RESILIENCE IN NURSING STUDENTS: PSYCHOSOCIAL CHALLENGES AND STRENGTHENING STRATEGIES IN THE UNIVERSITY CONTEXT

RESILIÊNCIA EM ESTUDANTES DE ENFERMAGEM: DESAFIOS PSICOSSOCIAIS E ESTRATÉGIAS DE FORTALECIMENTO NO CONTEXTO UNIVERSITÁRIO

RESILIENCIA EN ESTUDIANTES DE ENFERMERÍA: DESAFÍOS PSICOSOCIALES Y ESTRATEGIAS DE FORTALECIMIENTO EN EL CONTEXTO UNIVERSITARIO

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ABSTRACT

Nursing education is a challenging journey, demanding from students not only technical knowledge but also psychosocial robustness. This chapter explores the levels of resilience and their determinants in incoming nursing students at a higher education institution, aiming to understand how sociodemographic factors and the various dimensions of resilience are interconnected. An observational, cross-sectional, and quantitative study was conducted with

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104 academics, utilizing a Sociodemographic Variables Questionnaire and the Wagnild and Young Resilience Scale. The results indicated that most students exhibit moderate resilience; however, a significant portion demonstrated reduced levels. Gender identity and employment status were identified as sociodemographic variables significantly associated with resilience. While personal competence and self-acceptance emerged as strengths, independence, determination, self-confidence, and adaptability were areas requiring further development. These findings underscore the need for personalized psychosocial support programs, focused on strengthening resilience and addressing students' specific needs, thereby contributing to the training of professionals better equipped to face the complexities of healthcare practice.

Keywords: Resilience. Nursing Students. Mental Health. Sociodemographic Factors. Higher Education.

RESUMO

A formação em Enfermagem é uma jornada desafiadora, exigindo dos estudantes não apenas conhecimentos técnicos, mas também robustez psicossocial. Este capítulo explora os níveis de resiliência e seus determinantes em estudantes ingressantes de Enfermagem em uma instituição de ensino superior, com o objetivo de compreender como fatores sociodemográficos e as diferentes dimensões da resiliência se inter-relacionam. Foi realizado um estudo observacional, transversal e quantitativo com 104 acadêmicos, utilizando um Questionário de Variáveis Sociodemográficas e a Escala de Resiliência de Wagnild e Young. Os resultados indicaram que a maioria dos estudantes apresenta níveis moderados de resiliência; no entanto, uma parcela significativa demonstrou níveis reduzidos. A identidade de gênero e a situação de trabalho foram identificadas como variáveis sociodemográficas significativamente associadas à resiliência. Enquanto a competência pessoal e a autoaceitação emergiram como pontos fortes, independência, determinação, autoconfiança e adaptabilidade foram identificadas como áreas que necessitam de maior desenvolvimento. Esses achados evidenciam a necessidade de programas personalizados de apoio psicossocial, voltados ao fortalecimento da resiliência e ao atendimento das necessidades específicas dos estudantes, contribuindo, assim, para a formação de profissionais mais preparados para enfrentar as complexidades da prática em saúde.

Palavras-chave: Resiliência. Estudantes de Enfermagem. Saúde Mental. Fatores Sociodemográficos. Ensino Superior.

RESUMEN

La formación en Enfermería es un proceso desafiante que exige de los estudiantes no solo conocimientos técnicos, sino también solidez psicosocial. Este capítulo explora los niveles de resiliencia y sus determinantes en estudiantes de Enfermería de primer ingreso en una institución de educación superior, con el objetivo de comprender cómo se interrelacionan los factores sociodemográficos y las distintas dimensiones de la resiliencia. Se realizó un estudio observacional, transversal y cuantitativo con 104 estudiantes, utilizando un Cuestionario de Variables Sociodemográficas y la Escala de Resiliencia de Wagnild y Young. Los resultados indicaron que la mayoría de los estudiantes presenta niveles moderados de resiliencia; sin embargo, una proporción significativa mostró niveles reducidos. La identidad de género y la situación laboral fueron identificadas como variables sociodemográficas significativamente asociadas con la resiliencia. Mientras que la competencia personal y la autoaceptación surgieron como fortalezas, la independencia, la determinación, la autoconfianza y la adaptabilidad se identificaron como áreas que requieren mayor desarrollo. Estos hallazgos evidencian la necesidad de programas personalizados de apoyo psicosocial orientados al fortalecimiento de la resiliencia y a la atención de las necesidades específicas de los estudiantes, contribuyendo así a la formación de profesionales mejor preparados para

enfrentar las complejidades de la práctica sanitaria.

