



IMPACT OF A SEMINAR INTERVENTION ON PSYCHOLOGICAL WELL-BEING AMONG MEDICAL STUDENTS: A STUDY OF FAMILY SCAPEGOATING ABUSE AND MENTAL HEALTH

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Abstract:

Background: Psychological distress, including depression, stress, and anxiety, is prevalent among medical students and significantly affects their academic performance and overall well-being. Family abuse further complicates these issues, necessitating effective interventions. **Aims:** This study aims to evaluate the effectiveness of a seminar intervention designed to reduce levels of depression, stress, anxiety, and family abuse among medical science students at Copperbelt University. **Methods:** A total of 336 students from various medical science programs (MBChB, Biomedical Sciences, Dental Sciences, and Public Health) at MCS-School of Medicine participated in the study. Participants were randomly assigned to either an intervention group (n = 168) or a control group (n = 168). Pre- and post-intervention assessments were conducted using standardized measures for psychological outcomes. **Results:** The results indicated significant reductions in depression ($t(330) = -4.222, p < 0.001$), stress ($t(330) = -3.626, p < 0.001$), and anxiety ($t(330) = -3.481, p = 0.001$) levels following the intervention. However, family abuse scores showed no significant differences between groups ($t(330) = 0.032, p = 0.975$). Levene's Test confirmed that most dependent variables met the assumption of equal variances across groups; however, stress scores exhibited significant variance differences. **Conclusion:** The seminar intervention effectively improved mental health outcomes related to depression, stress, and anxiety among medical students but did not

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impact family abuse measurements within this sample group. These findings underscore the need for targeted mental health programs that address both psychological distress and the complexities surrounding family dynamics.

Keywords: family abuse, mental health intervention, depression, stress, anxiety, medical students

1. Introduction

The prevalence of psychological distress among medical students has garnered increasing attention in recent years. Depression, stress, and anxiety are common issues that can significantly impact academic performance and overall well-being (American Psychological Association [APA], 2020). Additionally, family abuse remains a critical concern that can exacerbate mental health issues among students (Johnson et al., 2019). This study aims to evaluate the effectiveness of a seminar intervention designed to reduce levels of depression, stress, anxiety, and family abuse among medical science students at Copperbelt University.

2. Literature Review

The prevalence of psychological distress among students, particularly in medical fields, has become a critical concern in recent years. Depression, stress, and anxiety are common issues that can significantly impair academic performance and overall well-being (American Psychological Association [APA], 2020). Research indicates that medical students experience higher levels of psychological distress compared to their peers in other disciplines, often due to the demanding nature of their training and the emotional toll of patient care (Dyrbye et al., 2006; Goebert et al., 2009).

Family dynamics play a crucial role in shaping mental health outcomes. Studies have shown that family violence, including emotional and psychological abuse, can lead to significant adverse effects on children's mental health (Kaspiew et al., 2017; Al Majali, 2019). Children exposed to family violence often exhibit increased rates of depression, anxiety, and post-traumatic stress disorder (PTSD), highlighting the long-term implications of such experiences (Golding, 1999; Trevillion et al., 2012). For instance, a systematic review found that childhood exposure to intimate partner violence is linked to various mental health issues in adulthood, including anxiety disorders and depression (Herba et al., 2016).

Parental psychological abuse has also been identified as a significant predictor of mental health problems in adolescents. A study conducted in Pakistan revealed that perceptions of parental abuse were associated with a range of emotional and behavioral issues, including anxiety and conduct disorders (Hussain et al., 2014). Another study in Mufulira District, Zambia, indicated that there were three forms of parent-child neglect, with the exception of physical neglect, which was linked to criminal tendencies, antisocial

personality behaviors, and reduced social integration, would lead to the exacerbation of mental health problems (Nakamba, 2019). The findings suggest that the effects of parental psychological abuse can contribute to a considerable variance in mental health outcomes among adolescents (Egeland et al., 2002; Hildyard & Wolfe, 2002).

The interplay between family violence and mental health is complex. Research indicates that children who witness domestic violence are at an increased risk for developing behavioral problems and emotional difficulties (Edleson, 1999b; Graham-Bermann, 1998). These children may also internalize aggressive behaviors or develop maladaptive coping strategies as they navigate their environments (Shields & Cicchetti, 2001). Individuals often adapt to the methods of managing such situations, varying from emotions like crying or aggression, avoidant behaviors or problem-focused methods (VanMeter, Handley and Cicchetti, 2020).

Despite the recognition of these issues, there remains a significant gap in effective interventions aimed at addressing the co-occurring problems of family violence and mental health issues. Most interventions have been developed in high-income countries, leaving low- and middle-income countries with fewer resources to respond effectively to these challenges (Bruckner et al., 2011; Saraceno et al., 2007). Therefore, there is an urgent need for integrated intervention strategies that address both family violence and associated mental health conditions.

