Factors Affecting the Self-Efficacy of the First-Year Nursing Students: An Explanatory Sequential Design

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ABSTRACT

Choosing a career path is one of an individual's most critical and transformative decisions. It marks a foundational step in shaping one's professional future, personal growth, and overall life trajectory. Self-efficacy may stem from factors such as personal knowledge, interests, aspirations, socioeconomic status, availability of a reliable support system, and exposure to real-world career options.

Objectives: Guided by the Social Cognitive Career Theory (SCCT), this study aimed to examine the extent to which career development and career path decision dimensions significantly influence the level of self-efficacy of first-year nursing students. Specifically, the research explored the predictive influence of career development dimensions (environmental influences, contextual learning experiences, outcome expectations, and self-efficacy expectations) and career path decisions (interest development, choice goals, and career actions) to the formation and strength of self-efficacy in terms of performance accomplishment, modeling, verbal persuasion, and emotional arousal in the context of nursing education. Furthermore, the study assessed differences in self-efficacy levels based on the respondents' academic strands (STEM vs. Non-STEM).

Methods: A sequential explanatory mixed method was employed in the study. Quantitatively, an adapted and modified survey questionnaire was utilized in data gathering from a proportionate sample size of 223 respondents. A descriptive, causal-comparative research design was used in statistical analysis, with in-depth exploration conducted through comprehensive interviews among 12 participants.

Results: Results from the quantitative analysis showed a high extent of environmental factors, contextual experiences, outcome expectations, and self-efficacy expectations in the career development process. They often relied on their interests, goals, and actions in their career decision-making process and perceived themselves as highly efficacious in performance accomplishment, modeling, verbal persuasion, and emotional state. It also revealed that the respondents' self-efficacy can vary significantly depending on their academic strands. The career development dimensions and career path decision dimensions all make significant contributions to determining self-efficacy. Qualitatively explored, participants' self-efficacy is multifactorial and deeply grounded in both internal beliefs and external bases consistent with the principles of Social Cognitive Career Theory.

Keywords*:* career development, career decision, self-efficacy, academic strands, self-efficacy enhancement program

INTRODUCTION

Deciding on a career to take is one of the most significant aspects of an individual's development and life's progress. However, not all young individuals, such as students in secondary education, can easily make career decisions. Many people still struggle to make complex decisions before settling on a career path, and some students even have trouble determining their plans. Thus, selecting a career path becomes the biggest dilemma [23] and a challenge in students' lives [38]. Moreover, college requires personal knowledge, motivations,

interests, aspirations [32], socioeconomic status, and support systems. These factors may influence one's career path decisions and life readiness.

Social Cognitive Career Theory (SCCT) posits that one's interests, self-efficacy, and outcome expectations are major contributors to the choice goals that people develop to pursue a particular career path. It also posits that the choice actions transform goals into concrete behaviors. SCCT envisions outcome expectations as contributing to future performance and persistence indirectly via the level of performance goals that people set for themselves, thus giving prominent roles to one's self-efficacy [29].

A learner's self-efficacy is context-specific and can be influenced by how courses or programs are structured [28]. Individual self-efficacy domain, mastery experience, vicarious experience, social or verbal persuasion, and physiological or emotional reaction can be established through interaction with others or from different experiences and situations, impacting their behavior positively or negatively [17]. It was perceived that self-efficacy depended upon the type and amount of self-efficacy source events and situations the students had experienced. When students had to exhibit grit, self-efficacy building increased. Self-efficacy building was not as pronounced when tasks were menial and not challenging [9].

In 2013, the Enhanced Basic Education Act under the provision of Republic Act 10533 [10] [1] was passed in the Philippines, making the primary education system overhauled from 10 to 13 years, from kindergarten to Grade 12 [15]. The two-year specialized secondary education in the Senior High School (SHS) program allows the Grades 11 and 12 students to choose a specialization based on their interests and capabilities. The students' four track options include academic, arts and design, sports, and technical vocational livelihood [47]. The four (4) most preferred strands in the academic track in the Philippines, United States of America, and Japan includes Science, Technology, Engineering, and Mathematics (STEM), which emphasizes decreasing the mathematics and science achievement gaps among students of various backgrounds and gives an in-depth scientific and technological knowledge[45] ;and the non- STEM: Accountancy, Business, and Management (ABM); Humanities and Social Sciences (HUMSS); and General Academic Strand (GAS) [34].

Merely belonging to a specific track generates or boosts self-efficacy in one way or another. However, those students who did not have successful mastery experiences, social experiences, vicarious experiences, and physiological experiences early in their lives possessed and exhibited behaviors with lower self-efficacy [9]. With the interplay of many factors, career development, career choice [19], and the secondary school preparations that the students had taken from the different strands offered can become intricately intertwined [23] [50].

This paper aimed to examine the factors influencing the first year's self-efficacy, with reference to career development and career path decisions. Subsequently, this will be the basis for a pivotal plan to enhance and enrich the ground of the nursing students' self-efficacy and better prepare them for their transition from SHS to college, particularly in the field of nursing. This study also entails nurse educators' tailored instruction to link the individual learning needs of the nursing students from STEM and non-STEM strands in accordance with the standards required in the nursing profession.

METHODOLOGY

A sequential explanatory mixed methods research design was used to carry out this study. The primary intent of this design was to use a qualitative strand to explain initial quantitative results [11]. In utilizing the sequential explanatory research method, an initial quantitative phase was followed by a qualitative data collection phase [5]. The qualitative research data were used to inform or explain the quantitative findings and contextualize the results from the quantitative study component. A combined quantitative and qualitative research method determines the magnitude, frequency, and distribution of access and utilization difficulties.

Quantitative research systematically investigates social phenomena using statistical or numerical data [3]. It analyzes data for trends and relationships between variables and validates measurements [49].