Palabras clave: Resiliencia. Estudiantes de Enfermería. Salud Mental. Factores Sociodemográficos. Educación Superior.

1 INTRODUCTION

Nursing, one of the most essential and multifaceted professions in healthcare, demands from its practitioners not only profound technical-scientific knowledge but also a unique capacity for psychosocial adaptation in the face of constantly changing and often challenging scenarios. The academic journey that culminates in the training of these professionals is, in itself, a microcosm of these demands, immersing students in an environment of intense learning, emotional pressures, and early confrontation with delicate human realities (Liu et al., 2025; Litwic-Kaminska et al., 2023). This chapter aims to deepen the understanding of resilience levels in incoming nursing students, exploring the intricate relationship between their sociodemographic characteristics and their ability to adapt and thrive in a demanding university environment.

The transition to higher education marks a period of significant restructuring in individuals' lives. Far from being merely a stage of knowledge acquisition, it is a time of personal and professional development, where high expectations, new responsibilities, and immersion in a rigorous academic context can test the limits of adaptive capacity (Merino-Godoy et al., 2022). For students in the health field, particularly nursing, these challenges are amplified. The exhaustive workload, the need to assimilate a vast volume of information, the complexity of practical skills to be mastered, and, above all, exposure to situations of suffering, illness, death, and ethical dilemmas in clinical internship settings, generate a unique set of stressors (Ríos-Risquez et al., 2018; Beauvais et al., 2014).

In this context, the mental health of university students has emerged as a pressing global concern. Research indicates a growing prevalence of mental disorders, such as anxiety, depression, and burnout symptoms, among this population, especially among those pursuing health-related fields (Martinez et al., 2025). Failure to develop robust coping mechanisms can lead to negative outcomes ranging from poor academic performance and demotivation to course dropout, compromising not only individual futures but also the supply of qualified professionals for the healthcare system. It is here that the concept of resilience becomes central. Defined as an individual's ability to adapt and maintain positive functioning in the face of adversity, trauma, or significant stress, resilience transcends mere overcoming, involving a process of learning, growth, and strengthening from challenging experiences (Shapiro et al., 2023; Wu et al., 2024).

Contrary to the deterministic view that considered it an innate characteristic, resilience is now understood as a dynamic construct, influenced by a complex interaction of individual factors (such as self-efficacy, self-confidence, self-acceptance), contextual factors (academic environment, institutional support), and social factors (support networks, cultural and

socioeconomic context) (Duarte et al., 2022; Santos et al., 2025). Sociodemographic variables such as age, marital status, economic situation, gender identity, and employment status can significantly shape the repertoire of resources and coping strategies available to students. The initial phase of graduation is particularly critical, as it is then that the foundations for adaptation and the development of coping strategies are established, making it a strategic focal point for research and intervention.

The gap in Brazilian literature that specifically and deeply investigates resilience levels in incoming nursing students, correlating them explicitly with their sociodemographic profile, motivates this chapter. By unraveling these relationships, it is hoped to provide valuable empirical evidence that can inform the formulation and implementation of more targeted and effective institutional policies and psycho-pedagogical support programs. Deepening knowledge about the resilience of these students aims not only to ensure their academic permanence and success but, above all, to contribute to the training of more robust, adaptable, ethical professionals fully prepared to face the multifaceted demands of the healthcare system's reality.

2 THE COMPLEXITY OF NURSING EDUCATION AND STUDENTS' MENTAL HEALTH

Nursing education is widely recognized as one of the most intense and demanding academic paths within the healthcare field. Students are subjected to a dense curriculum, ranging from basic sciences to complex clinical disciplines, requiring a high degree of intellectual dedication and practical skills. Beyond the volume of theoretical content, immersion in internship settings exposes these future professionals to realities that can be emotionally overwhelming. They witness human suffering, vulnerability, chronic illness, terminality, and death in high-pressure environments, such as emergency rooms, intensive care units, and wards (Merino-Godoy et al., 2022). This early and continuous exposure demands emotional maturity and a repertoire of coping strategies that are not always fully developed in students (Ríos-Risquez et al., 2018).

Additionally, the dynamics of healthcare environments, with their established hierarchies, the complexity of ethical dilemmas, the need for teamwork under stressful conditions, and the very nature of the nurse-patient relationship – which demands empathy, care, and rapid decision-making – add significant layers of pressure. This conjunction of academic, clinical, and interpersonal factors can easily lead to physical and mental overload (Beauvais et al., 2014).

The need to reconcile personal life, financial responsibilities, and academic demands often imposes an even greater burden. Many university students work to pay for their studies,

which can compromise the time dedicated to learning, rest, and self-care activities. The absence of robust psychological mechanisms to process and respond to these pressures can result in a series of negative outcomes for students' mental health. Symptoms of anxiety, depression, and professional burnout are frequently reported in studies with this population (Martinez et al., 2025).

