDILANDS STATE UNIVERSITY APPLICATION LETTER

Request to carry out study-MSU

House number 4009 Spitzkop North Ext,
Gwanda

The Registrar
MIDLANDS STATE UNIVERSITY

27 May 2020

**RE: REQUEST TO UNDERTAKE AN ACADEMIC STUDY WITHIN MSU BY
MQEMANE TSHABABA (173417)**

I am a Doctoral student at the Great Zimbabwe University pursuing a study in '**Sources and Levels of Distress among Medical students at two newly established Medical Schools in Zimbabwe**'

One of the objectives of the study is establish the extent to which academic workload contribute towards medical students' distress. The study acknowledges that while there is documented evidence about the nature of distress in the general population of students, there is no similar evidence about medical students' distress.

The study is targeted at Medical Students from your medical school and it seeks to propose adaptive coping mechanisms that can be employed medical students in order to deal with distress. The study uses a mixed methodology approach to quantitatively measure the distress levels of medical students and the qualitative approach to obtain students' opinions on the nature of their distress.

The information collected will entirely be used for academic purposes. A copy of the research findings will be availed to your University.

In anticipation of your most favourable response.

Signed 

MQEMANE TSHABABA

APPENDIX E: MIDLANDS STATE UNIVERSITY APPROVAL LETTER

Office of the Registrar
Mr T Zishiri

P Bag 9055
GWERU
Telephone 260180/260450
Fax: 263-054-260735
Email: zishiri@staff.msu.ac.zw



MIDLANDS STATE UNIVERSITY

16 November 2021

Mr M Tshababa
Manicaland State University of Applied Sciences
Stair Guthrie Road
P Bag 7001
Fernhill
Mutare

Dear Mr Tshababa

Re: Application for Permission to Carry out a PhD Research at Midlands State University; on Sources and Levels of Distress among Medical Students at two Newly established Medical Schools in Zimbabwe

Reference is made to your letter dated 27 October 2021 in which you requested permission to carry out a research in the Faculty of Medicine and Health Sciences on "Sources and levels of distress among Medical students at two newly established Medical Schools in Zimbabwe". Please be advised that Midlands State University has granted you permission to carry out your research.

We would appreciate if you could supply the University with a final copy of your study. Also kindly note that the University expects you to use the information acquired during your study solely for research purposes.

I hope that you will get all the assistance and cooperation you need from the University Community.

Thank you.

Mr T Zishiri
University Registrar



APPENDIX F: NUST APPLICATION LETTER

House number 4009 Spitzkop North Ext,
Gwanda

The Registrar
National University of Science and Technology

27 May 2021

**RE: REQUEST TO UNDERTAKE AN ACADEMIC STUDY WITHIN NUST BY
MQEMANE TSHABABA (M173417)**

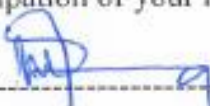
I am a Doctoral student at the Great Zimbabwe University pursuing a study in **'Sources and Levels of Distress among Medical students at two newly established Medical Schools in Zimbabwe'**

One of the objectives of the study is establish the extent to which academic workload contribute towards medical students' distress. The study acknowledges that while there is documented evidence about the nature of distress in the general population of students, there is no similar evidence about medical students' distress.

The study is targeted at Medical Students from your medical school and it seeks to propose adaptive coping mechanisms that can be employed medical students in order to deal with distress. The study uses a mixed methodology approach to quantitatively measure the distress levels of medical students and the qualitative approach to obtain students' opinions on the nature of their distress.

The information collected will entirely be used for academic purposes. A copy of the research findings will be availed to your University.

In anticipation of your most favourable response.

Signed -----
MQEMANE TSHABABA

APPENDIX G: NUST APPROVAL LETTER



National University of Science and Technology

P.O. Box AC 939 Ascot, Bulawayo, Zimbabwe
Cnr. Gwanda Road/Cecil Avenue

Telephone: 263-9-262842/288413/39/58
Fax: 253-9-288903

REGISTRAR

BN/sm

28 January 2022

Mr Mqemane Tshababa
NUST
Department of Psychiatry, Social and Behavioural Sciences

Dear Sir

RE: AUTHORITY TO UNDERTAKE RESEARCH AT THE NATIONAL UNIVERSITY OF SCIENCE AND TECHNOLOGY

Reference is made to your letter received on the 28th of January, 2022 on the above request.

We would like to inform you that we have granted you permission to carry out your research study with the University entitled **“Sources and Levels of Distress among Medical students at two newly established Medical Schools in Zimbabwe”**.

Please note that this is subject to Research Ethics clearance from the Director of Research and Internationalisation.

We would like to emphasize that all the information gathered should be for research purposes only and that confidentiality has to be exercised.

Yours sincerely

B Ngwenya (Mr)
Registrar



Cc Dean Medicine
Director, Institutional Research and Quality Assurance
Director, Research and Internationalisation

APPENDIX H NUST INSTITUTIONAL REVIEW BOARD CLEARANCE



NATIONAL UNIVERSITY OF SCIENCE AND TECHNOLOGY

NUST INSTITUTIONAL REVIEW BOARD

DATE: 21 January 2022

Dear Mr Tshababa

TITLE: Sources and levels of distress among Medical Students at two newly established Medical Schools in Zimbabwe

Thank you for submitting your Research Proposal for review by the NUST IRB. Please be advised that the IRB reviewed your protocol and it was approved.