A descriptive research design focused on describing and explaining the phenomenon under investigation [4]. It was utilized to determine the extent of career development of the first-year nursing students in terms of environmental influences, contextual learning experiences, outcome expectations, and self-efficacy expectations. It also determines the extent of career path decisions in terms of interest development, choice goals, and career actions. It determines the level of self-efficacy in terms of performance accomplishment, modeling, verbal persuasion, and emotional arousal.

A causal-comparative method determines whether one variable directly influences the other and identifies the causes of certain occurrences (or non-occurrences). It described the influence of career development and career path decisions on the level of self-efficacy of first-year nursing students. It makes a study descriptive by scrutinizing the relationships among different variables in which the independent variable has already occurred. Causal-comparative describes variables and examines differences in variables in two or more groups that occur naturally in a setting [18]. The design compared the nursing students' self-efficacy with their diverse academic strand preparation as a foundation for their entry into the nursing program.

The descriptive-qualitative research considers the natural contexts to provide an in-depth understanding of real-world problems [37] [26]. This method explores the perspectives and the meanings they give to the experiences of human beings [20]. Thus, an in-depth exploration of the first-year nursing students' perspectives and experiences explains the statistical data further. It further explained the characteristics of the quantitative findings that need further explanation.

The sample was of the required size and was selected using an appropriate probability sampling technique. Important factors considered in estimating the sample size included the size of the study population, confidence level, expected proportion of the outcome variable, and the required precision (margin of accuracy) for the study. The research participants were students taking a Bachelor of Science in Nursing degree in North Cotabato Province. Inclusion criteria include those second-year nursing students who were officially enrolled in the four Health Education Institutions offering a nursing program. These second-year nursing students completed their first-year nursing curriculum in the academic year 2022-2023 in the same school where they were also enrolled in the academic year 2023-2024 at their second-year level. To assess the self-efficacy of first-year nursing students related to their nursing careers, students should have experienced the implementation of the nursing program curriculum firsthand. Thus, the participants involved in the study were at the second-year level. The age bracket of the respondents involved in the study were those aged 18 years up to 23 years old.

A proportionate random sampling technique was utilized to select the study sample, which consisted of second-year nursing students from the selected target sites. Each element has an equal probability of being randomly selected from each subgroup in proportion to its actual size in the population [13] as a sample in this method. Proportionate random sampling is a technique used to enhance the representativeness of a sample by ensuring that the number of participants selected from each stratum is proportionate to the size of that stratum in the population. This method reduces sampling bias and improves the generalizability of the study findings [12]. The 223 respondents were randomly selected for the quantitative study.

Purposive random sampling was used in the study for the qualitative interviews. The researcher selected three nursing students from each school equally. Twelve nursing student participants were invited to participate in an in-depth interview, and were further explained to substantiate the quantitative data. Six participants from the STEM strand and another six participants from the non-STEM strand participated.

Reliability testing results of the survey questionnaire using Cronbach's Alpha Analysis ranges from .794 to .863. Cronbach's Alpha is widely used to estimate reliability [2]. Internal consistency describes the extent to which all the items in a test measure the same concept or construct [27]. Hence, it is connected to the interrelatedness of the items within the test—the acceptable values of alpha range from 0.70 to 0.95 [44]. In the qualitative aspect, the researcher developed semi-structured interview questions to better understand the quantitative data related to the variables. The interview questions were based on the results of the quantitative data, aiming to explain the factors that influence nursing students' self-efficacy.

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Ethical Considerations

Research is a public trust and should be conducted ethically. Honesty, objectivity, and integrity must be ensured. Respondents' cultures and values must be respected [36]. In carrying out this research, significant ethical concerns, such as informed consent, ethics of respect, anonymity and confidentiality, trustworthiness, credibility, transferability, dependability, confirmability, and authenticity were taken into account.

Analysis

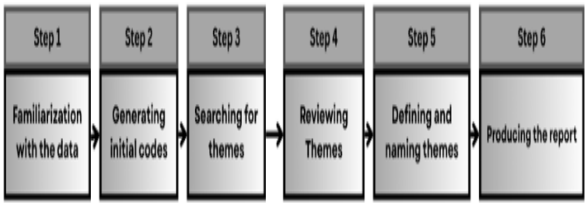
The Statistical Package for Social Sciences (SPSS) was used to analyze and interpret the quantitative data collected from the questionnaire. A frequency distribution was utilized for the respondents' personal inputs and previous academic strands. Descriptive statistics, the Average Weighted Mean, were used to express the mean and standard deviation of the variables. This determines the extent of career development, the extent of career path decisions, and the level of self-efficacy of the respondents.

An inferential statistic, the t-test, was used to compare the means between two groups, and there is no need for multiple comparisons as a unique P value is observed [33]. The t-test was used to determine the significant difference between the nursing students' self-efficacy among the STEM and non-STEM strands. Multiple Linear Regression was used to measure the influence of career development and career path decisions on self-efficacy. Regression analysis provides further information about the line of best fit and indicates, via the usual p-value, whether the relationship between the variables is significant [14].

This paper also aimed to describe and integrate the data analysis process in developing and interpreting patterns of meaning across qualitative data through thematic analysis [6]. The principles of the thematic analysis technique, such as coding data, searching for themes, refining the themes, and reporting the findings, are relatable to other qualitative methods [16].

The thematic analysis process is systematic because it follows a structured, sequential approach to interpreting research data. Figure 1 presents the systematic analysis process.

