Frontiers in Health Informatics
ISSN-Online: 2676-7104
2024; Vol 13: Issue 3
www.healthinformaticsjournal.com
Open Access

Demographic Factors as Predictors of Nursing Students' Educational Stress: A Multisite Study

Mohammed Bien M. Kulintang[1,4,8], Christian Joy C. Salas[2], Andrew D. Ngo[3], Marc Andreo C. Malala[4], Ralph Gregor Tan[5], Leda P. Pacate[6] and Lorna E. Vallar[7]

[1]Assistant Professor, Department of Nursing Administration and Education, College of Nursing, Shaqra University, Dawadmi, Kingdom of Saudi Arabia. mkulintang@su.edu.sa

[2]Dean, College of Nursing, University of the Immaculate Conception, Bankerohan, Davao City, Philippines, csalas@uic.edu.ph

[3]Assistant Professor, Department of Psychiatric and Mental Health, and Community Health. 4College of Nursing, Qassim University, Buraydah, Kingdom of Saudi Arabia, a.ngo@qu.edu.sa

[4]Faculty, Department of Nursing, College of Allied Health Sciences, Davao Doctors College, Inc., Davao City, Philippines, marcandrewmalala@davaodoctors.edu.ph

[5]Faculty, College of Nursing, University of the Immaculate Conception, Bankerohan, Davao City, Philippines

[6]Clinical Coordinator, Department of Nursing, College of Nursing, North Valley Foundation College Inc., Sudapin, Kidapawan City, Philippines

[7]Dean, College of Nursing, Cotabato Medical Foundation College, Inc., Midsayap, North Cotabato, Philippines

[8]Professorial Lecturer, College of Nursing, University of the Immaculate Conception, Bankerohan, Davao City, Philippines, mkulintang@uic.edu.ph

Cite this paper as: Mohammed Bien M. Kulintang, Christian Joy C. Salas, Andrew D. Ngo, Marc Andreo C. Malala, Ralph Gregor Tan, Leda P. Pacate and Lorna E. Vallar (2024). Demographic Factors as Predictors of Nursing Students' Educational Stress: A Multisite Study. *Frontiers in Health Informatics,* 13(3), 6842-6852

ABSTRACT

Introduction: *Students may experience discomfort due to various circumstances, including stress. Academic pressure and some demographic factors, particularly in clinical settings, were noted to be the nursing students' primary cause of their stress.*

Objectives: *This study intended to determine the demographic factors influencing the nursing student's level of educational stress.*

Methods: *Predictive-correlational design was used in this study among conveniently selected nursing students (n=519) in region 11 and 12, Philippines based on the following criteria: legal age, currently enrolled in BSN program, regardless of status, gender, religion, and ethnicity, and willing to partake in the study. An online survey questionnaire was used for data gathering. Data analysis was done using the SPSSv.29.*

Results: *The respondents were predominantly female first year nursing students aged 20 years old. Majority of them were living with their parents and belonged to a lower income class. Additionally, high level of educational stress was revealed in terms of Self-Concept Distress ($\bar{x}$=3.62); Pressure from External Expectations ($\bar{x}$=3.70) and Academic Pressure ($\bar{x}$=3.39). Similarly, the educational stress showed a significant positive relationship with GWA ($\chi 2$= 1468.649, p=<.001), family's monthly income (rs=0.114, p=.010), and mode of transportation ($\chi 2$= 642.026, p=<.001). Moreover, students' age (β=0.180, p=.002), general weighted average (β=0.115, p=.030), year level (β=-0.134, p=.026), and living status (β=0.141, p=.001) were significant predictors of*

educational stress.

Conclusions: *Nursing students experience significant educational stress, primarily due to self-concept distress, external expectations, and academic pressures, which often undermine their confidence and well-being. While demographic factors like age, sex, and living status showed no significant associations with stress, academic performance and family income emerged as critical predictors, highlighting the pressures to maintain high grades and the impact of financial concerns. These findings underscore the need for targeted support strategies that address the specific challenges of nursing education, including practical resources to mitigate stress related to academic demands and financial strain.*

Keywords *– Mental Health, Demographic Factors, Educational Stress, Nursing Students, Predictive-Correlational, Philippines*

INTRODUCTION

In nursing education, educational stress has gained attention as a serious problem that can influence nursing students' academic performance and overall health. A prolonged exposure to educational stress can have a negative impact on academic performance and may continue throughout a nursing student's time in school, potentially having long-term effects on their well-being and professional growth [46]. Nursing students undergoing clinical training often face complex, unfamiliar situations that place them under considerable physical and emotional stress [26,40]. Research consistently highlights the stressful nature of nursing education, with stress typically arising from three primary sources: academic workload, clinical responsibilities, and the emotional demands of patient care [43,8].