The prevalence of mental disorders among university students has become a growing global concern. The World Health Organization (WHO) has highlighted the need for attention to the mental health of young people, especially those transitioning to adulthood and the labor market (WHO, 2021). In the Brazilian context, this concern is accentuated by socioeconomic and cultural factors, including the precariousness of education in some institutions, performance pressure, difficulty in accessing mental health services, and the stigma associated with seeking help (Santos et al., 2025).

Neglecting mental health during academic training can have lasting repercussions. Students facing psychological difficulties are more prone to exhibiting poor academic performance, developing feelings of demotivation, social isolation, and, in more severe cases, considering interrupting or abandoning the course. Such outcomes not only affect the individual but also compromise the future quality of healthcare services, as the training of nursing professionals with compromised mental health can directly impact the quality of care provided to patients (Liu et al., 2023).

Given this scenario, it becomes imperative that higher education institutions recognize and actively address the psychosocial challenges faced by nursing students. It is fundamental to invest in support and mental health promotion strategies that not only react to crises but act proactively, empowering students to develop coping skills and resilience from the initial stages of their training.

3 RESILIENCE: CONCEPT, IMPORTANCE, AND THEORETICAL APPROACHES

Resilience, a construct of growing interest in health and social sciences, refers to an individual's ability to maintain or recover mental health and well-being after exposure to adversity or stressful events (Shapiro et al., 2023). More than simply "returning to a previous state" after trauma, resilience is often described as a dynamic process involving positive adaptation and, in many cases, growth or strengthening resulting from overcoming difficulties (Wu et al., 2024).

Historically, the concept of resilience originated in physics to describe the property of materials that return to their original shape after being subjected to deformation. However, its transposition to the field of psychology and mental health, starting in the 1970s and 1980s,

transformed it into a fundamental pillar for understanding human adaptation (Masten, 2001). Initially, it was viewed as an innate characteristic of some individuals, a kind of "superpower." However, more recent and in-depth studies have revealed that resilience is, in fact, a complex and multidimensional phenomenon, shaped by the interaction between individual characteristics, contextual factors, and environmental factors (Duarte et al., 2022; Santos et al., 2025).

3.1 THEORETICAL MODELS OF RESILIENCE

Different theoretical approaches have sought to explain resilience. Among the most influential are:

- **Ecological and Developmental Models**: These models emphasize resilience as a result of the continuous interaction between the individual and their environment over time. They consider that resilience capacity is built from multiple systems (individual, family, school, community) and that protective factors (such as self-efficacy, social support, positive school environment) can compensate for risk factors (Garmezy, 1991; Masten, 2001).
- **Stress and Coping Theory**: From this perspective, resilience is linked to how individuals appraise and respond to stress. Effective coping strategies (problem-focused or emotion-focused) and the ability to re-evaluate difficult situations positively are central to the manifestation of resilience (Lazarus & Folkman, 1984).
- **Personal Attributes Models**: These focus on internal characteristics that contribute to resilience, such as self-efficacy (belief in one's own ability to perform tasks), self-esteem (evaluation of one's own worth), optimism (expectation of positive outcomes), emotional regulation, and self-confidence (Bandura, 1997; Block & Block, 1980). The Wagnild and Young Resilience Scale, used in this study, aligns with this perspective, unfolding resilience into domains such as personal competence, self-acceptance, independence, determination, self-confidence, and adaptability (Wagnild & Young, 1993).

3.2 THE IMPORTANCE OF RESILIENCE IN NURSING EDUCATION

For nursing students, resilience is not just a desirable characteristic but a fundamental protective competence. The profession demands constant emotional engagement, critical decision-making, and the ability to act under pressure. Resilience empowers the future nurse to:

- **Navigate Academic Stressors**: Cope with the intensity of the curriculum, rigorous evaluations, and time demands, maintaining focus and motivation.
- **Face Clinical Challenges**: Process experiences of suffering, trauma, and loss, maintaining empathy and professionalism without being consumed by emotional exhaustion.
- **Develop Self-Care Skills**: Recognize and manage one's own stress, preventing burnout and promoting well-being throughout their career.
- **Adapt to Change**: The healthcare environment is dynamic, with new technologies, protocols, and challenges constantly emerging. Resilience allows the professional to adjust and continue learning and growing.
- **Maintain Quality of Care**: Resilient nurses are better able to provide compassionate, safe, and effective care, even in adverse situations.

