

Effects of Extrinsic Motivation on Nursing Student's Academic Performance in Selected Schools in Niger State

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Abstract

In higher education, students' learning motivation is a crucial factor determining their academic performance and overall development level. This is to examine the perceived effect of extrinsic motivation on student's academic performance and their psychological state. A cross-sectional research design was employed to engage 314 out of the 1307 nursing students in the nursing schools in Niger State, Nigeria. Self-administered questionnaire was applied in data collection. Validity was ensured using experts' help who went through the questionnaire to ensure both face and content validity. While the reliability of this instrument was ensured through test re-test method in a pilot study conducted by the researcher using nursing students who were part of the study population but who did not participate in the study. Ethical approval was obtained from the Institutional Review Boards of the Nursing schools. SPSS version 26.0 was applied taking 0.05 margin of error. The findings revealed a socio-demographic data of male 32.5% and female 66.8%, age range of 18-25(64.4%) and 25.7% for 26-30 age category. and a complex relationship between motivation, psychological states, and academic performance. Notably, extrinsic motivation also demonstrates a positive and significant effect ($\beta = 0.71$, $p < 0.05$) with psychological status and academic performance ($\beta = 0.63$, $p < 0.05$), challenging conventional notions about its potential negative impact. In conclusion, contrary to the prevailing notions, the study found positive associations between extrinsic motivation, psychological states, and academic performance.

Keywords: Extrinsic motivation, Nursing student, Academic performance, psychological state

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Introduction

Chai (2018) define academic achievement as a definition of a learner's performance of teaching and learning assessments, such as final examination results, achieved by the person in school. Thus, academic achievement expresses the academic quality of a learner empirically.

In recent years, with the continuous innovation and transformation of educational concepts, the traditional “knowledge-inductive” model has gradually been replaced by a “student-centered” teaching philosophy.

Nursing students experience stress related to their academic and clinical settings, and a lack of preparation is associated with an increased risk of clinical and academic failure. Most students are unable to adjust to be able to cope with stress. This leads to different behavioral patterns such as alcoholism and substance abuse such as “dagga” (marijuana) and codeine to escape the harsh reality. This eventually leads to absentia in school and an increased number of schools dropouts. (Hachinto & Kasisi, 2022).

Students with elevated motivation levels experience fewer instances of academic depression and exhibit higher levels of self-assurance (Abdolrezapour *et al.*, 2023; Belinda, 2023). The lack of academic motivation cause students to develop negative attitude, lose interest in learning or even dropout (Shakurnia *et al.*, 2015; Wang, 2019)

A pilot study conducted in 2019 provided the evidence of lack of adequate academic motivation among students of nursing schools in the state with indigent students performing lower than students who are not from the state. Some of the indigent students simply drop out school resulting in lack of accomplishing their goals which has led to poor nurses turn over and inadequate nursing staff in our various hospitals.

Research has been conducted on this issue by several researchers in an attempt to establish the factors responsible for this academic downturn. However, most of the researchers have not considered the student's motivation as a possible predictor of student performance especially in nursing schools in Nigeria state, Nigeria. This is a major gap that this study seeks to fill.

This general objective of this study was to examine the perceived effect of extrinsic motivation on student's psychological states and academic performance at selected nursing schools in Niger state, Nigeria.

The specific objectives were to assess:

- I. The student's level of knowledge of Motivation among students in nursing schools in Niger state, Nigeria.
- II. The perceived effect of extrinsic motivation on nursing student's psychological state in nursing schools in Niger State
- III. The perceived effect of extrinsic motivation on nursing student's academic performance in the selected nursing schools in Niger state.

The research questions were as follows:

- I. What is the student's level of knowledge of Motivation among students in nursing schools in Niger state, Nigeria?
- II. What is the perceived effect of extrinsic motivation on nursing student's psychological state in nursing schools in Niger State?
- III. What is the perceived effect of extrinsic motivation on nursing student's academic performance in nursing schools in Niger state?

