The Influence of Defence Mechanism on Academic Burnout and Associated Profiles among Undergraduate Students

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ABSTRACT

This cross-sectional study investigated the role of defence mechanism in academic burnout and its associated profiles. 248 females and 210 males, aged 16 to 30 years (M = 19.87, SD = 2.338) participated in the study. 56.9% were from Covenant University and 43.01% from Lagos State University. Data was collected using Maslach Burnout Inventory – General Survey for Students and Defence Mechanism Rating Scale-Self-Report Scale 30. Results indicated that students predominantly utilizing mature defence mechanisms reported lower mean scores for emotional exhaustion and cynicism, but higher for professional efficacy. Binomial logistic regression showed that, overall defensive functioning significantly predicted the occurrence of negative burnout profiles indicative of high emotional exhaustion, cynicism, or professional inefficacy (X^2 (1) = 19.252, p < 0.05). However, the prediction of the specific burnout profile was not supported (X^2 (1) = 1.405, p > 0.05). Mature defensive functioning significantly predicted the positive engagement profile (X^2 (1) = 27.040, p < 0.05). These findings underline the complex interplay between defence mechanisms and burnout. The study contributes to a deeper understanding of how defence mechanisms influence academic burnout and highlights the potential for interventions targeting adaptive defence strategies to mitigate burnout's negative impacts.

Keywords: Academic burnout, Emotional exhaustion, Cynicism, Professional Efficacy, Defence mechanism

INTRODUCTION

An indication of the prevalence of burnout is its inclusion in the 11th Revision of the International Classification of Diseases (ICD-11) published by the World Health Organisation. Although not categorised as a medical condition, it is significant enough to be recognised as a reason for which "people contact health services" (WHO, 2019). Although its inclusion is limited to only the occupational context (WHO, 2019), students are not exempt from burnout (Adekeye et al., 2017, Obekpa et al., 2020).

Three dimensions are crucial in understanding the complicated experience of burnout: emotional exhaustion, cynicism, and professional efficacy (Maslach et al., 2017). Burnout is not a dichotomous construct; rather, it exists on a continuum, ranging from low to high degrees across the three burnout dimensions (Maslach et al., 2017; Maslach & Leiter, 2022). At any point in time, an individual's experience falls along the continuum of exhaustion to energetic in terms of individual effort; from a cynical and distant social attitude to active engagement; and from feelings of inefficacy to a positive sense of successful accomplishment (Maslach & Leiter, 2022). Different combinations of these dimensions give rise to distinct profiles, with burnout representing the endpoint of this continuum characterized by elevated emotional exhaustion, cynicism, and diminished efficacy (Maslach & Leiter, 2022). Conversely, the other endpoint is marked by

engagement—a state of productivity and contentment, epitomized by positive experiences of the burnout dimensions (Maslach & Leiter, 2022; Maslach & Leiter, 2007). In this context, engagement is multidimensional, encompassing high energy (reflected in low emotional exhaustion), profound involvement (reflected in low cynicism), and high evaluation of efficacy (Maslach & Leiter, 2017). The other three burnout profiles – overextended, disengaged, and ineffective – were classified based on high scores in emotional exhaustion, high scores in cynicism, or low scores in professional efficacy respectively.

Burnout has detrimental implications for the psychological and physical well-being (Salvagioni et al., 2017), productivity (Salmela-Aro et al., 2009), and thus, prospects of undergraduate students who are at a pivotal moment in their lives. Considering the prevalence of burnout among undergraduate students (Adekeye et al., 2017, Obekpa et al., 2020), it is imperative to examine the coping and adaptive mechanisms employed. One of such psychological constructs essential to the maintenance of psychological health when exposed to stress is "Defence mechanism". This psychological adaptational mechanism serves to relieve stress and perceived adversity (Cramer, 2015). When faced with stress, three forms of coping responses are triggered: voluntary mobilisation of social support, voluntary coping strategies, and involuntary coping mechanisms. The third category of involuntary coping mechanisms (defence mechanisms) entails the utilisation of unconscious mechanisms to lessen the disorganising effects of sudden stress (Vaillant, 2011). These mechanisms, rooted in psychoanalytic theory, play a protective role in managing stressors (internal and external), as well as excessive anxiety, thus protecting an individual from the emotional consequences of adversity and from losing self-esteem (Cramer, 1998; Cramer, 2015). Unlike other adaptation mechanisms, which primarily employ conscious strategies (i.e., coping mechanisms), defence mechanisms operate unconsciously, and are only observable through defensive behaviours (Cramer 2015; Cramer, 1998). These mechanisms form a part of normal, everyday functioning essential for normal psychological development (Cramer, 2015).