In summary, resilience acts as a protective factor that allows nursing students not only to survive but to thrive in a challenging environment. Recognizing that resilience can be learned and strengthened implies that educational institutions have a crucial role in developing programs and environments that cultivate this essential capacity.

4 METHODS FOR INVESTIGATING RESILIENCE IN NURSING STUDENTS

Investigating resilience and its associated factors in nursing students requires a rigorous methodological design that allows for capturing the phenomenon's complexity. This chapter is based on a carefully planned study, aiming to generate reliable data on the sociodemographic profile and resilience levels of these academics.

4.1 STUDY DESIGN AND SETTING

The study adopted an observational, descriptive, cross-sectional, and quantitative design. The choice of a quantitative approach was motivated by the need to measure specific variables, such as resilience levels and sociodemographic characteristics, to allow for the application of statistical analyses that identify patterns, associations, and, when possible, predictive relationships objectively. As an observational study, it refrained from any intervention, limiting itself to recording existing characteristics and perceptions at the time of data collection. The cross-sectional nature implied that data collection was performed at a single point in time, offering a snapshot of the variables under study during that specific period, which is efficient for identifying prevalences and associations. The descriptive aspect allowed for a detailed characterization of the sample, while the analytical aspect sought to explore the relationships between resilience and sociodemographic characteristics.

The research setting was the University Center of Santa Fé do Sul (UNIFUNEC), a private higher education institution located in the interior of São Paulo state, Brazil. The choice of UNIFUNEC as the study locus was strategic, allowing a focus on a specific population of incoming nursing students, facilitating the logistics of data collection, and offering a homogeneous context for analysis.

4.2 PARTICIPANTS AND ELIGIBILITY CRITERIA

The target population for this study comprised all students regularly enrolled in the first semester of the Nursing course at UNIFUNEC in the academic year 2025. The focus on incoming students was crucial, as it represents a period of intense adaptation and new academic challenges, where resilience may be more observable and its foundations more susceptible to intervention.

The sample selection was non-probabilistic, by convenience. This means that participants were recruited based on their accessibility and voluntary expression of interest in participating in the study, rather than by a random selection method. To ensure the homogeneity and relevance of the sample to the research objectives, the following criteria were established:

- **Inclusion**: Students with active enrollment in the first semester of the Nursing course in 2025, aged 18 years or older, and who formally consented to participate by signing the Free and Informed Consent Form (FICF).
- **Exclusion**: Participants who did not fully complete the data collection instruments or who exhibited inconsistencies or response patterns indicating a lack of comprehension or seriousness in completing the questionnaires.

After applying these criteria, the final sample consisted of 104 participants. This number, although representative for an initial analysis in a single institution, should be considered when discussing generalizability.

4.3 DATA COLLECTION INSTRUMENTS

Data collection was carried out using a structured, self-administered electronic form, hosted on the Google Forms platform. This form integrated the Free and Informed Consent Form (FICF) and two specific instruments:

- **Sociodemographic Variables Questionnaire (SVQ)**: Developed specifically for this study, the SVQ aimed to broadly characterize the participants' profile. It consisted of a series of multiple-choice questions and open fields, covering:

- **Personal and Identification Data**: Biological sex, gender identity, and sexual orientation.
- **Demographic and Socioeconomic Data**: Age (age groups), marital status, number of children, personal or family income, and religious affiliation.
- **Previous Educational History**: Information about Elementary and High School (type of school, course modality, time elapsed since completion) and higher education experience (if they have already attended, completed, reasons for interruption).
- **Employment and Financial Situation Related to Study**: Current employment status (working in the course area, working in a different area, not working), primary source of funds to pay for studies, and type of course admission. This questionnaire was fundamental for contextualizing resilience levels within the students' life realities.

- **Wagnild and Young Resilience Scale (RS-25)**: For measuring resilience levels, this instrument, originally proposed in 1993 (Wagnild & Young, 1993), was used. The RS-25 is widely recognized and has been translated and validated for the Brazilian Portuguese context by Pesce et al. (2005), ensuring its psychometric and cultural suitability. It consists of 25 positively worded items that seek to capture various facets of resilience. Participants responded to each item on a 7-point Likert scale (1 = "Strongly Disagree" to 7 = "Strongly Agree"). The total score on the scale ranges from 25 to 175 points, with higher scores indicating greater resilience. Conceptually, the RS-25 is organized into three main domains:
  - **Domain 1: Personal Competence and Self-Acceptance**: Assesses self-efficacy, self-acceptance, and perception of strengths.
  - **Domain 2: Independence and Determination**: Reflects autonomy, persistence, and self-sufficiency.
  - **Domain 3: Self-Confidence and Adaptability**: Measures confidence in dealing with challenges and flexibility to new demands. Total scores were categorized into resilience levels (reduced, moderate, and high) based on standardized criteria in the literature.