The approval by the NUST IRB was based on the following documents you submitted:

- (i) Research Proposal Document of the Study
- (ii) Consent Forms, and
- (iii) Data Collection tools

The approval number for the study is **NUST/IRB/2021/05** and should be used in all correspondence, consent forms and other documents as appropriate.

Approval Date : 21 January 2022

Expiry Date : 21 January 2023

After the expiry date, the project may only continue after renewal. Renewal application process should commence three months before the expiry date.

All problems related to the safety of participants must be reported to the NUST IRB within 3 working days. You should not deviate from the protocol and procedures stated in the proposal. Do not make any adjustments/changes to the protocol and consent forms without prior written approval to the NUST IRB.

Thank you

A handwritten signature in black ink, appearing to read 'W. D. D. D.', is located at the bottom of the letter.

APPENDIX I: KRECIJE AND MORGAN SAMPLING TABLE

Krejcie and Morgan Sample Table

<i>N</i>	<i>S</i>	<i>N</i>	<i>S</i>	<i>N</i>	<i>S</i>
10	10	220	140	1200	291
15	14	230	144	1300	297
20	19	240	148	1400	302
25	24	250	152	1500	306
30	28	260	155	1600	310
35	32	270	159	1700	313
40	36	280	162	1800	317
45	40	290	165	1900	320
50	44	300	169	2000	322
55	48	320	175	2200	327
60	52	340	181	2400	331
65	56	360	186	2600	335
70	59	380	191	2800	338
75	63	400	196	3000	341
80	66	420	201	3500	346
85	70	440	205	4000	351
90	73	460	210	4500	354
95	76	480	214	5000	357
100	80	500	217	6000	361
110	86	550	226	7000	364
120	92	600	234	8000	367
130	97	650	242	9000	368
140	103	700	248	10000	370
150	108	750	254	15000	375
160	113	800	260	20000	377
170	118	850	265	30000	379
180	123	900	269	40000	380
190	127	950	274	50000	381
200	132	1000	278	75000	382
210	136	1100	285	100000	384

Note.—*N* is population size. *S* is sample size.

Source: Krejcie & Morgan, 1970

APPENDIX J: STUDENT STRESS INVENTORY (REVISED)

SECTION A: ADMINISTRATION

My name is Mqemane Tshababa. I am a doctoral student at Great Zimbabwe University where I am studying towards a Doctor of Philosophy in Psychology. My thesis topic is “Sources and levels of distress among medical students at two newly established medical schools in Zimbabwe.” I wish to administer this questionnaire to you to seek your opinion on the sources and levels of distress (negative stress) among medical students at two newly established medical schools in Zimbabwe. This study forms part of my Doctor of Philosophy in Psychology degree and it is envisaged that its findings will help create an adaptive and sustainable coping model for distressed medical students in Zimbabwe. You were chosen to participate in this study because you are part of the medical students currently enrolled at the two newly established medical schools in Zimbabwe. You are advised not to write your name on the questionnaire so that your responses remain anonymous. There are not going to be right or wrong answers in this survey. The researcher is only interested in your own opinion and the information so supplied will be used for academic purposes only and with strict confidence. You are, therefore, kindly requested to complete the questionnaire as honestly as you can. Thank you for taking time to complete this questionnaire.

Serial number

SECTION B: BIOGRAPHICAL DATA

Kindly fill in the blank spaces or tick (√) the appropriate box.

1. Age range:

- | | | |
|---------------|---|--------------------------|
| 18-22 years | 1 | <input type="checkbox"/> |
| 23-27 years | 2 | <input type="checkbox"/> |
| 28-32 years | 3 | <input type="checkbox"/> |
| Over 32 years | 4 | <input type="checkbox"/> |

2. Gender

- | | | |
|-------------|---|--------------------------|
| Male | 1 | <input type="checkbox"/> |
| Female | 2 | <input type="checkbox"/> |
| Transgender | 3 | <input type="checkbox"/> |

3. Marital status

- Single and dating 1
- Single and not dating 2
- Married 3
- Divorced 5
- Widowed 6

4. Institution

- Medical school A 1
- Medical school B 2

5. Degree level

- First year 1
- Second year 2
- Third year 3
- Forth year 4
- Fifth year 5

6. Place of residence

- On campus 1
- Rented accommodation 2
- Other 3

7. Area of permanent residence

- Rural areas 1
- High Density suburbs 2
- Medium density suburbs 3
- Low Density suburbs 4
- Other 5

8. Level of education of parents

- | | | |
|----------------|---|--------------------------|
| Ordinary level | 1 | <input type="checkbox"/> |
| Diploma | 2 | <input type="checkbox"/> |
| Degree | 3 | <input type="checkbox"/> |
| Post graduate | 4 | <input type="checkbox"/> |
| Other | 5 | <input type="checkbox"/> |

9. Nature of parents' degree

- | | | |
|-----------------|---|--------------------------|
| Medicine | 1 | <input type="checkbox"/> |
| Engineering | 2 | <input type="checkbox"/> |
| Social Sciences | 3 | <input type="checkbox"/> |
| Other | 4 | <input type="checkbox"/> |