Figure 1. Thematic Analysis Process



Braun and Clarke (2016, 2021) outline a six-phase process for conducting thematic analysis [8][7]. First phase is the familiarization with the data: This initial phase involves immersing oneself in the data by reading and re-reading the transcripts, noting initial ideas and observations. The second phase is generating initial code, where the researcher systematically codes interesting features of the data across the entire dataset, collating data relevant to each code. The third phase is searching for themes. Codes are then collated into potential themes, gathering all data relevant to each potential theme. The fourth phase is the reviewing theme, which involves checking if the themes work in relation to the coded extracts and the entire dataset, generating a thematic 'map' of the analysis. The fifth phase is the defining and naming of themes. In this phase, the researcher refines each theme, conducting ongoing analysis to identify the essence of each theme and the overall story the analysis tells. The sixth phase is producing the report: This final phase involves the final analysis and write-up of the report, relating the analysis to the research question and literature [7].

The study is anchored to social cognitive career theory (SCCT), which provided the theoretical grounds for this study [42]. This social cognitive career theory (SCCT) seeks to explain three interrelated aspects of career

development. These include (1) the basic academic and career interest development, (2) how educational and career choices are made, and (3) how academic and career success is obtained [21].

RESULTS AND DISCUSSIONS

The quantitative results provide a statistical analysis of the extent of both career development and career path decisions, and their influence on the self-efficacy among the respondents. The analysis of significant differences in self-efficacy levels coming from the STEM and non-STEM academic stands is also presented. Complementing these are the qualitative results, the standpoint of the participants on the contributory factors that develop their interests or self-efficacy to enter the nursing program. This part offers deeper insights into the motivations, experiences, and abilities in accordance with the participants' perspectives. In this section, the integrated analysis of quantitative and qualitative data is also presented, wherein the qualitative evidence enriched the quantitative findings.

Extent of Career Development Among the Respondents

Environmental Influences. The most influential environmental factor was seeking parental advice on academic strand selection, with the highest mean score of 3.10 (SD = 1.166), The extent of career guidance, orientation, and social media promotions moderately influenced in taking the nursing career path (mean = 3.07, SD = 1.129). Additionally, parental influence toward choosing the nursing profession (mean = 2.99, SD = 1.329), relatives (mean = 2.97, SD = 1.350), and the interests of their peer group (mean = 2.77, SD = 1.247) have a moderate extent. Different schools have distinct characteristics that promote excellent performance and community involvement, and these features moderately influenced the respondents to participate in the program. In contrast, the least influential factor was the tendency to follow trends in choosing the nursing career path, as reflected by the lowest mean score of 2.32 (SD = 1.285), which was the only indicator rated as having a "low extent" of influence. The overall mean score of the environmental factors is 2.87 (SD = 0.788), which was a "moderate extent" of influence.

Contextual Learning Experiences. In this dimension, results showed that the respondents are well-oriented regarding the future direction of their career path, as evidenced by the highest mean score of 3.74 (SD = 0.841). Their contextual learning experiences often influenced them to engage in activities relevant to their career-related choice (mean = 3.53, SD =.798), which made them well-trained, academically good, technically, and critically skillful (mean= 3.49, SD=.734). To some extent, their Senior High School learning experiences may have also given them a great opportunity to learn and initially experience the world of their chosen career (mean=3.29, SD=1.053). The idea was also learned through their academic strand curriculum (mean 3.23, SD=1.097) and their lessons, which are linked to their career path (mean=3.20, SD= 1.093). Considering that the nursing career is a science-based program, even if they enrolled in a science-related strand, they were not so influenced by its science-related activities (mean=2.96, SD= 1.090), accomplishments in math and science-related projects (mean=2.91, SD=1.087). Furthermore, immersion, where students experience a relevant real-world application that aids in better understanding a career as part of the Senior High School curriculum, did not influence them to take up nursing, which has the lowest mean of 2.55 (SD=1.229). Hence, contextual learning experiences are an essential aspect of education and practice. The respondents were influenced by this to a moderate extent in their nursing career path, with a contextual learning experiences overall mean of 3.23 (SD=.739).

Outcome Expectations. The respondents perceived their chosen career path as highly beneficial for both themselves and their families, as reflected by the highest mean score of 4.62 (SD = 0.646) which is interpreted as very high extent. Moreover, their families played a significant role in influencing their career development process. Looking into the nursing career as a great opportunity in the future (mean=4.44, SD=.720) motivates them to finish their nursing education at a particular time (mean=4.14, SD=.882). With these futuristic outlooks in the career taken, respondents often comply with all their requirements with good grades (mean=3.84, SD=.811), perform tasks with great confidence (mean=3.78, SD=.789) in the process of career development.

Interestingly, the data indicate that students found it relatively easy to adjust to their selected path, as shown by the lowest mean score of 3.64 (SD = 0.803) among the outcome expectation indicators, yet this score still reflects a high extent of influence. The data underscored the high extent of career development in terms of outcome expectations, as reflected in the outcome expectations mean score of 4.07 (SD=.647). This high rating signifies that students have positive expectations about their future outcomes, including academic success, career readiness, and professional growth.

Self-efficacy Expectations. Findings indicate that the respondents demonstrate a high extent of belief in their capabilities to succeed in their chosen nursing career. This is evident, reflecting the highest recorded mean of 4.16 (SD=.717), suggesting that they could overcome all the potential barriers in their career path journey. In this context, the respondents often envision learning the nursing principles, concepts, and skills as shown by a mean score of 4.00 (SD=.738), which indicates a high extent of influence, suggesting that the respondents feel capable of acquiring the foundational knowledge needed for the profession.

Additionally, respondents often believe in their ability to perform nursing-related tasks effectively (mean=3.98, SD=.700) and feel that they are being holistically prepared to complete their nursing degree (mean=3.98, SD=.827). These scores fall within the high extent scale, reinforcing the idea that students possess a strong sense of competence and readiness for both academics and practical aspects of nursing.