4.4 ETHICAL PROCEDURES AND DATA COLLECTION

The study was conducted in strict compliance with ethical principles for research involving human beings, as per Resolution No. 466/2012 of the National Health Council. Approval was obtained from the Research Ethics Committee of UNIFUNEC before the start of any procedures.

Students were invited to participate in the research at the beginning of classes, in a face-to-face setting. Researchers provided detailed explanations about the study's objectives, the voluntary nature of participation, and the guarantee of anonymity and confidentiality. Participation was voluntary, and the Free and Informed Consent Form (FICF) was signed electronically by each participant before completion. Instruments were applied individually, in an environment that ensured privacy. Researchers were available for specific questions, without influencing responses.

4.5 STATISTICAL ANALYSIS

Data were exported from Google Forms to electronic spreadsheets and subjected to thorough cleaning. Processing and statistical analyses were conducted using Jamovi software (version 2.5) and Python (Jupyter Notebook environment). Analyses included:

- **Descriptive Statistics**: Absolute (n) and relative (%) frequencies for categorical variables; mean, median, standard deviation, minimum, and maximum for numerical variables.
- **Normality Verification**: Shapiro-Wilk and Kolmogorov-Smirnov tests to guide the choice of inferential tests (parametric or non-parametric).
- **Inferential Statistical Tests and Modeling**:
  - Chi-square test (χ^2) and Fisher's Exact Test: For association between categorical sociodemographic variables and resilience categories.
  - Analysis of Variance (ANOVA): To compare means of the scores of the three resilience domains among different resilience levels (reduced, moderate, high).
  - Spearman's Correlation (ρ): To assess the strength and direction of monotonic association between scores of each domain and the total resilience score.
  - Multiple Linear Regression: To identify sociodemographic variables and scale domains as predictors of the total resilience score (continuous dependent variable).
  - Multinomial Logistic Regression: To model the probability of a student belonging to each resilience category (reduced, moderate, high), with evaluation of precision, recall, and F1-Score.

All statistical analyses were performed with a significance level of 5% ($p < 0.05$), indicating that a p-value below this threshold was considered statistically significant. Results were presented in tables and figures, accompanied by detailed interpretations.

5 RESULTS: AN OVERVIEW OF RESILIENCE AND ITS DETERMINANTS IN NURSING STUDENTS

The analysis of collected data allowed for a detailed profile of incoming nursing students and an investigation into the nuances of their resilience. This section presents the main findings of the study, organized to contextualize the sociodemographic profile, the distribution of resilience levels, and the significant associations found.

5.1 SOCIODEMOGRAPHIC PROFILE OF NURSING STUDENTS

The study sample comprised 104 incoming nursing students from UNIFUNEC in 2025. Sociodemographic characterization is fundamental, as participants' backgrounds can influence their coping abilities and resilience.

Table 1

Percentages referring to the sample characterization variables of nursing students. Santa Fé do Sul, 2025.

Characterization Variables	n	%
Biological Sex		
Male	11	10.58
Female	93	88.46
Gender Identity		
Man	11	10.58
Woman	93	88.46
Age		
20 or < 20 years	62	59.62
Between 21 and 30 years	20	19.23
Between 31 and 40 years	16	15.38
> 40 years	6	5.77
Marital Status		
Single	60	57.62
Married	29	27.88
Stable Relationship	11	10.58
Divorced	4	3.85
Number of Children		
0 children	75	72.12
1 Child	9	8.65
More than 1 child	20	19.23
Personal or Family Income		
≤ 1,000.00	12	11.54
1,001.00 to 3,000.00	55	52.88
≥ 3,000.00	37	35.58
Religion		
No Religion	13	12.50
Afro-Brazilian	1	0.96
Catholic	33	31.73
Evangelical	51	49.04
Spiritualist	2	1.92
Others	4	3.85

Table 1 provides a detailed view of the sociodemographic profile. A female predominance (88.46%) and younger age (59.62% up to 20 years old) are notable, reflecting the traditional demographics of nursing and the tendency for direct entry from high school. Most students are single (57.62%) and without children (72.12%), but the presence of married/in stable relationships and with children indicates a diversity of responsibilities. Family income is concentrated between R$ 1,001.00 and R$ 3,000.00 (52.88%), suggesting financial pressures that may influence the need to work.