10. Nature of siblings' degree

- | | | |
|-----------------|---|--------------------------|
| Medicine | 1 | <input type="checkbox"/> |
| Engineering | 2 | <input type="checkbox"/> |
| Social Sciences | 3 | <input type="checkbox"/> |
| Other | 4 | <input type="checkbox"/> |

11. Family Income status per month

- | | | |
|----------------------|---|--------------------------|
| RTGS 1-20 000 | 1 | <input type="checkbox"/> |
| RTGS 21000-40000 | 2 | <input type="checkbox"/> |
| RTGS 41000-60000 | 3 | <input type="checkbox"/> |
| RTGS 61000 and above | 4 | <input type="checkbox"/> |

12. Race

- | | | |
|----------|---|--------------------------|
| African | 1 | <input type="checkbox"/> |
| European | 2 | <input type="checkbox"/> |
| Asian | 3 | <input type="checkbox"/> |
| Other | 4 | <input type="checkbox"/> |

13. Religion

Christianity	1	<input type="text"/>
African Traditional Religion	2	<input type="text"/>
Moslem	3	<input type="text"/>
Other	4	<input type="text"/>

Instructions

Rate each potential source of distress on a scale of 1 (doesn't affect you at all) to 5 (affects you very much).

Sources of Distress	Ratings Scale				
	None	Little	Some	Much	Very Much
1. Academic demands (the length of the semester, assignments, tests and exams, competition for grades, the nature of the medical curriculum)	1	2	3	4	5
2. Procrastination - Wanting to go have fun but needing to study.	1	2	3	4	5
3. Getting nothing done. Balancing schoolwork and fun.					
4. Campus environment (e.g., fitting in, values conflict)	1	2	3	4	5
5. Conflict with authority (deans, police, professors, etc.)	1	2	3	4	5
6. Self-doubt and negative self-talk	1	2	3	4	5
7. Not enough friends	1	2	3	4	5
8. Issues with family (parents, siblings) – family expectations, family’s dependence, homesickness, lack of understanding/support	1	2	3	4	5
9. Separation, conflict with partner or friends	1	2	3	4	5
10. Your health	1	2	3	4	5
11. Health of parent, friend or other	1	2	3	4	5
12. Inadequacy of living arrangements	1	2	3	4	5
13. Not enough money	1	2	3	4	5
14. Demands of school work	1	2	3	4	5
15. Racial or Ethnic Discrimination (Feeling like you need to work harder to prove yourself)	1	2	3	4	5
16. Religious/other cultural conflicts	1	2	3	4	5
17. Drug and alcohol problems	1	2	3	4	5
18. Future planning, decision making – What will I major in, do in the future, will it all work out?	1	2	3	4	5
19. Life transitions (moving, etc.)	1	2	3	4	5
20. Loss (death or separation from someone close)	1	2	3	4	5
21. Other	1	2	3	4	5

Source: Adapted from Gadzella (2005)

Thank you for completing this questionnaire

APPENDIX K: COPE DISPOSITIONAL VERSION

SECTION A: ADMINISTRATION

My name is Mqemane Tshababa. I am a doctoral student at Great Zimbabwe University where I am studying towards a Doctor of Philosophy in Psychology. My thesis topic is “Sources and levels of distress among medical students at two newly established medical schools in Zimbabwe.” I wish to administer this questionnaire to you to seek your opinion on how you normally cope when confronted with stressful situations while at the medical school. This study forms part of my Doctor of Philosophy in Psychology degree and it is envisaged that its findings will help create an adaptive and sustainable coping model for distressed medical students in Zimbabwe. You were chosen to participate in this study because you are part of the medical students currently enrolled at the two newly established medical schools in Zimbabwe. You are advised not to write your name on the questionnaire so that your responses remain anonymous. There are not going to be right or wrong answers in this survey. The researcher is only interested in your own opinion and the information so supplied will be used for academic purposes only and with strict confidence. You are, therefore, kindly requested to complete the questionnaire as honestly as you can. Thank you for taking time to complete this questionnaire

Serial number

SECTION B: BIOGRAPHICAL DATA

Kindly fill in the blank spaces or tick (✓) the appropriate box.

1. Age range:

- | | | |
|---------------|---|--------------------------|
| 18-22 years | 1 | <input type="checkbox"/> |
| 23-27 years | 2 | <input type="checkbox"/> |
| 28-32 years | 3 | <input type="checkbox"/> |
| Over 32 years | 4 | <input type="checkbox"/> |

2. Gender

- | | | |
|-------------|---|--------------------------|
| Male | 1 | <input type="checkbox"/> |
| Female | 2 | <input type="checkbox"/> |
| Transgender | 3 | <input type="checkbox"/> |

3. Marital status

- | | | |
|-------------------|---|--------------------------|
| Single and dating | 1 | <input type="checkbox"/> |
|-------------------|---|--------------------------|