The hypothesis put forward included

H₀₁ There is no significant perceived effect of extrinsic motivation on nursing student's psychological status in the nursing schools in Niger state.

H₀₂ There is no significant perceived effect of extrinsic motivation on nursing student's academic performance in the nursing schools in Niger state.

Methodology

The study adopted a cross-sectional design. The philosophical principle that underpins a cross-sectional design is positivism. Positivism is the belief that social reality is observable and that patterns observed through surveys can be generalized. A cross-sectional design is a research method that involves collecting data from multiple cases at a single point in time. This type of study

is used to identify relationships between variables and generate descriptive statistics.

The research population of this study was 1307 nursing students at Niger state College of Nursing and specifically, Schools of Nursing Bida and Kontagora as well as the nursing students of the Standard College of nursing Minna. (School records, 2023). A total of 314 were recruited in the study.

For this study, total of 314 were recruited. This sample size was determined using sample size determination table by Krejcie and Morgan; (1970). Sample Size for $\pm 5\%$ and $\pm 10\%$ Precision Levels where Confidence Level is 95% and $P=0.5$. (Source: Krejcie & Morgan; 1970).

A purposive sampling was used to select the four nursing schools in Niger state whose total student population added to one thousand three hundred and seven (1307). This population met the criteria for selection in the study which was the availability of students in their intermediate and final years of study and post basic nursing students as well(these categories of students have spent at least one year in these schools). Based on the school's population, a proportionate sampling method was adopted to obtained samples to be used in the study from each of the schools selected. Simple random sampling was finally used to select the final total of 314 nursing students.

The instrument used for the study was a self-developed questionnaire entitled "Students' Perceived Effect of Extrinsic Motivation on Psychological state and Academic Performances" (SPEMPSAP). The sets of questions in the questionnaire were designed to help determine the perceptions of nursing students on extrinsic motivation and how it affect their psychological states and academic performances. This tool was arrived at after comparing it to similar tool from other authors with similar research interest. The purpose and scope of the research guided the design of the tool, clarifying the research questions, hypotheses, objectives, and expected outcomes. Other considerations included the target population, sampling method, data sources, and data analysis plan. The validity and reliability of the instrument were ensured as indicated in the sections under validity and reliability of this instrument.

The questionnaire consisted of five sections. Section A was designed to elicit socio-demographic information of respondents.

Section B was designed to elicit information on nursing student's level of knowledge of motivation in the nursing schools in Niger state,

Section C was to obtain information regarding the perceived effects of extrinsic motivation on nursing students' psychological states in the nursing schools in Niger state.

Section D was designed to collect information on the perceived effects of extrinsic motivation on the academic performance of nursing students in nursing schools in Niger state. The questionnaire was scored as follows; items in section A were not scored but expressed in percentages and frequency table of respondents. In section B-D: responses were scored using the aggregates of frequencies and percentages and analyzed.

According to Kothari (2004) Validity is the most critical criterion that indicates the degree to which an instrument measures what it is supposed to measure. Validity of a research instrument assesses the extent to which the instrument measures what it is designed to measure (Robson, 2011). It is the degree to which the results are truthful. Validity is trying to explain the truth of research findings as explained by Zohrabi, (2013). For example, does IQ test measure intelligence? Validity is measured using both theoretical and empirical evidence. Theoretical assessment is where an idea of a construct is translated or represented into an operational measure. This was done by panel of experts who are my supervisors/ lecturers both from the nursing department and Faculty of education in this University that rated suitability of each item and evaluates its fitness in the definition of the construct. They also ensure that the face and content validity of the Questionnaire was good. The tool measured both the psychological states and academic performances it was meant to measure.

Then afterwards all necessary amendments were made based on their advice. Then content validity index was calculated using the following formula.

$$CVI = \frac{\text{NUMBER OF ITEMS RATED AS RELEVANT}}{\text{NUMBER OF ITEMS OF THE QUESTIONNAIRE}} \quad 47/53 = 0.887$$

The high content validity index means that the Questionnaire measured what it was meant to measure.