Previous educational background was also analyzed:

Table 2

Percentages referring to the student data characterization variables of nursing students. Santa Fé do Sul, 2025

Characterization Variables	n	%
Elementary School (EF)		
All or mostly in public school	91	87.50
All or mostly in private school	13	12.50
Course Type (EF)		
Regular - 1st to 8th grade	86	82.69
Supplementary	18	17.31
High School (EM)		
All or mostly in public school	89	85.58
All or mostly in private school	15	14.42
Course Type (EM)		
Regular - 1st to 3rd grade	81	77.88
Technical	14	13.46
Supplementary	9	8.65
How many years ago did you finish high school?		
Last year	5	4.81
1 to 5 years ago	55	52.58
6 to 10 years ago	17	16.35
More than 10 years ago	27	25.96
Have you attended another higher education course?		
No	22	21.15
Yes	82	78.85
Did you complete the course?		
Not applicable	65	62.50
No	11	10.58
Yes	28	26.92
What type of institution was the course in?		
Not applicable	73	70.19
Public	5	4.81
Private	26	25.00

Table 2 indicates that the majority of students attended basic education in public schools (87.50% in Elementary School and 85.58% in High School), suggesting a diverse socioeconomic profile. A notable finding is that 78.85% have previously attended another higher education course, with many not having completed it (10.58%), which may indicate

resilience in the pursuit of education, but also experience with interruptions due to financial issues or disidentification.

Parents' schooling is also a relevant indicator of cultural capital and family expectations:

Table 3

Percentages referring to parents' schooling variables of nursing students. Santa Fé do Sul, 2025

Variables	n	%
Father		
Incomplete elementary education	36	34.60
Complete elementary education	4	3.80
Incomplete high school	5	4.80
Complete high school	28	26.90
Incomplete higher education	1	1.00
Complete higher education	17	16.30
Don't know	11	10.60
Others	2	1.90
Mother		
Incomplete elementary education	30	28.80
Complete elementary education	6	5.80
Incomplete high school	7	6.70
Complete high school	34	32.70
Incomplete higher education	0	0.00
Complete higher education	24	23.11
Don't know	3	2.20
Others	2	1.40

In Table 3, it is observed that mothers' schooling is, on average, slightly higher than fathers', with a greater concentration of complete high school and a considerable proportion with higher education. This data may reflect social and educational trends from previous generations and can influence family support and academic expectations.

Finally, employment status and how studies are funded reveal the challenges faced by students:

Table 4

Percentages referring to resource sources and type of course admission variables of nursing students. Santa Fé do Sul, 2025

Variables	n	%
Employment status		
Work in course-related area	38	36.50
Work in non-course-related area	53	51.00
Do not work	13	12.50
Main source of funds for studies		
Own resources	53	51.00
Family resources	35	33.70
Will apply for an institutional scholarship	16	15.40
Type of course admission		

First call	90	86.50
Second Call	10	9.60
Other	4	3.80

Table 4 highlights that more than half of the students (51.00%) work in an area different from nursing, which imposes a dual burden and can add significant stress. Dependence on own resources (51.00%) reinforces the need to reconcile work and study. The vast majority (86.50%) were admitted via the first call, indicating dedication and preparation.

5.2 GENERAL LEVELS OF RESILIENCE

The assessment of resilience levels using the Wagnild and Young Resilience Scale provided an overview of students' adaptive capacity:

Table 5

Descriptive analysis of absolute and relative frequencies of participants classified according to resilience levels. UNIFUNEC, 2025

Resilience Category	Frequency (n)	Percentage (%)
Reduced	26	25.0
Moderate	53	50.9
High	25	24.1

Table 5 reveals that most students (50.9%) have moderate levels of resilience. However, a significant portion (25.0%) demonstrated reduced resilience, which signals a group more vulnerable to developing psychosocial difficulties. Approximately a quarter of the sample (24.1%) exhibited high resilience, indicating a strong capacity for adaptation and overcoming challenges. The overall mean resilience score was 129.3 (standard deviation of 26.6), with a median of 132 points, corroborating the predominance of moderate resilience in the sample.

Figure 1

Distribution of Classifications According to Resilience Level. Santa Fé do Sul, 2025.