Defence mechanisms may differ in the specificity of function, but they ultimately serve the same function: the protection of self (Cramer, 2008). While all defence mechanisms can prove adaptive in certain situations, they can all be grouped into clusters based on their typical level of adaptiveness (Metzger, 2014) considering psychological maturity (level of maturity or immaturity of the defences), complexity of cognitive operations involved in the defence, or chronological age (developmental level) (Cramer, 2008). Prominent utilization of mature defence mechanisms correlates with adaptive functioning. Mature mechanisms serve as protective factors by fostering a more balanced, realistic approach to internal and external stressors, synthesising and reducing sources of conflict rather than distorting or denying them (Metzger, 2014). Positive personality traits such as high self-esteem, self-confidence, competence, empathy, an internal locus of control, outgoingness, and a secure attachment style have been found to be linked with mature defences, which are highly adaptive (Cramer, 2008). In contrast, the adoption of lower adaptive defence mechanisms, particularly immature defences, is related to maladaptive functioning and unfavourable traits, such as self-centeredness, irresponsibility, and anxiety (Cramer, 2008). Both neurotic and immature defence mechanisms are less adaptive and may reflect some degree of maladaptive functioning. In a situation where mature defences cannot be activated or they prove ineffective in coping with a stressful situation, individuals revert to less adaptive mechanisms (Di Giuseppe et al., 2021). This shift can occur as a means of managing overwhelming distress and protecting oneself from the full impact of the stressor.

Defence mechanisms become integral for individuals facing burnout as they unconsciously deploy these strategies to cope with the psychological strain. Regan et al. (2009) explored the relationship between defence mechanisms and emotional exhaustion and found significant associations. Although no direct association was observed between mature defence mechanisms and emotional exhaustion, less adaptive defensive functioning was negatively correlated with emotional exhaustion. In addition, higher levels of emotional exhaustion were observed among individuals employing immature defence styles. Furthermore,

Di Giuseppe et al. (2021) found that higher mature defensive functioning, as well as higher overall defensive functioning were related to a greater personal accomplishment and, conversely, to lower emotional exhaustion and cynicism. Thus, it can be inferred that high overall defensive functioning – indicative of higher use of defence mechanisms – potentially mitigates the risk of burnout, while mature defence mechanisms contribute to stress alleviation and may predict the opposite burnout profile. In line with the stipulation of psychoanalytic theory, defence mechanisms should protect students from school-related anxiety that leads to burnout.

Central to defence mechanism theory is the notion that defence mechanism usage increases under conditions of stress, thereby reducing the conscious experience of anxiety or other aversive emotions (Cramer, 2008). Therefore, it is imperative to study the use of defence mechanisms under stress-invoking situations. The study aimed to investigate the role of defence mechanisms in academic burnout. Thus, the study seeks to address the following questions: (1) What is the difference in levels of cynicism, emotional exhaustion, and professional efficacy between undergraduate students who employ majorly low adaptive defence mechanisms and those who employ majorly high adaptive defence mechanisms? (2) Would overall defensive functioning predict high levels of emotional exhaustion, cynicism, professional efficacy and the presence of academic burnout among undergraduate students? (3) Would high adaptive defensive functioning predict the presence of academic engagement?

Hypotheses

1. Individuals who majorly employ low adaptive defence style will report higher levels of cynicism and emotional exhaustion, but lower professional efficacy than those who employ majorly high adaptive.
2. Overall defensive functioning will significantly predict high levels of at least one of the burnout dimensions.
3. Overall defensive functioning will significantly predict the presence of academic burnout.
4. High adaptive defence will significantly predict the presence of academic engagement.

METHODS

Design

This study employed a cross-sectional survey design, enabling data collection at a specific point in time from a sample of the target population. Ethical approval for the study was obtained from the Health Research Ethics Committee of Covenant University, Ota, Ogun State, Nigeria.