While moderate stress can enhance learning, motivation, and adaptability, excessive stress negatively impacts academic performance and mental health. It has been linked to anxiety, depression, and long-term health risks [25,3,23]. For nursing students to reach their full potential, they must cultivate healthy work habits within supportive teaching and clinical environments [42].

The pre-class culture and clinical setting can significantly influence student stress levels. Intervention programs—such as massage therapy, relaxation exercises, art therapy, music, aromatherapy, and yoga—have been shown to effectively reduce stress, improving students' well-being and academic outcomes [24,44]. Stress not only affects cognitive and psychomotor performance but also increases risk-taking behaviors, which can compromise patient safety [13].

Therefore, structured interventions aimed at enhancing students' self-efficacy, stress management, and coping strategies are essential (12,29). Effective strategies for managing stress include humor, time management, social support, debriefing, and co-curricular activities [16,36]. Ultimately, the challenge for nursing educators is to help students manage stress effectively to maximize their potential [15,28].

Meanwhile, the relationship between nursing students' demographic characteristics and educational stress has been widely studied. Research has often focused on variables such as age, gender, and socioeconomic status, frequently measured by factors like part-time work during school, as key predictors of stress levels [32,7,21]. However, the findings from these studies have been inconsistent. For instance, while some studies found that older students experience less educational stress, others reported the opposite, indicating higher stress levels among older students [22]. Similarly, research on gender differences according to stress varied: various studies show that stress was more prominent to female nursing students than their male counterparts, while others report no significant difference. In contrast, findings on socioeconomic status are more consistent, with most studies indicating that students from lower socioeconomic backgrounds tend to face higher levels of educational stress compared to those from higher-income families [30,14].

Previous studies of nursing students have found a correlation between academic performance and demographic

characteristics, including grade level, curriculum year, age, gender, marital status, and family income [49,17]. It is less clear how these demographic factors and educational stress are related, though. Students' total stress levels may be influenced by a combination of demographic characteristics, stress management techniques, and life circumstances [11]. Furthermore, because stress is a complex experience influenced by both individual traits and the difficulties of nursing school, the effects of these elements might not be immediately apparent.

Though schools of nursing recognize student diversity in age, gender, and socioeconomic status, few incorporate these factors into their support systems, often overlooking the specific needs of diverse students [48,47].

Crucially, curriculum and programs for nursing education can differ greatly throughout schools, which may account for discrepancies in the literature. Because of this heterogeneity, research on the effects of demographic factors on nursing students' educational stress must take a more comprehensive, multi-institutional approach. A more thorough grasp of these connections in various academic contexts can be obtained through a multisite study. According to research, stress levels vary amongst nursing students in their first and last years of study, with freshly enrolled students frequently reporting higher stress levels than those who are almost done with their degrees [20]. This implies that the association between educational stress and demographic characteristics may be moderated by the curriculum year.

Today's nursing students encounter previously unheard-of difficulties, and one major worry is educational stress. Tests, clinical competency assessments, and the demanding requirements of their programs cause anxiety in many students [2;39]. Demographic characteristics including age, gender, and socioeconomic level may have an impact on one's capacity to cope with various stressors. Recent studies have shown that these variables can influence nursing students' stress [15;46], which raises significant concerns regarding whether and how demographic traits influence how students react to academic demands.

Considering these challenges, this multisite study aimed to discover how demographic factors can influence educational stress among nursing students. Fewer research has looked at how demographic factors particularly relate to educational stress, even though many have investigated the relationship between these parameters and academic success. While previous research has identified some links between demographic factors and academic performance, there is a notable gap in studies that directly examine the relationship and influence between these demographic variables and educational stress in nursing students across multiple institutions. Additionally, many studies focus on single-site investigations, limiting the generalizability of their findings. This research addresses these gaps by adopting a multi-institutional approach, offering a more comprehensive understanding of the ways demographic characteristics shape nursing students' educational experiences. By doing so, it seeks to enlighten the development of more inclusive and effective support schemes within nursing programs, tailored to the diverse needs of today's student population.

OBJECTIVES

This study primarily aimed to determine the impact of demographic factors on the nursing students' educational stress, from different colleges and universities in region 11 and 12, Mindanao, Philippines.