According to Drost (2011), reliability is “the extent to which measurements are repeatable when different people use the measurement on different occasion, under different condition, supposedly with alternative instruments which measure the construct or skill”. The reliability of this instrument was ensured through test re-test method in a pilot study conducted by the researcher using nursing students who were part of the study population but who did not participate in the study. The Pilot study took place three months before the study and in total seventy participants were used for the pilot study. The instrument was scrutinized for adequacy and completeness by the research panel consisting of two Professors and a Senior lecturer.

Out of the 314 questionnaires administered, 292 were found to be valid as these were well filled and returned to the researchers by the research assistants. Some were simply returned unfilled while others were wrongly filled and returned. The valid data collected was compiled, manually sorted out, coded using Statistical Package for Social Science (SPSS) software version 26.0 and descriptive statistics in the form of frequency, tables and percentages was utilized also.

Section A was analyzed using frequencies and percentages as this segment was concerned only with the Bio data of respondents and needs no further in-depth analysis.

Section B which was on the knowledge of motivation was analyzed using mean scores and percentages and as ‘good, moderate or poor knowledge’

Sections C-F were analyzed using mean scores and their corresponding standard deviations and interpreted afterwards.

Regression analysis was used to test the 2-hypothesis formulated and the results interpreted thereafter.

Letter of introduction was obtained from Department of Nursing Science, Ahmadu Bello University Samaru Zaria and submitted to the research ethical committee of Niger state Ministries of Health and Tertiary education to obtain Ethical approval.

After obtaining approval from these ministries which directly oversee these nursing schools, permission to conduct this research at the Niger State College

of Nursing sciences and the Standard College of Nursing Minna were obtained from the school authorities.

Informed- consent was obtained from the study participants after its content was approved by the research ethical committees of the Ministries concerned and only students who consented were involved in the study.

The respondents were fully briefed about the entire processes involved. Full confidentiality and anonymity were observed as no student identity was revealed throughout and even after the study.

Respondents were free to quit at any point of the study. Each participant was assigned a unique code. Researchers and data collectors were carefully trained on these ethical issues before data collection.

Results

Out of 314 of questionnaire administered, 292 were retrieved and formed the basis for the analysis.

Demographic Analysis of Respondents

Table 1: Distribution of the students according to their Socio-demographic characteristics (n= 292)

Variable	Frequency	Percent (%)
<i>Gender</i>		
Male	97	33.2
Female	195	66.8
<i>Age(years)</i>		
18-25	188	64.4
26-30	75	25.7
Above 30	29	10.0
<i>Religious Belief</i>		
Islam	169	57.9
Christianity	113	38.7
Others	10	3.4
<i>Marital Status</i>		
Married	10	36.3
Single	171	58.6
Divorced	3	1.0
Widowed	12	4.1

The demographic analysis presented in Table 1 sheds light on key characteristics of the respondents in the study, encompassing variables such as sex, age, religious belief, and marital status. In terms of sex, there were more female students than male, majority fall within the age bracket, 18-25 age. Overall, this demographic diversity is paramount for comprehending the composition of the study participants and holds the potential to inform analyses of how varying demographic factors may influence research findings or outcomes.

Assessment of Student’s Knowledge of Motivation

Table 2: Distribution of the students according to their knowledge level on Motivation (n=292)

Statement	Mean	Standard Deviation	Remarks
Anything that encourages you to work harder	4.28	0.90	Agreed
Anything that makes one perform a task	3.47	0.88	Agreed
Something that enhances an individual’s ability to do something	3.80	1.02	Agreed
The power to work at any given time and place	4.16	0.97	Agreed
Something that comes from the mind	4.19	0.99	Agreed
Something that makes you want to do work	4.29	0.93	Agreed
Anything that pushes one to achieve a desired objective	4.21	0.87	Agreed
Anything that makes you attain your goal or not	4.20	0.82	Agreed
Grand Mean	4.08	0.92	Agreed

This provides in-depth analysis on the student’s level of knowledge of motivation, types and influences. Table 2 provide respondent responses on their knowledge of motivation.