Participants

Data was obtained from 458 undergraduate students of two Nigerian universities – Covenant University and Lagos State University respectively. They were selected through stratified random sampling. The main stratum was determined by the type of university, dividing participants into two main groups, each representing a public and a private university. Within each stratum, further divisions were made based on gender, and subsequently level of study. Participants comprised 248 (54.1%) females and 210 (45.9%) males. Participants' age ranged from 16 to 30 years (M = 19.87, SD = 2.338). 56.9% of the participants was drawn from Covenant University and 43.01% from Lagos State University.

Instruments

Maslach Burnout Inventory General Survey for Students (MBI-SS) and Defence Mechanism Rating Scale-Self-Report Scale 30 (DMRS-SR-30) were utilised for the study.

The MBI-GS(S) is a 15-item self-report measure scored on a 7-point Likert scale to assess burnout on a continuum across three dimensions: exhaustion (5 items), cynicism (4 items) and efficacy (6 items). The instrument does not provide a single continuous burnout score; individuals are categorised into the five burnout profiles using standardised scores (Maslach et al., 2017).

The DMRS-SR-30, based on the Defence Mechanism Rating Scale (DMRS), is a 30-item (hence the 30 in its name), 5-point scale measuring 28 defence mechanisms hierarchically organised into seven levels of adaptiveness (in dealing with stress and conflict) which are further organised into three defensive categories (Prout et al., 2021). The three defensive categories are: the immature defensive category, the neurotic defensive category, and the mature defensive category (Prout et al., 2021). An overall defensive score (a total score) is obtained that indicates an individual's level of defensive maturity.

Instrument	No. of Items	Cronbach's Alpha
MBI-SS		
Emotional Exhaustion	5	0.815
Cynicism	4	0.785
Professional Efficacy	6	0.792
DMRS-SR-30	30	0.885

Data Analysis

After the questionnaires were retrieved, they were carefully reviewed for completeness and adherence to the instructions and response format. During this data cleaning, data sets with missing or irregular responses were eliminated. Data analysis was conducted in two stages: preliminary analysis and hypothesis testing. During the preliminary analysis stage, the normality of quantitative data was checked using the histogram. Values of asymmetry and kurtosis between -1 and +1 were considered sufficient to prove normal univariate distribution (George & Mallery, 2019). All the variables fell within the excellent range of acceptable variables for further analyses.

RESULTS

Descriptive Statistics

Table 1 Composition of participants by level in university

Level	Frequency	Percent	Cumulative Percent
100	82	17.9	17.9
200	109	23.8	41.7
300	84	18.3	60
400	140	30.6	90.6
500	43	9.4	100
Total	**458**	**100**	

The distribution of participants by their level in the university is presented in Table 1. The largest proportion of participants were in their fourth year of study, comprising 30.6% of the total sample. Subsequently, second year students represented 23.8% of participants, followed by third year students at 18.3%, and first year students at 17.9%. Participants in the fifth year accounted for the smallest proportion of participants,

with a representation of 9.4% within the sample. Table 2 displays the descriptive statistics of the variables in the study.

Table 2 Descriptive statistics of all continuous variables

	Variable	N	Minimum	Maximum	Mean	SD
MBI	Emotional Exhaustion	458	0	6	3.8118	1.43862
	Cynicism	458	0	6	2.6337	1.6512
	Professional Efficacy	458	0.67	6	4.1854	1.23245
DMRS-SR-30	Mature Defence Mechanism	458	14.63	48.6	32.7627	5.45248
	Neurotic Defence Mechanism	458	12.28	36.42	24.7702	3.52095
	Immature Defence Mechanism	458	22.82	57.72	42.4578	4.97159
	Overall Defensive Functioning	458	3.94	5.42	4.7522	.23805

Hypotheses Testing

Within the sampled population, participants majorly employed mature and immature defences to the exclusion of neurotic defence mechanism. Using an independent samples t-test, the difference in the levels of emotional exhaustion cynicism and professional efficacy across the two defence styles (high and low adaptive) was measured. Table 3 indicates that there is a significant difference in the mean score between the two defence style groups with respect to their levels of burnout dimensions. Students who primarily utilised low adaptive defence styles (immature) exhibited higher mean scores for emotional exhaustion and cynicism, but lower mean scores for professional efficacy compared to those predominantly employing high adaptive defence styles (mature).