Particularly, this study intended to:

1. determine the demographic profile of the participants,
2. determine the educational stress level of the participants, and
3. determine the demographic factors that was associated and influences the educational stress level of the participants.

METHODS

Research Design

This paper employed a predictive correlational design to uncover if the demographics factors can predict the educational stress among the nursing students from different institutions in the Philippines. This design predicts the variance of one variable to another particularly the independent variable as predictor, and dependent variable as the outcome [37].

Participants

Participants of the study were nursing students currently registered in a nursing school duly accredited by the Philippines Commission on Higher Education (CHEd). A total of 519 nursing students participated among 4 private colleges and universities in regions 11 and 12. Convenience sampling technique, a nonprobability method of collecting samples by conveniently selecting the participants which were located around a specific location [9] was used in the study utilizing the following criteria: (1) Nursing Students currently enrolled in a nursing schools in region 11 and 12 regardless of their academic status, gender, and ethnicity, (2) and were willing to participate in the study.

Instrumentation

An online survey questionnaire which comprised of 2 parts was employed to gather the data. Part 1 was the participants' demographic profile in terms of age, sex, general weighted average, year level, living status, family's monthly income and mode of transportation in going to school. Part 2 was the 15-item Educational Stress Scale for Health Sciences Students – Philippine version validated by Kulintang et al., (2024). The tool was valid based on the following fit indices: RMSEA (0.06), SRMR (0.04), CMIN/df (3.475), CFI (0.954), IFI (0.955), NFI (0.93), TLI (0.932), and GFI (0.953) respectively. Intraclass Correlation (0.53), Composite Reliability (0.90), McDonald's omega (ω=0.855), and Cronbach's alpha (α=0.856) reliability tests revealed fair to excellent internal consistency. This tool consists of three factors: Self-concept Distress (13, 11, 14, 12, 15, 1), Pressure from External Expectations (9, 5, 10, 6, 8), and Academic Pressures (2, 3,7, 4). 5-point Likert scale was used to determine the participants' response per item (1 – strongly disagree to 5 – strongly agree).

Data Collection

Information was gathered using a survey-online questionnaire. An approval letter was sent and secured first from the predetermined colleges and universities where the researchers were currently affiliated. A google link that contains the questionnaire was then forwarded to the participants. All the information shared by the participants were kept with utmost confidentiality following the Data privacy Act of 2012 guidelines. Data were analyzed and interpreted after the data collection.

Analysis

The data were examined using the IBM SPSS version 29. Frequency and percentages were used to describe the demographic factors. Mean and Standard deviation were used to describe the educational stress level of nursing students. Additionally, Pearson chi-square, point-biserial correlation and spearman rho was used for test of association. Lastly, regression analysis was used to test the influence of demographic factors on the educational stress level among the participants.

Ethical Considerations

This research was duly authorized by the Shaqra University, Local Committee of Research Ethics (HAPO-01-R-128) with the ethical reference number ERC_SU_F_202400015. The researchers carefully pursued the recommended ideals and ethical standards throughout the study.

RESULTS

The demographic factors were displayed in Table 1. Most respondents (34.9%) were 19 years old, with a mean

age of 2.82 ± 1.43, followed by those who were 20 (26.0%). The mean sex distribution score for the sample is 1.76 ± 0.43, which indicates that women make up 76.3% of the respondents while males only make up 23.7%. Regarding academic achievement, many students (31.0% of the sample) belonged to "Very Good" (85-89), while "Excellent" (96-100) students came in second at 27.6%. The mean of the general weighted average was 3.42 ± 1.25. With a mean year level of 1.67 ± 0.93, most respondents (62.8%) were first-year students, followed by third-year students (25.0%). Just 13.5% live alone, but the bulk (66.7%) live with their parents. Regarding finances, a sizable fraction of respondents (31.2%) was from low-income families, with 25.0% coming from homes with monthly incomes of less than 9,100 PHP. The average monthly income for the family was 2.55 ± 1.32. Regarding mobility, most (91.5%) commute to school via public transit.