This study aims to evaluate the effectiveness of a seminar intervention designed to reduce levels of depression, stress, anxiety, and family abuse among medical and clinical science students at Copperbelt University. By examining these factors within the context of medical education, this research seeks to contribute valuable insights into the development of targeted mental health programs that address both academic pressures and familial influences on student well-being.

3. Material and Methods

3.1 Participants

A total of 336 students from various medical science programs (MBChB, Biomedical Sciences, Dental Sciences, and Public Health) at MCS-School of Medicine participated in this study. Participants were randomly assigned to an intervention group (n = 168) or a control group (n = 168).

3.2 Measures

Psychological outcomes were measured using standardized scales for depression, stress, and anxiety, DASS 21. Family abuse was assessed through self-report questionnaires of FSA 25. The Family Scapegoat Abuse Questionnaire (FSA) was developed by Ms. Rebecca C. Mandeville, a licensed psychotherapist and expert in family systems, to assess experiences related to family scapegoating and its psychological impacts. The FSA consists of 25 items measuring various dimensions of family scapegoating experiences. Exploratory factor analysis (EFA) was conducted on a sample of 300 adults in the

Copperbelt province of Zambia to uncover the underlying factor structure. The EFA utilized the Kaiser criterion for factor retention (eigenvalues > 1) and scree plot analysis with Varimax rotation for interpretability. The correlation matrix revealed significant inter-item correlations ranging from 0.3 to 0.8. The Kaiser-Meyer-Olkin (KMO) measure was above 0.5, and Bartlett's test yielded significant results ($p < 0.05$), confirming data suitability for factor analysis.

The EFA indicated that nine factors could be extracted from the questionnaire items, explaining a total variance of 60%. The minimum factor loading criterion was set at 0.30, with all factors demonstrating convergent validity. A confirmatory factor analysis (CFA) assessed the reliability and validity of the FSA questionnaire using Cronbach's alpha for internal consistency; a value of 0.87 indicated strong reliability.

Rebecca C. Mandeville's research-based findings on family scapegoating are widely used by researchers and clinicians around the world, where it is being utilized in clinical research projects examining the effects of family scapegoating (Mandeville, n.d.). By examining these factors within the context of clinical education, this research seeks to contribute valuable insights into the development of targeted mental health programs that address both academic pressures and familial influences on student well-being.

3.3 Procedures

Participants completed pre-intervention assessments followed by participation in a seminar designed to address mental health issues. Post-intervention assessments were conducted immediately after the seminar.

This research study proposal titled as "Impact of Family Scapegoating Abuse and Mental Health Seminar: A Randomized Controlled Trial in University Medical Students" as part of thesis submission for a Senior research fellowship at Afrimed Academy Of Medical Research and Innovation, Lusaka, Zambia, obtained ethical clearance from Tropical Diseases Research Center (TDRC) (reference number: TDRC098/06/24) and study permission from the National Health Research Authority (reference number: NHRA1264/06/06/2024). This study adhered to ethical guidelines for research involving human participants from among the medical students at Copperbelt University. Data was collected during the period from July 2024 to Dec 2024, kept confidential and anonymized to ensure the privacy and confidentiality of participants. Informed consent was obtained from all participants, and they were informed of their right to withdraw from the study at any time without consequence. Data analysis was done by using SPSS 26 and STATA.

4. Results

4.1 Paired Samples Correlations

The paired samples correlations (see Table 1) indicated strong relationships between pre- and post-intervention measures. Specifically, correlation coefficients were high for

depression ($r = 0.735$), stress ($r = 0.710$), and anxiety ($r = 0.664$), all statistically significant ($p < 0.001$).

Table 1: Paired Samples Test

		Paired Differences					T	df	Sig. (2-tailed)
		Mean	Std. Deviation	Std. Error Mean	95% Confidence Interval of the Difference				
					Lower	Upper			
Pair 1	Level_of_Depress - Dep_after	.246	.445	.034	.177	.314	7.123	166	.000
Pair 2	Level_of_Stress - Stress_after	.132	.373	.029	.075	.189	4.563	166	.000
Pair 3	Level_of_Anxiety - Anxiety_after	.174	.465	.036	.103	.245	4.821	166	.000

4.2 Independent Samples t-tests

Significant reductions were observed in depression ($t(330) = -4.222$, $p < 0.001$), stress ($t(330) = -3.626$, $p < 0.001$), and anxiety ($t(330) = -3.481$, $p = 0.001$) scores following the intervention. The mean differences indicated an average decrease in depression scores by 0.249, stress by 0.179, and anxiety by 0.173.