- Single and not dating 2
- Married 3
- Divorced 5
- Widowed 6

4. Institution

- Medical school A 1
- Medical school B 2

5. Degree level

- First year 1
- Second year 2
- Third year 3
- Forth year 4
- Fifth year 5

6. Place of residence

- On campus 1
- Rented accommodation 2
- Other 3

7. Area of permanent residence

- Rural areas 1
- High Density suburbs 2
- Medium density suburbs 3
- Low Density suburbs 4
- Other 5

8. Level of education of parents

- Ordinary level 1
- Diploma 2
- Degree 3
- Post graduate 4
- Other 5

9. Nature of parents' degree

- Medicine 1
- Engineering 2
- Social Sciences 3
- Other 4

10. Nature of siblings' degree

- Medicine 1
- Engineering 2
- Social Sciences 3
- Other 4

11. Family Income status per month

- RTGS 1-20 000 1
- RTGS 21000-40000 2
- RTGS 41000-60000 3
- RTGS 61000 and above 4

12. Race

- African 1
- European 2
- Asian 3
- Other 4

13. Religion

- Christianity 1
- African Traditional Religion 2
- Moslem 3
- Other 4

SECTION C: COPING STYLES

- Use the following scoring key:

- 1 = I usually don't do this at all (DDAT)
- 2 = I usually do this a little bit (DAB)
- 3 = I usually do this a medium amount (DMA)
- 4 = I usually do this a lot (DAL)

Respond to each of the following items by marking **X** one number on your answer sheet for each, using the response choices listed just below.

Item	DDA	DAB	DMA	DAL
	T			
	1	2	3	4
1. I try to grow as a person as a result of the experience.				
2. I turn to schoolwork or other substitute activities to take my mind off things.	1	2	3	4
3. I get upset and let my emotions out.	1	2	3	4
4. I try to get advice from someone about what to do.	1	2	3	4
5. I concentrate my efforts on doing something about it.	1	2	3	4
6. I say to myself "this isn't real."	1	2	3	4
7. I put my trust in God.	1	2	3	4
8. I laugh about the situation.	1	2	3	4
9. I admit to myself that I can't deal with it, quit trying.	1	2	3	4
10. I restrain myself from doing anything too quickly.	1	2	3	4
11. I discuss my feelings with someone.	1	2	3	4
12. I use alcohol or drugs to make myself feel better.	1	2	3	4
13. I get used to the idea that it happened.	1	2	3	4
14. I talk to someone to find out more about the situation.	1	2	3	4
15. I keep myself from getting distracted by other thoughts or activities.	1	2	3	4
16. I daydream about things other than this.	1	2	3	4
17. I get upset, and am really aware of it.	1	2	3	4
18. I seek God's help.	1	2	3	4

19. I make a plan of action.	1	2	3	4
20. I make jokes about it.	1	2	3	4
21. I accept that this has happened and that it can't be changed.	1	2	3	4
22. I hold off doing anything about it until the situation permits.	1	2	3	4
23. I try to get emotional support from friends or relatives.	1	2	3	4
24. I just give up trying to reach my goal	1	2	3	4
25. I take additional action to try to get rid of the problem.	1	2	3	4
26. I try to lose myself for a while by drinking alcohol or taking drugs.	1	2	3	4
27. I refuse to believe that it has happened	1	2	3	4
28. I let my feelings out.	1	2	3	4
29. I try to see it in a different light, to make it seem more positive.	1	2	3	4
30. I talk to someone who could do something concrete about the problem.	1	2	3	4
31. I sleep more than usual.	1	2	3	4
32. I try to come up with a strategy about what to do.	1	2	3	4
33. I focus on dealing with this problem, and if necessary let other things slide a little.	1	2	3	4
34. I get sympathy and understanding from someone.	1	2	3	4
35. I drink alcohol or take drugs, in order to think about it less.	1	2	3	4
36. I kid around about it.	1	2	3	4
37. I give up the attempt to get what I want.	1	2	3	4
38. I look for something good in what is happening.	1	2	3	4
39. I think about how I might best handle the problem.	1	2	3	4
40. I pretend that it hasn't really happened.	1	2	3	4
41. I make sure not to make matters worse by acting too soon.	1	2	3	4
42. I try hard to prevent other things from interfering with my efforts at dealing with this.	1	2	3	4
43. I go to movies or watch TV, to think about it less.	1	2	3	4
44. I accept the reality of the fact that it happened.	1	2	3	4
45. I ask people who have had similar experiences what they did.	1	2	3	4
46. I feel a lot of emotional distress and I find myself expressing those feelings a lot.	1	2	3	4
47. I take direct action to get around the problem.	1	2	3	4

48. I try to find comfort in my religion.	1	2	3	4
49. I force myself to wait for the right time to do something.	1	2	3	4
50. I make fun of the situation.	1	2	3	4
51. I reduce the amount of effort I'm putting into solving the problem.	1	2	3	4
52. I talk to someone about how I feel.	1	2	3	4
53. I use alcohol or drugs to help me get through it.	1	2	3	4
54. I learn to live with it.	1	2	3	4
55. I put aside other activities in order to concentrate on this.	1	2	3	4
56. I think hard about what steps to take.	1	2	3	4
57. I act as though it hasn't even happened.	1	2	3	4
58. I do what has to be done, one step at a time.	1	2	3	4
59. I learn something from the experience.	1	2	3	4
60. I pray more than usual.	1	2	3	4