Table 3 Differences in emotional exhaustion, cynicism, and professional efficacy between the high adaptive defence group (N=80) and the low adaptive defence group (N=378).

	High Adaptive Defence Style		Low Adaptive Defence Style		
	Mean	SD	Mean	SD	t
Emotional Exhaustion	3.31	1.5	3.92	1.4	-3.475**
Cynicism	2	1.69	2.77	1.61	-3.854**
Professional Efficacy	4.59	1.09	4.1	1.24	3.304**

$*p < .05.$ $**p < 0.001$

Binary logistic regression was used to examine the remaining hypotheses because of the absence of a continuous total score for burnout. Table 4 shows that high scores in at least one of the burnout dimensions are indicative of one of the four negative profiles of burnout, overextended, disengaged and ineffective. Overall defensive functioning significantly predicted high levels of either emotional exhaustion, cynicism, or professional efficacy (negative profiles), accounting for only 9% (Nagelkerke R^2) of the variance ($X^2(1)$ = 19.252, p<0.05). Higher overall defensive functioning was associated with a higher likelihood of experiencing high levels of at least one of the burnout dimensions (OR = 7.245, 95% CI [2.991, 17.547]). Consequently, elevated overall defensive functioning was a predictor of experiencing one of the negative profiles, including burnout, overextended, disengaged, and ineffective states. However, in terms of predicting the specific burnout profile, the results were non-significant ($X^2(1)$ = 1.405, p>0.05).

Table 4 Regression analysis of predictor of negative burnout profiles

Independent Variable	B	SE	Wald's X^2	P	Odds Ratio	95% CI
ODF	1.98	0.451	19.252	0.000	7.245	[2.991, 17.547]
Constant	-10.272	2.165	22.509	0.000	0.000	

ODF: Overall Defensive Functioning

High adaptive (mature) defensive functioning significantly predicted the positive profile of engagement, accounting for only 8.7% (Nagelkerke R^2) of the variance ($X^2(1) = 27.040$, $p<0.05$) (Table 5). High adaptive defensive functioning was associated with a high likelihood of experiencing a positive profile of engagement (OR = 1.109, 95% CI [1.067, 1.153]).

Table 5 Regression analysis of predictor of positive profile (engagement)

Independent Variable	B	SE	Wald's X^2	P	Odds Ratio	95% CI
Mature defence mechanism	0.104	0.02	27.04	0.000	1.109	[1.067, 1.153]
Constant	- 4.269	0.68	39.421	0.000	0.014	

SUMMARY OF FINDINGS

Students who primarily utilised low adaptive defence mechanisms experienced higher emotional exhaustion and cynicism, but lower professional efficacy compared to students who primarily utilised high adaptive defence mechanisms. In addition, high overall defensive functioning predicted the experience of negative profiles (burnout, overextended, disengaged and ineffective) but not the specific burnout profile. Also, mature defence mechanism significantly predicted the positive profile of engagement.

DISCUSSION

In line with the psychoanalytic theory, and previous studies (Regan et al., 2009; Di Giuseppe et al., 2021; Foloştină & Tudorache, 2012; Hursitoglu et al., 2019), the various defensive styles have varying effects on stress and the burnout dimensions. Mature defence mechanisms have a more positive impact than immature defence mechanisms (Metzger, 2014; Cramer, 2008); hence a significant difference in the three burnout dimensions between the predominantly mature group and the immature group. Students also majorly employed immature defence mechanisms.

Contrary to Di Giuseppe et al. (2021) who found an inverse relationship between overall defensive functioning and the burnout dimensions, thus suggesting a protective role, findings in this study showed that high levels of overall defensive functioning were associated with an increased likelihood of experiencing negative burnout profiles. However, there was no direct prediction of the presence of only the burnout profile. It is important to acknowledge that high overall defensive functioning encompasses both high adaptive (mature) and high lower adaptive (neurotic and immature) functioning, which can have opposing effects on the various burnout dimensions. This complex interplay might contribute to the incongruence with Di Giuseppe et al.'s findings. Moreover, it's worth noting that defence mechanisms, as coping strategies, inherently fail to address the root causes of the problematic situation or stimuli (Cramer, 1998). In the long-term, these mechanisms often prove ineffective in providing lasting solutions.