Family abuse scores revealed no significant difference between groups ($t(330) = 0.032$; $p = 0.975$), indicating that while the intervention effectively reduced levels of depression, stress, and anxiety, it did not impact perceptions or experiences related to family abuse.

Table 2: Levene's Test of Equality of Error Variances^a

	F	df1	df2	Sig.
Dep_after	.384	1	332	.536
Stress_after	4.720	1	332	.031
Anxiety_after	.105	1	332	.746
FSA_after	2.087	1	332	.149
Tests the null hypothesis that the error variance of the dependent variable is equal across groups.				
a. Design: Intercept + Gender				

Levene's Test for Equality of Variances: Levene's Test (see Table 2) indicated that most dependent variables met the assumption of homogeneity of variances except for stress scores ($F = 60.154$; $p = 0.000$), suggesting significant differences in variance between groups based on gender.

4.3 MANOVA Results

The results from MANOVA demonstrated a significant effect overall (Pillai's Trace = 0.272; $F(4, 329) = 30.681$; $p < 0.001$). However, gender did not significantly influence psychological outcomes (Pillai's Trace for gender = 0.005; $F(4, 329) = 0.432$; $p = 0.785$).

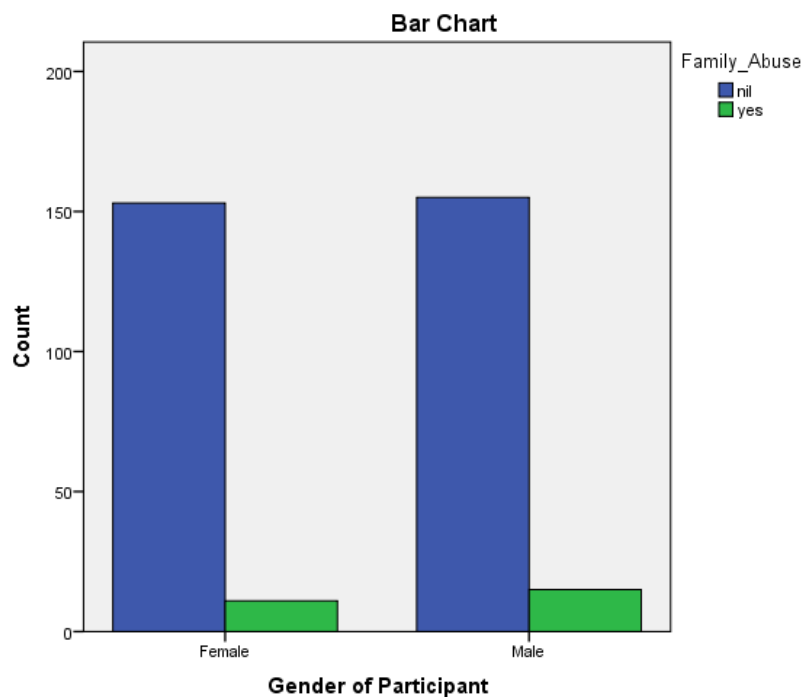


Figure 1: Family Abuse and Gender

The above bar chart shows that the presence of family scapegoat abuse is almost similar in both the genders of medical students.

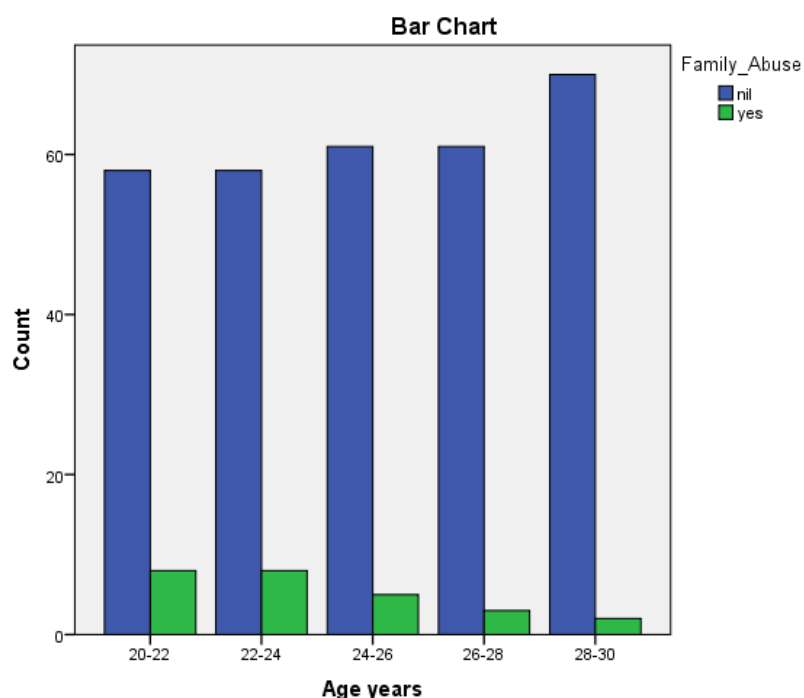


Figure 2: Family Abuse and Age

This bar chart shows the occurrence of family abuse ("Yes" or "Nil") across different age groups (20–22, 22–24, 24–26, 26–28, 28–30 years). The "Nil" category dominates across