The grand mean of 4.08 with a standard deviation of 0.92 indicates an overall agreement among students on the various motivational statements presented. This indicates that the respondents have a good level of knowledge of motivation.

Assessment of the perceived effect of extrinsic motivation on nursing student’s psychological state in nursing schools in Niger State

Table 3: Distribution of Students according to their perceived Effects of Extrinsic Motivation on Psychological States

	As a student, I believe my psychological state is affected by	Mean	Standard deviation	Remark
1	Supportive and Understanding Family	4.37	0.91	Agreed
2	Good financial stability / instability	4.42	0.96	Agreed
3	Very conducive family environment	4.35	1.05	Agreed

4	Influence of Friends	4.30	1.13	Agreed
5	Safe and cohesive community	4.24	1.18	Agreed
6	Challenging School policies	4.10	1.04	Agreed
7.	Availability of Counseling/Mental health services	3.99	1.48	Agreed
8	Previous Academic results	3.52	1.21	Agreed
Grand Mean		4.16	1.12	Agreed

The analysis of student responses in Table 3 below reveals valuable insights into the complex interplay between extrinsic motivation and psychological states. The high mean scores across all statements indicate that students recognize the significant effects of extrinsic motivational factors on their psychological well-being.

Assessment of the Nursing Students' Perceived Effects of Extrinsic Motivation on their Academic Performance

Table 4: Distribution of Students according to their Perceived Effects of Extrinsic Motivation on Academic Performance

	As a student I perform better academically when there is	Mean	Standard Deviation	Remark
1	Positive and inclusive school climate	4.06	1.05	Agreed
2	Adequate and readily financial support	3.97	1.17	Agreed
3	Healthy relationship with school mates	4.33	0.98	Agreed
4	Strong family support	4.39	1.06	Agreed
5	Strong cultural and societal expectations	4.24	1.13	Agreed
6	Highly challenging academic programs	4.35	0.95	Agreed
	Mean	4.22	1.06	Agreed

This section provides detailed analysis on nursing students' perceived effects of extrinsic motivation on their academic performance. Hence, Table 4 revealed the student responses on the perceived effects.

Overall, the grand mean of 4.22 with a standard deviation of 1.06 suggests that students perceived extrinsic motivation as a factor that affects their academic performance.

Null Hypothesis One

H₀₁: There is no perceived effect of extrinsic motivation on nursing student's psychological status in nursing schools in Niger state

Table 5: Analysis of Effect of Extrinsic Motivation on Nursing Student’s Psychological Status

Predictor	Coefficient Beta (β)	Standard Error	t-value	p-value	f ²
Extrinsic Motivation	0.71	0.21	2.18	0.00	0.42

*Significant at 0.05 level of significance (Source: Author Compilation, 2023)

The analysis of the perceived effect of extrinsic motivation on nursing student’s psychological status among nursing students in the selected school was shown in Table 5.

The coefficient beta (β) associated with Extrinsic Motivation is 0.71. This coefficient indicates the strength and direction of the relationship between extrinsic motivation and nursing students' psychological status. The standard error for Extrinsic Motivation is 0.21, reflecting the variability in the coefficient estimate. The t-value for Extrinsic Motivation is 2.18, representing the ratio of the estimated coefficient to its standard error. Additionally, the p-value associated with Extrinsic Motivation is 0.00, which is less than the significance level of 0.05. This indicates that the coefficient for Extrinsic Motivation is statistically significant.

Therefore, based on the statistical analysis presented, the null hypothesis (Ho3) of no perceived effect of extrinsic motivation on nursing student’s psychological status in the selected Nursing schools in Niger state is rejected.

Null Hypothesis Two

Ho2 There is no perceived effect of extrinsic motivation on nursing student’s academic performance in nursing schools in Niger state.