Source: Adapted from Carver (2013)

Thank you for completing this questionnaire

APPENDIX L: INTERVIEW SCHEDULE FOR MEDICAL STUDENTS

SECTION A: ADMINISTRATION

My name is Mqemane Tshababa. I am a doctoral student at Great Zimbabwe University where I am doing a Doctor of Philosophy in Psychology. My thesis topic is “Sources and levels of distress among medical students at two newly established medical schools in Zimbabwe.” I wish to conduct a face to face interview to get your opinion on the sources and levels of distress at the medical school and also to understand how you cope with distress during your medical training. This study forms part of my Doctor of Philosophy in Psychology degree and it is envisaged that its findings will help create an adaptive and sustainable coping model for distressed medical students in Zimbabwe. You were chosen to participate in this study because you are part of the medical students currently enrolled at the two newly established medical schools in Zimbabwe. Our interview is divided into three parts. In Part A, we will talk about sources of distress, while in Part B we will discuss whether you have experiences of burnout and in Part C we look at how you cope with stressors in your school environment. Feel free to seek clarification on questions that you do not clearly understand. There are no right and wrong answers. All responses are going to be treated in the strictest confidence and will be used solely for the purpose of academic study.

Thank you for taking time to respond to this interview.

Interviewee code	
Date of interview	

SECTION B: BIOGRAPHICAL DATA

Kindly fill in the blank spaces or tick (√) the appropriate box.

1. Age range:

- | | | |
|---------------|---|--------------------------|
| 18-22 years | 1 | <input type="checkbox"/> |
| 23-27 years | 2 | <input type="checkbox"/> |
| 28-32 years | 3 | <input type="checkbox"/> |
| Over 32 years | 4 | <input type="checkbox"/> |

2. Gender

- | | | |
|------|---|--------------------------|
| Male | 1 | <input type="checkbox"/> |
|------|---|--------------------------|

Female	2	<input type="text"/>
Transgender	3	<input type="text"/>

3. Marital status

Single and dating	1	<input type="text"/>
Single and not dating	2	<input type="text"/>
Married	3	<input type="text"/>
Divorced	5	<input type="text"/>
Widowed	6	<input type="text"/>

4. Institution

Medical school A	1	<input type="text"/>
Medical school B	2	<input type="text"/>

5. Degree level

First year	1	<input type="text"/>
Second year	2	<input type="text"/>
Third year	3	<input type="text"/>
Forth year	4	<input type="text"/>
Fifth year	5	<input type="text"/>

6. Place of residence

On campus	1	<input type="text"/>
Rented accommodation	2	<input type="text"/>
Other	3	<input type="text"/>

7. Area of permanent residence

Rural areas	1	<input type="text"/>
High Density suburbs	2	<input type="text"/>
Medium density suburbs	3	<input type="text"/>
Low Density suburbs	4	<input type="text"/>
Other	5	<input type="text"/>

8. Level of education of parents

Ordinary level	1	<input type="text"/>
----------------	---	----------------------

- Diploma 2
- Degree 3
- Post graduate 4
- Other 5

9. Nature of parents' degree

- Medicine 1
- Engineering 2
- Social Sciences 3
- Other 4

10. Nature of siblings' degree

- Medicine 1
- Engineering 2
- Social Sciences 3
- Other 4

11. Family Income status per month

- RTGS 1-20 000 1
- RTGS 21000-40000 2
- RTGS 41000-60000 3
- RTGS 61000 and above 4

12. Race

- African 1
- European 2
- Asian 3
- Other 4

13. Religion

- Christianity 1
-

African Traditional Religion	2	
Moslem	3	<input type="text"/>
Other	4	<input type="text"/>

SECTION C: SOURCES OF DISTRESS

1. Would you say your course has different academic demands? Specify any three major demands and briefly explain.
2. Describe how your **peers** generally **support** you in doing your school work.
3. In what way would you say losing a loved one is a distressing situation?
4. How has witnessing patients dying contributed to your distress?
5. In your opinion, do you think financial situation contributes to distress? Explain
6. How would you describe your **relationships** with your colleagues and lecturers?
7. Comment on the changes of the curriculum at school and highlight if you are adequately informed about these and also afforded the opportunity to make suggestions
8. How do you think the length of the semester contributes to distress?
9. Overall, how would you describe the stressful nature of your course?

SECTION D: COPING

10. How have you found stressful situations helpful in making you to grow as an individual (**Positive reinterpretation and growth**)
11. How have you turned to your schoolwork or other activities to take things off your mind when stressed? (**Mental disengagement**)
12. How have you found your expressing your feelings or emotions about what is stressing you? (**Focus on and venting of emotions**)
13. Comment on how you have sought advice, assistance, or information before acting (**Use of instrumental social support**)
14. In stressful situations, what active steps do you take in trying to remove or circumvent the stressors to reduce the effects? (**Active coping**)
15. Do you sometimes find yourself refusing to believe that a stressor exists or you act as though the stressor is not real? Please explain (**Denial**)