Moreover, when students are driven to the desired career path, the high extent result exhibit students' confidence in facing the challenges they may encounter in nursing education and practice (mean 3.91, SD .732). They can solve challenging problems (mean=3.88, SD.738) and believe they can do well in their chosen career (mean=3.87, SD= .701). The respondents may have developed such confidence throughout their pre-entry level and senior High School preparations. They may have felt readiness for college (mean=3.61, SD=.887), but the transition phase is often difficult for most. The mean score of 4.00 (SD = .000) for self-efficacy expectations reflects a high extent of influence on the respondents' career development. This result signifies that the students often believe in their ability to succeed and are confident in facing the demands of their chosen nursing path. This also indicates that believing in oneself would equip a student with the strength and self-reliance to bounce back from setbacks and learn from challenges as part of the process of achieving the goal.

Overall, career development of the respondents registered a mean score of 3.55 (SD = 0.499), which falls within the scale of high extent. This indicates that the respondents are actively engaged in shaping their career path, professional identity, and future career trajectories, a key milestone in career formation [25], and are significantly influenced by various internal and external factors that contribute to their development as future nursing professionals. The high extent of career development suggests that in first-year level, nursing students are not only aware of their career goals but are also building the necessary foundation, both academically and personally, highlighting how individuals develop self-concept through adaptability, confidence and readiness [43].

Extent of Career Path Decisions Among the Respondents

Interest Development. Respondents feel more involved as they learn more about their career path, which reflected the highest mean of 4.44 (SD=.661). They often feel motivated to pursue their career due to increasing demand in the healthcare profession (mean=4.19, SD=.802). Hence, they often exhibit their interest in learning nursing principles, concepts, and skills (mean 4.16, SD=.742) and engaging more in science-related activities (mean=3.88, SD=.802). The respondents expressed interest in such a career because they perceived that their abilities, skills (mean=3.85, SD=.891), and personality (mean=3.82, SD=.830) fit into it. In the same manner, they chose nursing because their friends also expressed interest in it. Though it has the lowest mean of 3.44 (SD=1.050). The respondents often based their career decisions on their interests, objectives, and actions, as indicated by the overall mean of 3.94 (SD=.578).

Choice Goals. The respondents decided on their careers based on their goals and futuristic outlook. They decided extensively based on what they could do for their family, which had the highest mean of 4.57 (SD=.646), and other people, particularly the patients who need health care (mean=4.53, SD=.663). They

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believed that the career they chose could make their family proud of them (mean=4.55, SD=.668) as they make a difference in someone's life (mean=4.56, SD=.676). Furthermore, the respondents believed that pursuing such a noble profession would enhance their capabilities and potential (mean = 4.44, SD = 0.661), while also providing them with a strong sense of purpose and direction (mean = 4.32, SD = 0.699). Consequently, their primary goal is to complete their nursing education (mean = 4.35, SD = 0.785). Being determined to finish the nursing program, they often believed that this would provide them with a bright and secure future (mean=4.15, SD=.811). They can even have a big chance to work abroad (mean=4.12, SD=.832). This is a notable finding that the respondents' decision often relied on their choice goals to take the nursing career path or when making career decisions, as reflected in the overall mean of 4.07 and standard deviation of .259.

In terms of career actions, when the respondents decided to pursue their nursing careers, they were extensively driven to study hard and strive to reach their goals. This is evident in their response, which obtained the highest mean of 4.63 (SD=.562). With the goal in mind, despite the difficulties and challenges, they will be persistent (mean=4.36, SD=.696) to surpass all the barriers they may encounter (mean=4.26, SD=.727). They often monitor the progress of their career (mean=4.13, SD=.718) and do an advanced study (mean=3.88, SD=.738). This data result indicates that some of the respondents are dynamically planning to achieve their goals. Extensive career actions are evident when a decision has been made, which shows an overall mean of 4.26 and a standard deviation of .645.

Overall, respondents have high extent of career path decisions showing overall mean of 4.17 and a standard deviation of .453. Hence, students often depend on their proactive steps and decisions to shape their career paths. Their grit keeps them on track dynamically and enables them to surpass challenges through difficult circumstances for sustained periods. These underscore the mindset of resilience and career adaptability, which have been widely recognized as essential traits for future readiness [46]. Persistence and overcoming barriers as key behaviors associated with successfully navigating career paths in a complex and evolving healthcare system [42].

Level of Self-Efficacy Among the Respondents

Performance Accomplishment. The respondents expressed a high level of self-efficacy in their understanding of basic nursing principles, concepts, and skills (mean = 3.71, SD = 0.658), as well as in their ability to actively participate in nursing-related activities (mean = 3.52, SD = 0.858) and apply critical analysis during nursing examinations. On the other hand, they reported a moderate level of self-efficacy in volunteering for nursing-related activities (mean = 3.16, SD = 0.911) and in their ability to achieve good grades (mean = 3.23, SD = 0.722). A moderate level of efficacy also in analyzing mathematical and scientific problems (mean=3.06, SD=.876), conducting science-based activities and research (mean=3.06, SD=.736), memorizing human anatomy essentials (mean=3.05, SD=.790), and identifying different theories (mean=3.04, SD=.702), which suggests they struggle more with Math and Science-related courses (mean=3.00, SD=.759). A moderate level of perceived competence in math and science, as well as STEM-related subjects, can impact persistence in nursing programs [35]. Categorically, respondents show a moderate level of self-efficacy or slightly efficacious in terms of performance accomplishment, with a mean of 3.23 and a standard deviation of .613.

Modeling. Emulating could be a method to enhance self-efficacy. Results have shown that respondents are highly efficacious in taking up a nursing career as they feel motivated when they see students and nurses in white uniforms. This indicator has the highest mean of 4.19 (SD=.802). They are having someone being looked up like the senior nursing students who accomplished their tasks with grace under pressure (mean=4.10, SD=.802), working with those confident ones (mean=4.06, SD=.772), with the same attitude and values (mean=3.82, SD=.770), make them highly confident to perform the nursing tasks. Moreover, they become more enthusiastic about pursuing their career when seeing an emergency response team in action and saving lives (mean=4.06, SD=.825).