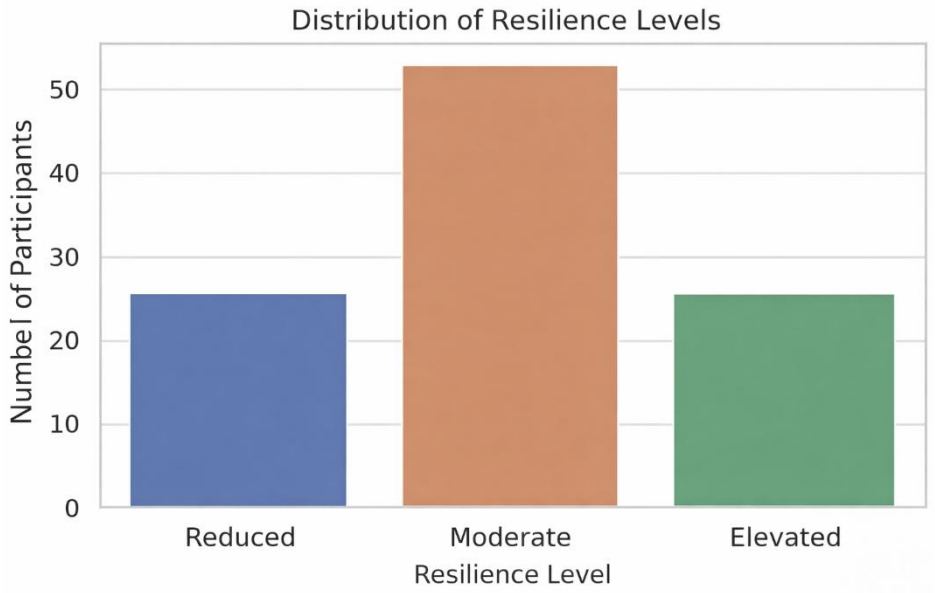


Figure 1 visually illustrates the percentage distribution of resilience categories, reinforcing the predominance of moderate resilience and the expressive presence of reduced and high resilience groups.

5.3 DETAILED ANALYSIS OF RESILIENCE DOMAINS

The Wagnild and Young Resilience Scale disaggregates resilience into three domains, whose mean scores provide insights into the strengths and areas that may require development in students.

Table 6

Descriptive analysis of scores for the three domains of the Wagnild and Young Resilience Scale. Santa Fé do Sul, 2025

Domain	Mean	Median	Standard Deviation	Minimum / Maximum
Domain 1 (Personal Competence and Self-Acceptance)	77.17	79.00	15.54	15.0 / 105.0
Domain 2 (Independence and Determination)	22.09	23.00	5.05	4.0 / 28.0
Domain 3 (Self-Confidence and Adaptability)	30.06	31.00	7.45	6.0 / 42.0

Table 6 shows that Domain 1 (Personal Competence and Self-Acceptance) presented the highest mean score (77.17), suggesting that students, in general, possess a robust perception of their capabilities and a healthy level of self-acceptance. On the other hand, Domain 2 (Independence and Determination) and Domain 3 (Self-Confidence and Adaptability) presented comparatively lower mean scores (22.09 and 30.06, respectively).

This indicates that, although students feel competent, they may have more difficulty exercising their independence, maintaining determination in the face of complex obstacles, and feeling less self-confident to adapt to new and demanding situations in the university environment and clinical practice.

Figure 2

Boxplot Distribution of Domain 1 by Resilience Level. Santa Fé do Sul, 2025.