16. Describe how you think religion minimizes your stress levels (**Religious coping**)
17. How does laughing off or joking help you deal with stress? (**Humor**)
18. In your opinion, would you say at times you feel helpless and give up in dealing with a stressor or reduce your effort to deal with the stressor? (**Behavioral disengagement**)
19. When stressed how often do you hold yourself or wait until an appropriate opportunity to act presents itself? (**Restraint**)
20. Explain how you at times you seek moral support, sympathy, or understanding from colleagues or your lecturers (**Use of emotional social support**)
21. Do you find that drinking alcohol or taking drugs helps in reducing stress (**Substance use**)
22. Describe to me how you react when confronted by stressors, do you always accept that this is a normal part of you? (**Acceptance**)

Table 3.9.3.1.1: Biographical data of the Pilot study (n=16)

Biographical variable	Category	Number of responses	Frequency Percentage (%)	in
Gender	Male	08	50	
	Female	08	50	
Age (years)	18-22	08	50	
	23-27	07	47	
	28-32	01	7	
Marital status	single and dating	13	87	
	single and not dating	03	20	
Institution	Medical school A	08	50	
	Medical school B	08	50	
Degree level	First year	03	20	
	Second year	03	20	
	Third year	05	33	
	Fourth year	03	20	
	Fifth year	02	13	
Place of residence	on campus	10	67	
	Other	06	40	
Area of permanent residence	Rural	02	13	
	high density	06	40	
	medium density	04	27	
	low density	04	27	
Level of education of parents	o level	06	40	
	Diploma	07	47	
	Degree	02	13	
	post graduate	01	7	
Nature of parents degree	Medicine	01	7	
	social sciences	02	13	
Income of parents	1-20000 RTGS	2	13	
	21000-40000 RTGS	12	80	
	41000-60000 RTGS	02	13	
	social sciences	05	33	
	Other	02	13	
	No response	09	60	
Religion	Christianity	16	100	

Reliability and Validity of the Constructs

This section presents reliability and validity measurements of the various sections of the questionnaire. Cronbach Alpha and Corrected Item-Total Correlation were employed in this regards.

Sources of Distress

Reliability Statistics

Cronbach's Alpha	N of Items
.789	21

Reliability Statistics

Cronbach's Alpha	N of Items
.959	60

Latent variable	Cronbach's Alpha	N of Items
Sources of Distress	.789	21
Copying	0.959	60

Sources and levels of distress

Convergency validity

Item-Total Statistics

	Scale Mean if Item Deleted	Scale Variance if Item Deleted	Corrected Item-Total Correlation if Item Deleted	Cronbach's Alpha if Item Deleted
1.Academic demands (problems with faculty, class work, fears about upcoming papers, exams, fitting in all the work, failing classes, etc.	45.29	81.135	-.282	.832
2. Procrastination - Wanting to go have fun but needing to study	47.43	62.340	.606	.761
3.Getting nothing done. Balancing schoolwork and fun	47.15	65.923	.596	.766
4.Campus environment (e.g., fitting in, values conflict)	47.21	68.705	.561	.772
5.Conflict with authority (deans, police, professors, etc.)	47.60	67.632	.616	.768
6,Self-doubt and negative self-talk None	47.06	68.812	.410	.777
7.Not enough friends	47.25	66.799	.583	.768

8.Issues with family (parents, siblings) – family expectations, family’s dependence, homesickness, lack of understanding/support	47.02	67.129	.573	.769
9.Separation, conflict with partner or friends	46.87	70.150	.391	.779
10.Your health	46.85	69.163	.453	.776
11.Health of parent, friend or other	46.62	76.163	-.054	.800
12.Inadequacy of living arrangements	47.08	72.095	.264	.785
13.Not enough money	47.60	67.632	.616	.768
14.Demands of school work	47.15	67.256	.524	.771
15.Racial or Ethnic Discrimination (Feeling like you need to work harder to prove yourself)	47.02	74.481	.007	.806
16.Religious/other cultural conflicts	47.13	72.354	.162	.792
17.Drug and alcohol problems	46.63	69.383	.304	.784
18.Future planning, decision making – What will I major in, do in the future, will it all work out?	46.92	70.576	.200	.793
19.Life transitions (moving, etc.)	47.34	68.689	.556	.772
20.Loss (death or separation from someone close)	47.09	68.121	.503	.773
21.Other	47.40	69.002	.447	.776

Reliability

The sources of distress subscale consisted of 21 items ($\alpha=.789$), was found to have a satisfactory internal consistency (Cite)

Justification of Cronbach's Alpha

Cronbach's alpha	Internal consistency
$\alpha \geq 0.9$	Excellent
$0.9 > \alpha \geq 0.8$	Good
$0.8 > \alpha \geq 0.7$	Acceptable
$0.7 > \alpha \geq 0.6$	Questionable
$0.6 > \alpha \geq 0.5$	Poor
$0.5 > \alpha$	Unacceptable

Validity

Corrected Item-Total Correlation indicate that some items which include racial or ethnic discrimination, health of parent, friend or other had values were not discriminating well ($r < 0.19$), suggesting poor coinstruct validity. These items were removed from further analysis as they did not measure what they pupport to sources of distress.