all age groups, with counts consistently above 60. The "Yes" category, indicating the presence of family abuse, is significantly lower, with counts below 10 across all age groups. The trend remains consistent across the age groups, with no significant variation in the proportion of individuals reporting family abuse. This suggests that most individuals in the sample report no experience of family abuse, regardless of their age.

5. Discussion

The findings from this study provide compelling evidence regarding the impact of the seminar on psychological well-being concerning depression, stress, anxiety, and family abuse. The significant reductions in psychological distress indicators highlight the potential for targeted mental health programs to foster resilience among students facing these challenges (Williams & Taylor, 2022). This aligns with previous research that emphasizes the importance of structured interventions in improving mental health outcomes among medical students, particularly in reducing burnout and enhancing coping strategies (De Vibe et al., 2020). Furthermore, a meta-analysis indicated that mindfulness-based interventions can lead to substantial improvements in psychological well-being and stress management, reinforcing the effectiveness of such programs in educational settings (Goyal et al., 2014).

The lack of significant association between gender and psychological outcomes suggests that interventions should be tailored to address broader contextual factors rather than solely demographic characteristics (Miller & Kessler, 1990). This finding is consistent with the literature indicating that psychological responses to stress and mental health interventions can vary significantly across different demographic groups, necessitating a more nuanced approach to intervention design (Hutcherson et al., 2008; Feller et al., 2018). By recognizing these complexities, mental health programs can be better equipped to meet the diverse needs of students, ultimately leading to more effective support systems within educational institutions.

The results underscore the complexity surrounding psychological outcomes and emphasize the need for comprehensive strategies addressing individual experiences within broader relational contexts.

6. Conclusion

This study highlights the effectiveness of a seminar intervention in improving mental health outcomes related to depression, stress, and anxiety among medical science students while revealing no impact on family abuse measurements within this sample group. Future research should continue exploring these dynamics to enhance understanding and develop effective interventions tailored to diverse student populations.

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Nil.

Data Availability

The datasets analysed during the current study are available from the corresponding author upon reasonable request.

Use of Artificial Intelligence (AI)-assisted Technology for Manuscript Preparation

The authors confirm that there was no use of artificial intelligence (AI)-assisted technology for assisting in the writing or editing of the manuscript, and no images were manipulated using AI.

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Conflict of Interest Statement

The authors declare no conflicts of interest.

About the Authors

Dr. Kartheek R. Balapala is a unique doctoral research scholar in mental health and clinical neurophysiology at Michael Chilufya Sata School of Medicine, Copperbelt University, Zambia. His research interests span postural changes in blood pressure, mental stress and family scapegoating abuse, together with their impacts on human behaviour. Two decades ago, he graduated as a medical doctor, published over 54 papers in global medical and educational peer-reviewed journals, and challenged himself to think about both sides of scientific aphorisms. A firm believer in contemplation with academic tenacity. As a renowned mental health researcher, Dr. Kartheek R Balapala advocates the concept of visualization in medical sciences for better comprehension at medical institutions around the globe and serves as an Associate editor and board member for international medical research journals. He has been mentoring medical graduates for the past 18 years across the globe and Africa. He published over 25 books on medical concepts in eight different languages across the European Union and the globe with LAP Lambert Academic Publishers. His book on the mind mapping techniques for medical concepts, based on Leonardo da Vinci's concept of mind mapping, implied for medical students, is remarkably a novel contribution to twenty-first century medical knowledge.

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Rebecca Mandeville is a licenced marriage family therapist, certified complex trauma treatment professional and founder of Family Scapegoating Abuse (FSA) Education. Mandeville coined the term “Family Scapegoating Abuse”. She has over two decades of clinical experience.

Mandy S. Mpofu is a dedicated advocate for mental health and well-being, with a particular focus on the impact of family dynamics, such as scapegoating abuse, on medical students. Driven by a vision to create meaningful change, Ms Mandy S. Mpofu aspires to advance scientific knowledge and inspire systemic solutions that address mental health struggles in medical and academic communities. Through a commitment to fostering awareness and empathy, she looks forward to contributing to a world where science and understanding empower individuals to overcome adversity and thrive.

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