Meanwhile, nursing students have significant levels of educational stress in various areas, according to the results shown in Table 2. With a mean score of 3.60 (SD = 0.96), the total educational stress was classified as "High" on the given rating scale. Students reported a mean score of 3.62 (SD = 0.92) for self-concept distress, indicating a high-stress level associated with personal identity and self-perception in the academic setting. The result implies that students may regularly experience problems with confidence and self-worth about their academic achievement. The most significant stressor was pressure from external expectations, with a mean score of 3.70 (SD = 1.02), which was also considered high. The result suggests that a great deal of pressure is placed on nursing students by their families, the community, and institutional expectations, which adds to their stress. Finally, academic stress was classified as high, with a mean score of 3.49 (SD = 0.93). The result implies that students are under tremendous stress because of the demands of their curriculum, tests, and clinical obligations. Thus, the high stress levels recorded across all categories highlighted the intense nature of the nursing school and the internal and external pressures students encounter. These pressures may have an impact on students' academic performance and well-being.

With the test results of the association between demographic factors and educational stress among nursing students, it revealed a diverse relationship among variables, as shown in Table 3. Different statistical tests assessed Several demographic factors for their correlation with educational stress. Age, sex, year level, and living status were not significantly associated with educational stress. Age showed a negligible correlation with educational stress ($r_s = .023$, $p = .597$), indicating no meaningful relationship. Similarly, sex ($r_{pb} = -.057$, $p = .194$), year level ($r_s = -.068$, $p = .120$), and living status ($\chi 2 = 168$, $p = .123$) did not significantly predict educational stress. In contrast, the general weighted average (GWA) demonstrated a significant association with educational stress ($\chi 2 = 1468.649$, $p < .001$), suggesting that academic performance plays a crucial role in stress levels. Nursing students with varying GWAs appear to experience different stress levels, likely due to the pressure to maintain high academic performance. Additionally, a family's monthly income was significantly associated with educational stress ($r_s = .114$, $p = .010$). This positive correlation indicates that students from families with lower income levels may experience higher stress, potentially due to financial strain and related concerns. The mode of transportation was also significantly related to educational stress ($\chi 2 = 642.026$, $p < .001$), suggesting that commuting logistics, such as reliance on public transportation, may contribute to the stress experienced by nursing students. These findings underscore the complex interplay between certain demographic factors—particularly academic performance, income, and transportation—and the educational stress experienced by nursing students, emphasizing the need for targeted support strategies.

Lastly, the regression analysis results in Table 4 demonstrate the influence of various demographic factors on educational stress among nursing students. The model's constant is significant ($B = 3.109$, $SE = 0.337$, $t = 9.226$, $p < .001$), indicating that, on average, students experience a baseline level of educational stress even without demographic influences. Several demographic factors significantly influence educational stress. Age has a

positive and significant impact (B = 0.074, SE = 0.023, β = 0.180, t = 3.179, p = .002), suggesting that their stress level tends to increase as students get older. This could reflect the compounding pressures of progressing through the nursing program. The general weighted average (GWA) is also a significant predictor of educational stress (B = 0.054, SE = 0.025, β = 0.115, t = 2.175, p = .030). This finding indicates that higher academic performance is associated with more significant stress, potentially due to the pressure of maintaining high grades. Year level significantly negatively influences educational stress (B = -0.085, SE = 0.038, β = -0.134, t = -2.238, p = .026). This suggests that students in higher year levels experience slightly lower stress than those in earlier years, possibly due to increased familiarity with the program or better coping mechanisms as they advance. Living status significantly affects educational stress (B = 0.075, SE = 0.023, β = 0.141, t = 3.244, p = .001), indicating that students living with different family arrangements or independently may experience varying stress levels. Those not living with parents may face additional responsibilities and pressures contributing to higher stress. In contrast, sex (B = -0.037, SE = 0.061, β = -0.026, t = -0.599, p = .549), family's monthly income (B = 0.036, SE = 0.021, β = 0.080, t = 1.730, p = .084), and mode of transportation (B = -0.018, SE = 0.048, β = -0.017, t = -0.385, p = .700) did not have significant effects on educational stress. These findings suggest that these factors do not play a substantial role in determining student stress levels.

DISCUSSION

The findings indicate that nursing students experience significant levels of educational stress across various dimensions. Nursing students face a multitude of academic and personal challenges that contribute to the elevated levels of educational stress they experience throughout their studies [20]. Self-concept distress reflects the high levels of stress related to personal identity and self-perception in the academic environment, suggesting that many students struggle with confidence and self-worth concerning their academic performance. This struggle is further highlighted by research indicating that many nursing students experience significant stress related to their personal identity and self-perception within the academic setting, which indicates that they often grapple with issues of confidence and self-worth regarding their academic achievements [35].