Justification (Corrected Item-Total Correlation)

1. values between 0 and 0.19 may indicate that the question is not discriminating well.
2. values between 0.2 and 0.39 indicate good discrimination.
3. values 0.4 and above indicate very good discrimination.
- 4.

COPYING STYLES

Reliability Statistics

Cronbach's	
Alpha	N of Items
.959	60

Item-Total Statistics

	Scale	Corrected	Cronbach's	
	Mean if	if	Alpha if	
	Item Deleted	Item Deleted	Item Deleted	
		Correlation		
1. I try to grow as a person as a result of the experience.	126.16	800.387	.592	.958
2. I turn to schoolwork or other substitute activities to take my mind off things.	126.21	803.475	.778	.958
3. I get upset and let my emotions out.	126.39	818.760	.560	.958
4. I try to get advice from someone about what to do.	126.39	812.221	.640	.958
5. I concentrate my efforts on doing something about it.	126.31	812.045	.568	.958
6. I say to myself "this isn't real."	126.12	805.148	.694	.958
7. I put my trust in God.	126.13	799.482	.708	.958
8. I laugh about the situation.	126.48	817.175	.403	.959

9. I admit to myself that I can't deal with it, quit trying.	126.48	817.733	.522	.958
10. I restrain myself from doing anything too quickly.	126.51	811.175	.545	.958
11. I discuss my feelings with someone.	126.51	812.445	.563	.958
12. I use alcohol or drugs to make myself feel better.	126.56	807.864	.640	.958
13. I get used to the idea that it happened.	126.44	798.479	.693	.958
14. I talk to someone to find out more about the situation.	126.05	805.950	.515	.958
15. I keep myself from getting distracted by other thoughts or activities.	126.50	800.464	.644	.958
16. I daydream about things other than this.	126.38	818.161	.488	.959
17. I get upset, and am really aware of it.	126.57	814.709	.467	.959
18. I seek God's help.	126.22	805.769	.531	.958
19. I make a plan of action.	126.12	828.417	.266	.959
20. I make jokes about it.	126.28	801.240	.635	.958
21. I accept that this has happened and that it can't be changed.	126.39	804.240	.641	.958

22. I hold off doing anything about it until the situation permits.	126.34	807.708	.603	.958
23. I try to get emotional support from friends or relatives.	126.37	816.332	.510	.958
24. I just give up trying to reach my goal	126.42	807.861	.669	.958
25. I take additional action to try to get rid of the problem.	126.21	817.263	.428	.959
26. I try to lose myself for a while by drinking alcohol or taking drugs.	126.38	805.219	.648	.958
27. I refuse to believe that it has happened	126.19	815.925	.436	.959
28. I let my feelings out.	126.65	797.192	.789	.957
29. I try to see it in a different light, to make it seem more positive.	126.08	803.417	.590	.958
30. I talk to someone who could do something concrete about the problem.	126.25	814.938	.370	.959
31. I sleep more than usual.	125.95	823.123	.369	.959
32. I try to come up with a strategy about what to do.	125.99	814.510	.507	.958
33. I focus on dealing with this problem, and if necessary let other things slide a little.	126.12	819.475	.386	.959

34. I get sympathy and understanding from someone.	126.37	824.851	.381	.959
35. I drink alcohol or take drugs, in order to think about it less.	126.27	807.947	.631	.958
36. I kid around about it.	125.90	803.145	.573	.958
37. I give up the attempt to get what I want.	126.57	821.805	.558	.958
38. I look for something good in what is happening.	126.12	813.533	.597	.958
39. I think about how I might best handle the problem.	126.19	811.906	.599	.958
40. I pretend that it hasn't really happened.	126.53	817.694	.506	.958
41. I make sure not to make matters worse by acting too soon.	126.45	812.596	.580	.958
42. I try hard to prevent other things from interfering with my efforts at dealing with this.	126.57	815.151	.590	.958
43. I go to movies or watch TV, to think about it less.	126.52	817.271	.429	.959
44. I accept the reality of the fact that it happened.	126.55	815.346	.594	.958

45. I ask people who have had similar experiences what they did.	126.17	820.605	.407	.959
46. I feel a lot of emotional distress and I find myself expressing those feelings a lot.	126.10	822.856	.327	.959
47. I take direct action to get around the problem.	126.68	812.760	.532	.958
48. I try to find comfort in my religion.	126.55	824.577	.306	.959
49. I force myself to wait for the right time to do something.	126.59	813.206	.628	.958
50. I make fun of the situation.	126.19	815.002	.453	.959
51. I reduce the amount of effort I'm putting into solving the problem.	126.32	821.106	.405	.959
52. I talk to someone about how I feel.	126.36	827.810	.303	.959
53. I use alcohol or drugs to help me get through it.	126.23	813.236	.430	.959
54. I learn to live with it.	125.81	821.963	.318	.959
55. I put aside other activities in order to concentrate on this.	125.97	816.143	.394	.959
56. I think hard about what steps to take.	126.29	819.879	.365	.959

57. I act as though it hasn't even happened.	126.41	815.667	.522	.958
58. I do what has to be done, one step at a time.	126.63	817.043	.600	.958
59. I learn something from the experience.	126.29	807.860	.573	.958
60. I pray more than usual.	126.72	819.836	.436	.959

Reliability

The coping subscale consisted of 60 items ($\alpha=.959$), was found to have a excellent internal consistency.