Although they are highly efficacious when they have this modeling, they still struggle to learn quickly and easily the nursing techniques being taught and demonstrated by the clinical instructors (mean 3.64, SD=.815). There could be times of doubting their abilities when they know and see someone failing. Yet, they persevere and take the challenge (mean=3.56, SD=.913), trying to enact the skills they expect in the profession

(mean=3.54, SD=.721). Thus, modeling plays a crucial role in self-efficacy, which is the belief in one's ability to succeed in specific situations or accomplish a task. By observing others (models) perform a task successfully, individuals can learn strategies and techniques that contribute to their success. Seeing people with similar experiences and accomplishing the task [48] will motivate them to believe more in their abilities [40].

Hence, vicarious experience suggests that students are more confident in performing a particular task when they have seen someone who has been successful in performing such tasks [47]. The model's success can serve as a motivating factor, encouraging observers to believe in their potential to succeed. This is reflected in the modeling mean score, which is 4.00 (SD=.000) and interpreted as a high level, indicating that the respondents are highly efficacious when there is modeling.

Verbal Persuasion. The data suggest that incorporating verbal recognition into teaching practices can significantly motivate students to improve. This is evidenced by the highest mean score of 4.19 (SD = 0.748), reflecting its positive impact. Verbal encouragement was also found to help students overcome self-doubt (mean = 3.95, SD = 0.795) and enhance their self-belief, particularly in relation to future planning (mean = 3.57, SD = 0.917) and personal development (mean = 3.88, SD = 0.869). Even when faced with criticism, students perceive it constructively to enhance their performance (mean=3.88, SD=0.862). This positive reinforcement leads them to take on new challenges (mean=3.73, SD=0.735) and demonstrates capability (mean=3.73, SD=0.839).

However, some respondents tend to avoid tasks they feel incapable of (mean=3.33, SD=0.899). Hence, verbal recognition for achievements motivates students and fosters a positive feedback loop, making them more resilient when facing unappreciated accomplishments, as indicated by the lowest mean result of 3.19 (SD=1.084). Categorically, the respondents exhibit a high level of self-efficacy and display a high level of confidence in verbal persuasion, with a mean of 3.71 (SD=0.621). This suggests that verbal persuasion contributes to building the respondents' confidence, enabling them to take on challenging tasks and persevere through difficulties. This aligns with the findings of Karayurt et al. (2021), who emphasized that praise and acknowledgment in academic settings promote resilience and commitment in nursing students [22]. Encouragement helps buffer stress, improve self-perception, build persistence, and encourage individuals to move beyond their comfort zones to enhance their competencies [41].

Emotional Arousal. This dimension indicates that the respondents are highly efficacious in their choice of a nursing career due to their strong interest in the field, as shown by the highest mean of 4.14 (SD=0.877). When faced with challenges in their nursing career, they are motivated to strive for improvement (mean=3.79, SD=0.784). The students' ability to manage their emotional responses enables them to feel in control and better equipped to handle challenges. Their emotional arousal is often influenced by the social environment. Consequently, they maintain positive social relations with others (mean=3.85, SD=0.828), remain calm when facing problems (mean=3.55, SD=0.957), and are adept at coping with undesirable experiences (mean=3.47, SD=0.821).

Choosing a nursing career demands emotional stability and mental well-being. In the context of the nursing profession in the Philippines, individuals must possess the resilience to withstand challenges such as low salary grades and discrimination, as indicated by the lowest mean of 3.38 (SD=1.040), reflecting moderate self-efficacy in this aspect. Emotional arousal significantly influences students' self-efficacy, their belief in their ability to succeed in specific situations or tasks. Thus, the respondents exhibit a high level of self-efficacy in their emotional arousal, with a mean of 3.70 (SD=0.611), leading to enhanced performance through a virtuous cycle of confidence.

Overall, respondents are highly efficacious, where data have shown the self-efficacy category mean score of 3.64 with a standard deviation of .333. This indicates that respondents feel confident when modeling and believe in their ability to learn and emulate behaviors through observation of others. Their efficacy in verbal persuasion and emotional arousal indicates a strong confidence in their ability to influence and motivate others through communication and to improve their performance when acknowledged and appreciated. Moreover, a high sense of self-efficacy [39] can help students succeed academically with increased motivation. They are students with a better ability to think more productively when faced with a challenge [40], which is linked to

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emotional resilience, lowering burnout rates, and increasing academic performance and greater adaptability during career transitions [51].

Difference in the Level of Self-Efficacy of the Respondents When Analyzed According to their Academic Strands

In statistical analysis, the self-efficacy of the nursing students from the STEM strand has a mean of 3.69 (SD=.324) while the non-STEM has a mean of 3.57 (SD=.338). In a t-test, like in most tests of significance, the significance threshold is traditionally set at p = 0.05. A p-value is basically the likelihood of finding a mean difference by chance. The p-value reported from a t-test test is .012, which is less than 0.05, so the result is said to be statistically significant.

TABLE 1 Significant Difference in the Level of Self-Efficacy When Analyzed According to Respondents' Academic Strands

Dependent Variable	**Strand**	**Mean**	**Std. Deviation**	**t**	**P-value**	**Remarks**
Self-Efficacy	STEM	3.69	.324	2.536	.012	Significant
	Non-STEM	3.57	.338			

These findings suggest that first-year nursing students from one academic group, the STEM strand, demonstrated higher self-efficacy compared to those from the other group, the non-STEM strand. This implies that the students' prior academic preparation plays a notable role in shaping their confidence to perform nursing-related tasks, overcome challenges, and persist toward the completion of their program. Hence, these student nurses from the STEM academic strand are calmer, mentally and emotionally stable, and can cope greatly when experiencing undesirable events in their chosen careers [31].