Table 6: Analysis of Effect of Extrinsic Motivation on Nursing Student’s Academic performance

Predictor	Coefficient Beta (β)	Standard Error	t-value	p-value	f ²
Extrinsic Motivation	0.63	0.34	3.59	0.00	0.35

*Significant at 0.05 level of significance (Source: Author Compilation, 2023)

The Table 6 shows the result of the regression analysis on effect of extrinsic motivation and nursing student’s academic performance. The coefficient beta (β) associated with Extrinsic Motivation is 0.63. This coefficient indicates the strength and direction of the relationship between extrinsic motivation and nursing students' academic performance. The standard error for Extrinsic

Motivation is 0.34, reflecting the variability in the coefficient estimate. The t-value for Extrinsic Motivation is 3.59, representing the ratio of the estimated coefficient to its standard error. Additionally, the p-value associated with Extrinsic Motivation is 0.00, which is less than the significance level of 0.05. This indicates that the coefficient for Extrinsic Motivation is statistically significant.

Therefore, based on the statistical analysis presented, the null hypothesis (Ho₂) of no perceived effect of extrinsic motivation on nursing student's academic performance in the selected Nursing schools in Niger state is rejected.

Discussion

The results shows that a substantial proportion of students possess good knowledge of motivation, particularly in aspects such as "what enhances an individual's ability to do something" (89.4%), "what makes one perform a duty" (85.0%), and "anything that pushes one to achieve" (83.5%). These high percentages indicate that nursing students understand the critical role of motivation in their academic and professional lives. This understanding aligns with the definition provided by Schunk and DiBenedetto (2020), who describe motivation as the processes that instigate and sustain goal-directed activities, essential for achieving academic goals.

The highest mean scores were associated with a healthy relationship with schoolmates (mean = 4.33, SD = 0.98), strong family support (mean = 4.39, SD = 1.06), and highly challenging academic programs (mean = 4.35, SD = 0.95). These findings highlight the significance of a supportive social and familial environment, as well as the role of academic rigor in motivating students.

The findings support and expand on several empirical studies. Tokan and Imakulata's (2019) research, which indicated that extrinsic motivation did not significantly affect students' learning behavior without corrective action, suggests that targeted interventions can enhance the effectiveness of extrinsic motivators. This aligns with the current findings, which show that well-implemented extrinsic factors positively influence psychological states.

Ryan and Deci's (2000) Self-Determination Theory, which categorizes extrinsic motivation into various types with differing levels of autonomy, is

also relevant. The significant effects of extrinsic motivation observed in the current study could reflect higher levels of identified and integrated regulation, where students internalize external motivators, thus improving their psychological states and academic performance.

Strengths and limitation

Adequate sample size which enhances the power of the study and accurately represented the population of interest and reduced margin of error. However, the study would have been much more generalizable had more nursing schools being involved in this study.

Conclusion

In conclusion, the findings provide robust evidence that extrinsic motivational factors significantly affect nursing students' academic performance. The high mean scores from the survey and the statistically significant results from the regression analysis underscore the importance of a supportive educational environment, financial stability, and academic rigor in maintaining academic achievements. These findings align with and extend existing empirical literature, highlighting the need for targeted interventions to enhance extrinsic motivation and support students' academic success.

Funding

The primary study was self-sponsored but gained moral support from the Niger state government as the findings may likely improve indigent nurse's enrolment into the state civil service and hence a much better health services provision in the state.

Conflict of interest

All authors of this work declare no conflict of interest.

Clinical trial Number:

This is not applicable as the study was not a clinical trial.

Recommendations

There the need for the provision and maintenance of a safe and cohesive community which can actively support nursing education with essential resources and collaborate with educational institutions to establish robust support systems. Recognize the pivotal role of family support and financial aid in creating a conducive learning atmosphere. Safe and cohesive community can actively support nursing education with essential resources and collaborate with educational institutions to establish robust support systems.

Future studies should consider recruiting more nursing schools to explore the effect of extrinsic motivation on nursing student's psychological state and academic performance.

Recognize the pivotal role of family support and financial aid in creating a conducive learning atmosphere.

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