The significant impact of mature defence mechanisms on burnout dimensions aligns with the assertions of the Psychoanalytic Anxiety-Defence Model, which posits these mechanisms as protective measures for the self (Di Giuseppe et al., 2021). Accordingly, the utilisation of mature defence mechanisms predicts the positive profile of engagement. This positive profile encompasses a favourable experience across the three

burnout dimensions: low emotional exhaustion and cynicism coupled with high professional efficacy.

LIMITATIONS

While the study provides valuable insight into academic burnout and defence mechanisms among undergraduate students, it is important to acknowledge its limitations.

Firstly, the study relied on a sample of undergraduate students from only two states in south-west Nigeria (Lagos and Ogun state), which may limit the generalisability of the findings to other student populations in the country. Additionally, the study did not consider potential differences based on age, gender, and level in the university, which could be important extraneous variables influencing the results.

Another limitation is the cross-sectional research design, which restricts the ability to establish causal relationships or determine the temporal sequence of the variables. Moreover, the data collected relied on self-report measures, which are subject to response bias and social desirability effects. Participants may have provided answers that they perceived as more socially acceptable or may have had difficulty accurately assessing their own levels of burnout or defence mechanisms. While the use of DMSRS-SR-30 as a self-report scale of defence mechanisms is supported by research, it is faced with the logical problem of self-reporting on the use of mental mechanisms, which the individual is unaware of without introspection. Furthermore, studies have shown differences in results depending on whether self-report or observational measures of defence mechanisms were used (Cramer, 2015).

CONCLUSION AND RECOMMENDATIONS

The current study provided data on the role of defence mechanism in academic burnout and its associated profile. Results revealed that individuals primarily relying on immature defence mechanisms exhibited higher levels of burnout dimensions. Mature defence mechanism reduced the experience of emotional exhaustion and cynicism while bolstering professional efficacy, thus, contributing to a positive and engaged experience. However, high overall defensive functioning predicted the experience of negative profiles.

These findings underscore the importance of cultivating adaptive strategies and mechanisms that facilitate a balanced approach to the challenges inherent in academic settings. Strategies such as psychoeducation, counselling, and self-reflection exercises can be implemented to enhance mature defence mechanisms.

Nonetheless, it is noteworthy that defence mechanisms, while influential, accounted for only a small proportion of the observed variance. Therefore, it is imperative to explore other variables, particularly conscious coping strategies, which may play a more substantial role in academic burnout and its associated profiles.

REFERENCES

1. Adekeye, O. A., Alao, A. A., Odukoya, J. A., Adejuwon, G. A., & Solarin, M. A. (2017). Predicting Perceived Psychological Burnout among Sophomore Students of Covenant. *The Social Sciences*, *12* (11), 2022 – 2027. 10.36478/sscience.2017.2022.2027
2. Cramer, P. (2008, September). Seven Pillars of Defence Mechanism Theory. *Social and Personality Psychology Compass*, *2*(5), 1963-1981. https:// doi.org/ 10.1111/ j.1751-9004 .2008.00135.x
3. Cramer, P. (2015, December). Understanding Defence Mechanisms. *Psychodynamic Psychiatry*, *43* (4), 523 – 552. Guilford Press Periodicals. https:// doi.org/ 10.1521/ pdps .2015 .43.4.523
4. Di Giuseppe, M., Nepa, G., Prout, T. A., Albertini, F., Marcelli, S., Orrù, G., & Conversano, C. (2021, May 14). Stress, Burnout, and Resilience among Healthcare Workers during the COVID-19 Emergency: The Role of Defence Mechanisms. *International Journal of Environmental Research and Public Health*

, *18*(10). MDPI. https://doi.org/10.3390/ ijerph18105258

5. Di Giuseppe, M., & Perry, J. C. (2021, October 15). The Hierarchy of Defence Mechanisms: Assessing Defensive Functioning with the Defence Mechanisms Rating Scales Q-Sort. *Frontiers in Psychology*, *12*. https://doi.org/10.3389/fpsyg.2021.718440

6. Foloştină, R., & Tudorache, L. A. (2012, December 24). Stress Management Tools for Preventing Burnout Phenomenon at Teachers from Special Education. *Procedia – Social and Behavioral Sciences* , *69*, 933-941. ScienceDirect. https://doi.org/10.1016/j.sbspro .2012 .12.018

7. George, D., & Mallery, P. (2019). *IBM SPSS Statistics 25 Step by Step: A Simple Guide and Reference* (15th ed.). Routledge, Taylor & Francis Group.