Validity

Corrected Item-Total Correlation indicate that all items of the coping styles subscale had good to very good discriminant and convergent validity, all items were related to the construct the least item “I make a plan of action.” .had correction of $r=.266 > 0.2$ with the construct, suggesting good validity and hence these items measured what they purport to measure, that is copying styles.

Justification (Corrected Item-Total Correlation)

5. *values between 0 and 0.19 may indicate that the question is not discriminating well.*
6. *values between 0.2 and 0.39 indicate good discrimination.*
7. *values 0.4 and above indicate very good discrimination.*

APPENDIX M: EDITOR' S LETTER ON MANUSCRIPT PUBLICATION

ZIMBABWE EZEKIEL GUTI UNIVERSITY



Zimbabwe Ezekiel Guti University
Stand No. 1901
Off Shamva Road
P. O. Box 350
Bindura
Zimbabwe
Tel: +263 867 700 6136
Cell: +263 773 098 579
Email: ichirisa@zezu.ac.zw
innocent.chirisa@gmail.com

OFFICE OF THE VICE CHANCELLOR

27 June 2023

Dear Mr Mqemane Tshababa

I am pleased to advise you that your manuscript entitled "The nexus between personal life events and distress among medical students: A case of two newly established medical schools in Zimbabwe" received by us on the 10th of June 2023 met all the editorial requirements of our journal.

The manuscript is now undergoing a double-blind peer review process and we shall communicate the next stage of processing once we receive feedback from our reviewers.

Thank you for submitting your journal to the *Oikosis - The Zimbabwe Ezekiel Guti University Bulletin of Ecology, Science Technology, Agriculture and Food Systems Review and Advancement Vol 2 (Issues 1&2)* coming out around August this year.

Thank you

A handwritten signature in black ink, appearing to read "Chirisa".

Prof I Chirisa

On behalf of the Editor of the *Oikosis - The Zimbabwe Ezekiel Guti University Bulletin of Ecology, Science Technology, Agriculture and Food Systems Review and Advancement*

APPENDIX N: EDITORIAL ATTESTATION



NATIONAL UNIVERSITY OF SCIENCE AND TECHNOLOGY
FACULTY OF COMMUNICATION AND INFORMATION SCIENCE

DEPARTMENT OF PUBLISHING STUDIES

Miss Priscilla Nkomazana

Lecturer & Editor

National University of Science and Technology

P.O. Box AC 939, Ascot, Bulawayo

Zimbabwe

28 June 2023

TO WHOM IT MAY CONCERN

REF: CONFIRMATION OF EDITING OF MR MQEMANE TSHABABA's PhD THESIS

This letter serves to confirm that Mr Mqemane Tshababa's (Student Number: M173417) Doctor of Philosophy thesis entitled, **Sources and Levels of Distress among Medical Students at Two Newly Established Medical Schools in Zimbabwe**, has been fully edited. I, the undersigned, Priscilla Nkomazana conducted copy, language as well as structural editing on the above mentioned thesis.

Yours Sincerely

Priscilla Nkomazana

Lecturer & Editor

MA in Strategic Communication, MSU, Zimbabwe

BSc in Publishing Studies, NUST, Zimbabwe

priscilla.nkomazana@nust.ac.zw Cell+263 775323808

APPENDIX O: TURNITIN ORIGINALITY REPORT

Turnitin Originality Report

Processed on: 19-Jun-2023 10:05 PM EET
 ID: 2119242187
 Word Count: 54730
 Submitted: 1

Similarity Index	Similarity by Source	
17%	Internet Sources:	15%
	Publications:	7%
	Student Papers:	7%

SOURCES AND LEVELS OF DISTRESS AMONG MEDICAL STUDENTS AT TWO NEWLY ESTABLISHED MEDICAL SCHOOLS IN ZIMBABWE By Mqemane Tshababa

1% match ()	Razuwika, Jerita. "An evaluation of the effectiveness of the teaching of sexual and reproductive health education in Zimbabwean secondary schools", 2021
1% match ()	Senderayi, Patrick.. "Personality as a predictor of job stress among teachers' college lecturers in Zimbabwe.", 2021
< 1% match (Internet from 06-Sep-2022)	https://www.researchgate.net/publication/337790396 Reducing the Effects of Maternal Death Midwives%27 Strategies
< 1% match (Internet from 06-Dec-2015)	http://www.researchgate.net/profile/Muhamad_Saiful_Bahri_Yusoff/publication/215464657 Stress stressors coping strategies First year medical students in Malaysian public uni
< 1% match (Internet from 10-Jun-2022)	https://www.researchgate.net/profile/Mqemane-Tshababa/publication/355423017 Personality and coping associated with job stress among Zimbabwean Teachers' College Lecturers/links/619bdb5c61f0987720c58846/Personality-and-coping-associated-with-job-stress-among-Zimbabwean-Teachers-College-Lecturers.pdf
< 1% match (Internet from 17-Feb-2023)	https://www.researchgate.net/publication/331378847 Stress and Coping Strategies among Undergraduate Nursing and Medical Students at American International Medical Univ