Influence of the Career Development and Career Path Decisions on the Self-Efficacy of the Respondents

This section presents the results of a regression analysis conducted to determine how well the predictor variables, career development and career path decisions, explain self-efficacy among first-year nursing students. Table 2 data provides the value of R and R2 for the model that has been derived. For these data, R or correlation coefficient has a value of .471, which indicates the strength and direction of the relationship between the predictor variables and self-efficacy. The value of R tells that career development and career path decisions have a moderate, positive, and linear relationship with self-efficacy. The value of R2, which is the coefficient of determination, tells how much of the variation of self-efficacy is explained by the model (predictor variables). An R2 of .222 tells that the study had gathered a significant amount of information and data on 22.2 percent of the variance in the nursing students' self-efficacy can be explained by the predictors used in the model. It also implies that 77.8 percent of the variance is influenced by other factors not included in the model, assuming all other factors remain constant.

An adjusted R2 of .215 confirms that 21.5 percent of the variance in self-efficacy remains explained after adjusting for model complexity. The value is lower than R2, which indicates that the model is relatively stable and not overfitted. The standard error of the estimate reflects the average distance that the observed values fall from the regression line. A standard error of .295 means that predictions of self-efficacy vary by about ± 0.295 from the actual values, on average. A lower standard error indicates a better fit.

TABLE 2 Model Summary (Self-Efficacy)

Model	R	R Square	Adjusted R Square	Std. Error of the Estimate
1	.471[a]	.222	.215	.29530353

a. Predictors: (Constant), Overall (CPD), Overall (CD)

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The ANOVA was conducted to examine whether career development and career path decisions significantly predict the self-efficacy of the respondents. In table 3, the model accounted for a significant proportion of variance in self-efficacy, as evidenced by the regression sum of squares (SS = 5.482) compared to the residual sum of squares (SS = 19.185). The mean square for the regression was 2.741, while the mean square for the residual was 0.087. The most important coefficients are the F-ratio and the associated significance of that F-ratio. The result yielded a high F-ratio, indicating that the predictors together significantly improve the prediction of self-efficacy beyond what would be expected by chance. A p-value is associated with the F-ratio to determine statistical significance. If the p-value is below a certain threshold (0.05), the result is considered statistically significant. For these data, the value of F is 31.430, which is significant at $p < 0.000$.

TABLE 3 ANOVA (Self-Efficacy)

Model		Sum of Squares	df	Mean Square	F	Sig.
1	Regression	5.482.	2	2.741	31.430	.000[b]
	Residual	19.185	220	.087		
	Total	24.667	222			

a. Dependent Variable: Overall (SE)

b. Predictors: (Constant), Overall (CPD), Overall (CD)

Table 4 shows the coefficient table. This table provides the necessary information to predict self-efficacy from the career development and career path decisions, as well as contribute statistically to the model (by looking at the Sig column). The value of b for career development is .207, which represents the change in the outcome associated with a unit change in self-efficacy. Therefore, if career development is increased by one unit, then the model predicts that the level of self-efficacy will increase by .207 or 20.7 percent. The value of b for career path decisions is .205, which represents the change in the outcome associated with a unit change in self-efficacy. Therefore, if the career path decision is increased by one unit, then the model predicts that the level of self-efficacy will increase by .205 or 20.5 percent.

The values of the t-test explain whether the b-values are different from 0. Since the significant values are .000, the results have a genuine effect. Since the b coefficients of career development and career path decisions are different from 0, it can be concluded that the 2 constructs make a significant contribution ($p < 0.000$) in determining self-efficacy.

Given the observed link between self-efficacy, career development, and career path decisions, it is logical to reject Hypothesis, which states that "Career development and career path decisions do not significantly influence the self-efficacy of first-year nursing students." The findings suggest that the self-efficacy of the respondents is indeed significantly influenced by their career development and career path decisions.

TABLE 4 Influence of Career Development and Career Path Decision on Self-Efficacy

Model		Unstandardized Coefficients		Standardized Coefficients	t	P-value	Remarks
		B	Std. Error	Beta			
	(Constant)	2.052	.206		9.972	.000	
	Career Development	.207	.041	.310	4.994	.000	Significant

	Career Path Decisions	.205	.046	.278	4.490	.000	Significant

a. Dependent Variable: Self-Efficacy

This indicates that, overall, the regression model statistically significantly predicts the outcome variable, that is, it is a good fit for the data. Thus, results reject the null hypothesis and support that career development and career path decisions significantly influence nursing students' self-efficacy. The findings suggest that students who receive adequate career support and clarity in their academic and professional direction are more confident in performing nursing tasks and achieving academic success. Thus, goal alignment and decision self-concordance strengthen the self-efficacy [30], and clear career decisions can significantly predict resilience and self-perceived competency [24].

Integrated Analysis of Quantitative and Qualitative Data

Developing an Interest in Nursing Career. The quantitative results revealed that most influencing factors on nursing students' career choices ranged from low to high extent, particularly within personal and environmental domains. Based on the participants' narratives, their standpoint in developing interest to a nursing career developed four clusters or themes which include family influence and support, personal motivation and aspiration, career opportunities and benefits, and societal and environmental factors.

Hence, the statistical trends in the career development align well with the qualitative narratives and emergent themes in the influences of choosing a nursing career. The integration reveals a strong alignment in terms of family influence, intrinsic motivation, and confidence to pursue nursing. Through quantitative and qualitative lenses, integration effectively illuminated the understanding that career development in nursing is a complex interplay of personal values, family influences, and contextual experiences. Hence, there is a comprehensive and meaningful convergence between measurable influences and personal experiences.