The most significant source of stress for nursing students stems from external expectations, highlighting the substantial pressure they encounter from families, societal norms, and institutional demands. Additionally, academic pressure contributes to this stress, stemming from the rigorous demands of coursework, exams, and clinical responsibilities. This assertion is supported by a study [31] who identify various academic stressors, including heavy workloads and study-related challenges, as well as clinical anxieties related to unfamiliar situations and the potential for errors with patients. A study further emphasize that financial constraints and academic pressures rank among the most stressful issues, with a significant portion of students noting that relationships with teachers and ward staff also contribute to their overall stress [41]. Importantly, these stressors remain consistent throughout different stages of the nursing program, illustrating a persistent challenge for students as they progress in their education.

Furthermore, these findings highlight the intense nature of nursing education, where students struggle with self-doubt, external pressures, and demanding academic requirements, all of which can negatively affect their academic performance and overall well-being. This aligns with the result of research, which identified four key themes in student experiences: feeling overwhelmed by the unknown, dealing with personal life factors, facing difficult clinical interactions, and managing relationships with nursing faculty [38]. These themes illustrate the various sources of stress nursing students encounter, emphasizing the need for faculty to recognize and address these challenges to better support their students.

Supporting this, a study found that nursing students had moderate self-efficacy but high academic stress, indicating that self-doubt and outside expectations play a significant role in their educational experience [35].

Additionally, it was noted that stressors change by year of study, with first-year students mainly facing academic pressures, second-year students dealing with high clinical expectations and limited personal time, and final-year students feeling stressed about the transition to the workforce [20]. It was also highlighted that low income and involvement in extracurricular activities contribute to stress, particularly for fourth-year students, who reported high stress from practical performance and professional communication challenges [4]. Collectively, these studies enhance our understanding of student stress in nursing education, underscoring the importance of providing support and resources tailored to the unique challenges faced at each stage of their education.

The analysis of the relationship between demographic factors and educational stress among nursing students reveals a complex dynamic. While age, sex, year level, and living status showed no significant associations with educational stress, academic performance, indicated by the general weighted average (GWA), emerged as a critical predictor of elevated stress levels. Supporting this, a study categorized nursing student stress into academic concerns, clinical practice, and social factors [1]. It was also found that increased hours spent on homework and studying correlate with higher stress levels, exacerbated by family circumstances [18]. Additionally, exams, intense workloads, and poor clinical relationships as major stressors, while personal factors like determination help students persevere [10]. GPA's significance in stress levels [34] and assignments and workload are major sources of distress [19], corroborated with a study who highlight negative attitudes from professionals and fear of exams as additional stressors [27]. Collectively, these studies reinforce that academic pressures are a predominant source of stress among nursing students, underscoring the need for targeted interventions.

Additionally, family income was positively correlated with educational stress, suggesting that students from lower-income backgrounds may experience increased anxiety related to financial concerns. A study identified financial constraints as one of the most significant sources of stress for these students [41]. The mode of transportation significantly influenced stress levels, with students relying on public transport facing logistical challenges that can heighten their overall stress. The biosocial and academic contexts contribute to the prevalence of stress among nursing students. Notably, time management was a greater source of stress for those using the subway, while the environment posed higher stress for students who relied on train and subway transportation [6]. Together, these findings emphasize the necessity for targeted support strategies that address the specific challenges of academic performance, financial strain, and commuting logistics, thereby helping to alleviate educational stress in this population.

Lastly, the results on test of influence of demographic factors on the educational stress indicate that age, academic performance, year level, and living status significantly influence educational stress among nursing students, while factors like sex, family income, and transportation mode show no significant impact. A study highlights statistically significant differences in stress related to age group, institution type, work activity, and course satisfaction, indicating a strong association between nursing students' characteristics and their stress levels [5]. Additionally, it was found that senior students experience lower psychological distress compared to their junior counterparts, suggesting that educational progression may aid in stress reduction [33]. Moreover, a study noted that female students in advanced stages of education with lower income levels exhibited higher stress, reinforcing the importance of demographic factors in stress assessment [32]. Effective coping strategies were also identified, with students who utilized support networks and maintained a positive outlook experiencing less stress, further emphasizing the need for tailored interventions in nursing education.

CONCLUSION

Nursing students experience significant educational stress, primarily due to self-concept distress, external expectations, and academic pressures, which often undermine their confidence and well-being. While

demographic factors like age, sex, and living status showed no significant associations with stress, academic performance and family income emerged as critical predictors, highlighting the pressures to maintain high grades and the impact of financial concerns. These findings underscore the need for targeted support strategies that address the specific challenges of nursing education, including practical resources to mitigate stress related to academic demands and financial strain.

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