8. Hursitoglu, O., Findikli, E., Saglam, F., & Doganer, A. (2019, January). Resident Burnout may be Correlated with Immature and Neurotic Ego Defences in a Sample from Turkey. *Psychiatry and Behavioral Sciences*, *9*(3), 69-77. ResearchGate. https:// doi.org/ 10.5455/ PBS.20181015100722

9. Maslach, C., Jackson, S. E., Leiter, M. P., Schaufeli, W. B., & Schwab, R. L. (2017). *Maslach Burnout Inventory Manual* (4th ed.). Mind Garden, Inc

10. Maslach, C., & Leiter, M. (2007). Burnout. In *Stress: Concepts, Cognition, Emotion, and Behaviour: Handbook of Stress Series, Volume 1* (2nd ed., 358-362). Elsevier Science. 10.1016/B978-0-12-800951-2.00044-3

11. Maslach, C., & Leiter, M. P. (2022). *The Burnout Challenge: Managing People's Relationships with Their Jobs*. Harvard University Press.

12. Metzger, J. A. (2014, March 27). Adaptive Defence Mechanisms: Function and Transcendence. *Journal of Clinical Psychology*, *70*(5), 478-488. Wiley Online Library. https://doi.org/10.1002/jclp.22091

13. Obekpa, O. I., Amedu, M. A., & Udofia, O. (2020, June). Prevalence and Pattern of Burnout Syndrome and Associated Quality of Life amongst Undergraduates of a Tertiary Institution in Northern Nigeria. *Journal of Epidemiological Society of Nigeria*, *3*(1), 39-51. https:// jeson.org.ng/index.php/jeson/article/view/6

14. Prout, T. A., Di Giuseppe, M., Zilcha-Mano, S., Perry, J. C., & Conversano, C. (2021, June 2). Psychometric Properties of the Defence Mechanisms Rating Scales-Self-Report-30 (DMRS-SR-30): Internal Consistency, Validity and Factor Structure. *Journal of Personality Assessment*, *104*(6), 833-843. Taylor and Francis Online. https:// doi.org/ 10.1080/ 00223 891.2021.2019053

15. Regan, A., Howard, R. A., & Oyebode, J. R. (2009). Emotional Exhaustion and Defence Mechanisms in Intensive Therapy Unit Nurses. *The Journal of Nervous and Mental Disease*, *197*(5), 330-336. NMD.0b013e3181a20807

16. Salmela-Aro, K., Kiuru, N., Leskinen, E., & Nurmi, J.-E. (2009, October). School Burnout Inventory (SBI): Reliability and Validity. *European Journal of Psychological Assessment*, *25*(1), 48-57. ResearchGate. https://doi.org/10.1027/1015-5759.25.1.48

17. Salvagioni, D., Melanda, F. N., Mesas, A. E., González, A. D., Gabani, F. L., & Andrade, S. M. (2017, October 4). Physical, psychological, and occupational consequences of job burnout: A systematic review of prospective studies. *PLoS One*, *12*(10). PubMed Central. 10.1371/ journal.pone.0185781

18. Vaillant, G. E. (2011, September 13). Involuntary coping mechanisms: a psychodynamic perspective. *Dialogues in Clinical Neuroscience*, *13*(3), 366–370. PubMed Central. https:// doi.org/10.31887/DCNS.2011.13.2/gvaillant

19. WHO. (2019, May 28). *Burn-out an "occupational phenomenon": International Classification of Diseases*. World Health Organization (WHO). Retrieved October 11, 2022, from https:// www.who.int/ news/item/28-05-2019-burn-out-an-occupational-phenomenon-international - classification-of-diseases.