In areas where SHS strand alignment was weak quantitatively, the qualitative data deepens the understanding by emphasizing the adaptive strategies and personal experiences that compensated for the formal academic limitations. In summary, family influence and support converge with moderate quantitative scores, while personal motivation and aspiration expand the quantitative data by revealing internal drives, such as caregiving experiences and a desire to help. Career opportunities and benefits contribute to high scores in self-efficacy and positive outcome expectations, while societal and environmental factors partially support moderate ratings on academic and school exposure.

Motivations to Pursue Nursing. The integration of quantitative and qualitative data revealed a strong convergence between the extent of career path decisions and motivational experiences of nursing students. The quantitative results reflected a high degree of motivation, which aligns closely with participants' individual narratives, particularly in areas of altruism, personal growth, and self-actualization. These intrinsic motivators were consistently emphasized both statistically and thematically, affirming their critical role in nursing students' career decisions.

Abilities Possessed to Fit in Nursing Profession The integration of quantitative and qualitative data provides a comprehensive illustration of the respondents' perceptions of their self-efficacy and the abilities that equip them for their chosen career. The numerical scores reflect consistent moderate to high self-efficacy levels across four dimensions: performance accomplishment, modeling, verbal persuasion, and emotional arousal. These are enriched by qualitative insights or narratives that articulate the participants' personal experiences, struggles, and growth in developing both clinical and cognitive nursing skill competencies, as well as professional and personal attributes.

Moreover, integration shows a strong alignment between quantitative and qualitative data sets. While high self-efficacy scores in clinical tasks matched with skills-lab narratives, moderate memorization ability was supported by participant accounts of academic struggle. Additionally, a narrative description of how encouragement from others helped the participants (nursing students) take risks was elaborated in detail,

offering broader insights not reflected in the scale. As a result, the integrated analysis provides a well-rounded understanding of the nursing profession and readiness for their chosen career. Overall, the integration presents a comprehensive and well-rounded understanding of nursing students' motivations, career path decisions, and readiness for the profession, underscoring that their journey is both statistically evident and experientially meaningful.

Program Design

This research has led to the development of a structured intervention program to address key factors influencing the academic and career development of incoming first-year nursing students and all year levels. Grounded by the study's findings, the program focuses on enhancing the students' self-efficacy, aligning their career path decisions with their personal goals and interests, and strengthening their supportive learning environment. By incorporating evidence-based strategies such as mentorship for knowledge enhancement, nursing-related skills training, reflective practice, and goal-setting activities, the program seeks to bridge the gap between students' prior academic backgrounds and the demands of nursing education.

Ultimately, the program aims to support the holistic development of nursing students, helping them build confidence, stay motivated, clarify their goals, and gain a deeper understanding of the nursing profession, enabling them to succeed academically and professionally.

Program Design A: Nursing Preparatory Courses: Bridging the gap of Essential Knowledge and Skills

a.1 Area of Improvement: The design of this program aims to prepare incoming nursing students, particularly those from non-STEM backgrounds, by building their confidence and competence to ensure a smooth transition from Senior High School (SHS) to nursing education.

a. 2 Target Participants: Incoming first-year nursing students, non-STEM strand graduates, and students requiring academic bridging.

a.3 Objectives: The primary objective of this program is to strengthen the foundational knowledge in science, math, and basic healthcare concepts while building confidence, self-efficacy, and readiness for the rigors of the nursing program. Specifically, this aims to reinforce course concepts in health sciences (biology and human anatomy), strengthen mathematical skills relevant to medical calculation and dosage, and cultivate confidence and a growth mindset toward their nursing journey.

a.4 Program Monitoring: Learning progress will be assessed to ensure the program's primary objective has been successfully achieved. The student will show improved self-confidence and academic preparedness in science and basic math, as well as nursing-related concepts. Aside from the knowledge gained, they will demonstrate confidence and be mentally and emotionally ready for the nursing program. Furthermore, after the activities, feedback will be given to evaluate the usefulness of the nursing preparatory course.

Program Design B: Resilience and Independence for Self-Efficacy (RISE): an enhancement program for nursing students.

b.1 Area of Improvement: This program design aims to further enhance the self-efficacy of nursing students from first year to fourth year, supporting the development of effective study habits, time management strategies, greater confidence, enhanced clinical competence, and a growth mindset throughout their nursing journey.

b.2 Target Participants: First Year to Fourth Year Level Nursing Students

b.3 The primary objective of this program is to continuously build and enhance the self-efficacy of nursing students by equipping them with the mindset, skills, and support systems needed for academic success, clinical competence, and professional growth. This program will help reduce anxiety about skill-based performance,

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promote greater engagement and persistence in challenges, and increase the willingness to take initiative and lead.

b.4 Program Monitoring: To ensure that the program's goal has been successfully achieved, learning progress and confidence over time will be assessed. The student will show improved academic performance, self-confidence, and clinical competencies. Reduced anxiety in skill-based performance will be evident. Furthermore, after the activities, feedback will be given to evaluate the usefulness of the enhancement program.

CONCLUSION

Career development dimensions highlighted nursing students as being strongly motivated by their desire to help their families and the opportunities that a nursing career offers. This highest level of outcome expectations indicates a positive outlook for the respondents, contributing to their adaptability and willingness to perform specific tasks required to obtain nursing knowledge and skills. Furthermore, fostering self-efficacy, which highlights the importance of believing in their abilities, empowers them to reach their full potential and overcome the challenges of the nursing profession. In moderate influence, the respondents' real-world learning experiences serve as a reflective practice for a clearer understanding of their chosen career. These dimensions serve as the primary drivers of career growth among the respondents. Environmental influences such as institutional resources or family background play a role in career development. However, they are not the most significant influences for the respondents.

Moreover, respondents actively take proactive steps and make deliberate decisions to navigate their career trajectories. They are largely self-directed, primarily relying on their actions, goals, and interests. Their actions reflect their strong sense of initiative to shape their future. Frequently, the respondents' choice goals are yielded from their personal aspirations, which drive them to make career-related decisions. Their goals are a foundation for planning and staying focused on their nursing education. While slightly lower than choice goals, respondents place considerable value on their interests and passions when making career choices. Thus, the proactive mindset ensures their sustained motivation, precision, and adaptability in the face of their academic and professional challenges.

In enhancing self-efficacy, modeling, the ability to learn by observing others and effectively emulating behaviors, skills, and attitudes demonstrated by peers, mentors, or clinical instructors has fostered strong confidence among respondents. Additionally, they feel capable of influencing and motivating others through effective communication and tend to improve their performance when encouraged and recognized, reflecting a high level of confidence in verbal persuasion. Their ability to manage their emotions, academic stress, and clinical settings demonstrates strong emotional self-regulation.

Based on the observed differences in the self-efficacy of first-year nursing students from STEM and non-STEM academic strands, their confidence levels appear to vary depending on their academic background and prior learning experiences related to their strand. Since different academic strands are designed to emphasize specific knowledge areas, skills, and career pathways, students from STEM backgrounds often enter the nursing program with a stronger foundation in science and mathematics, contributing to greater academic confidence. In contrast, students from non-STEM strands may face initial challenges but can develop self-efficacy through adaptive learning and targeted support. This finding underscores the significance of strand-sensitive educational support and bridging programs in enabling all nursing students, regardless of their academic background, to develop the self-confidence and competence necessary to succeed in nursing education and future clinical practice.

Given the associated link between self-efficacy, career development, and career path decisions, the findings indicate that the respondents' self-efficacy is significantly influenced by their career development experiences and decisions regarding their career path, highlighting its multifaceted nature. The result illustrates the interconnectedness of the dimensions and the dynamic nature of self-efficacy. Hence, self-efficacy is not shaped by a single factor, but rather the result of a continuous interaction between the respondent's internal motivation, goals, interests, and external circumstances.

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RECOMMENDATIONS

First-Year Nursing Students may enhance their foundational skills in nursing-related concepts through active involvement in the implementation of the developed nursing preparatory course program, serving as reinforcement to bridge the gap in essential knowledge and skills required in nursing. With the rigorous academic and clinical demands in nursing education, students need to strengthen their coping strategies and practice time management to overcome information overload, which can lead to potential learning gaps.

Incoming First-Year Nursing Students (Senior High School Students) may need to recognize the value of self-awareness and adaptability as tools for a smooth and successful transition into nursing education. Hence, maximizing their learning potential and being holistically prepared. It is strongly encouraged for them to engage actively in career orientation and academic counseling sessions offered by the school's guidance office. Contextual learning experiences may be reinforced through immersion in real-life nursing tasks as part of their curriculum, which can help leverage their existing knowledge and build self-efficacy before entering the nursing program.

Second-, Third-, and Fourth-Year Level Nursing Students may leverage their strengths through mastery experiences and clinical exposure. They may be provided with incrementally challenging academic and clinical experiences that allow them to build confidence and enhance self-efficacy in handling complex client care situations. They may be encouraged to engage in interdisciplinary learning and be actively involved in implementing the program designed for each year level. This is to reinforce the development of their personal qualities, interpersonal competence, professionalism, independence, resilience, and career progression.

Curricularists and Education Stakeholders may incorporate more experiential learning opportunities, such as immersion specific to their field of interest, simulations, and reflective practice. Their experiences can deepen students' understanding of the profession and reinforce the real-world relevance of their academic training. An early exposure to professional environments can help bridge the gap between classroom learning and real-world practice. Subsequently, they may be required to conduct a rigorous assessment of the curriculum, examining the significant details that address the student's learning needs, thereby obtaining a competency-based outcome at a specific year level.

Furthermore, understanding the role of social influence helps educators and guidance counselors better support students. By acknowledging the positive and negative external motivators in students' lives, they can tailor interventions, mentoring, and support systems. Strengthening the involvement of families and peer groups, as well as addressing societal misconceptions about nursing, may enhance students' motivation and professional identity.

Nursing Educational Institutions may conduct an open house program for those incoming students, particularly those in Senior High School who are still exploring their college options. This will allow prospective students to experience the nursing profession (school-based) in a tangible and immersive manner. This may also promote informed career decision-making, which can enhance motivation and confidence in pursuing a career in nursing. The implementation and utilization of the developed Nursing Preparatory Course: Bridging the Gap of Essential Knowledge and Skills Program aims to support incoming nursing students, particularly those from non-STEM backgrounds, in adopting and building the confidence and competence necessary for a smooth transition from Senior High School (SHS) into nursing education. Following this, continuous monitoring and evaluation of the program's effectiveness will be conducted to assess its impact on reinforcing and strengthening foundational knowledge in science, mathematics, and basic healthcare concepts while fostering confidence, self-efficacy, and readiness for the demands of the nursing program.

Implementation and utilization of the developed Resilience and Independence for Self-Efficacy (RISE) Program for nursing students at all levels to further enhance their self-efficacy, which helps to develop effective study habits, time management strategies, cultivate more confidence, enhance clinical competence, and develop a growth mindset toward the nursing journey. This program will help reduce the anxiety in skill-based performance, promote greater engagement and persistence in challenges, and increase willingness to take initiative and lead.

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Limitations

Since the data were collected at one point in time, the study cannot fully capture the evolving nature of self-efficacy, career interests, and motivational drivers as students progress through the nursing program. Longitudinal studies would be needed to track how these dimensions change over time.

Conflict of Interests

None

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