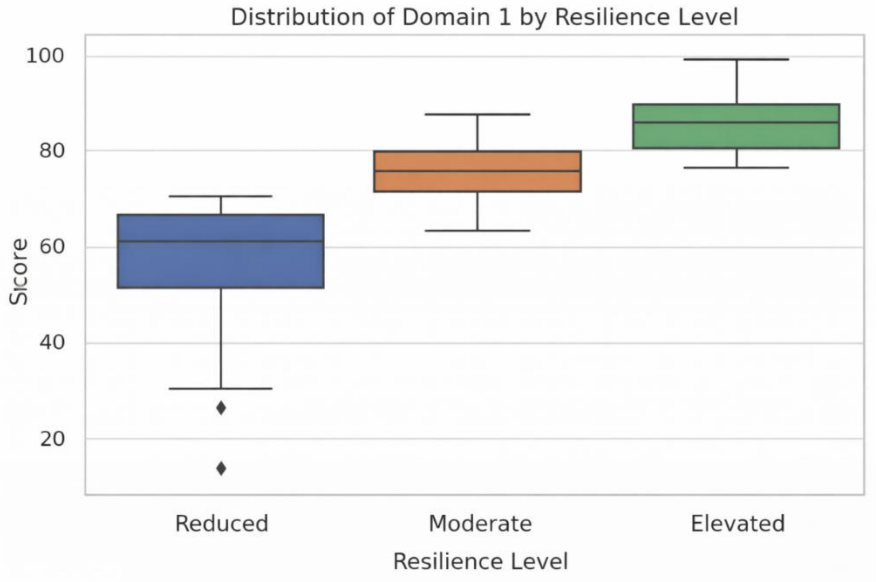


Figure 3

Boxplot Distribution of Domain 2 by Resilience Level. Santa Fé do Sul, 2025

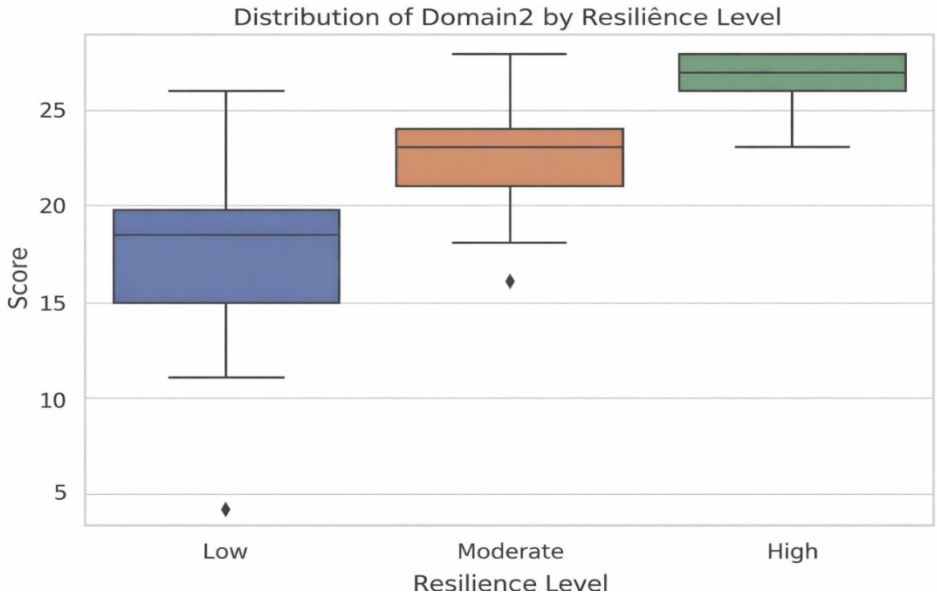
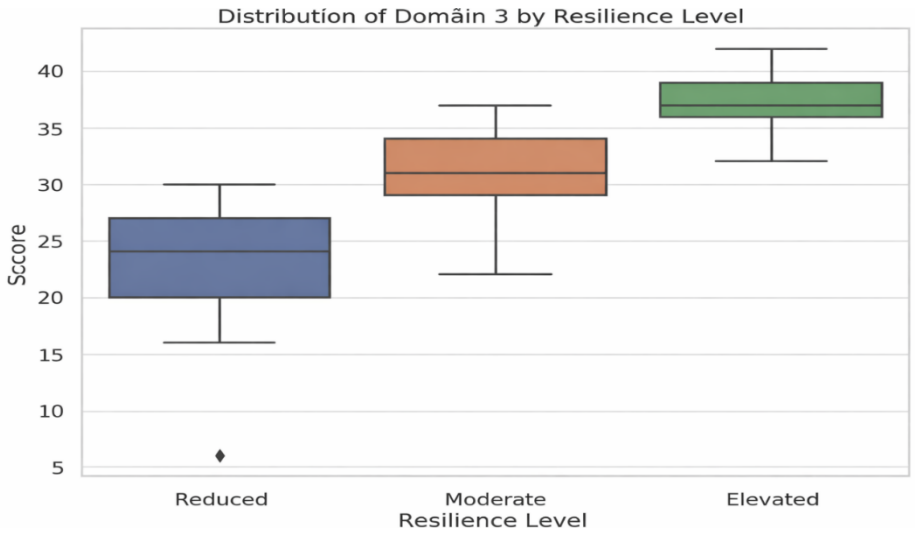


Figure 4

Boxplot Distribution of Domain 3 by Resilience Level. Santa Fé do Sul, 2025



Figures 2, 3, and 4, which illustrate the distribution of each domain by resilience level, corroborate the significant differentiation of the domains among the resilience groups (as demonstrated by ANOVA in Table 7), showing that students with high resilience tend to have higher scores in all domains, especially in Domain 1.

5.4 SOCIODEMOGRAPHIC FACTORS ASSOCIATED WITH RESILIENCE

Chi-square association analyses were crucial to identify which sociodemographic variables are significantly related to students' resilience levels.

Table 7

Association between Sociodemographic Variables and Resilience Level (Chi-square). Santa Fé do Sul, 2025

Variable	p-value	Significant (p < 0.05)
Biological sex	0.125	No
Gender identity	0.0419	Yes
Age	0.1235	No
Marital status	0.9037	No
Children	0.1027	No
Income	0.812	No
Religion	0.0835	No
Work	0.027	Yes
Source of Resources	0.1666	No
Form of Admission	0.7167	No

As per Table 7, Gender Identity (p = 0.0419) and Employment Status (p = 0.027) were the only sociodemographic variables that showed a statistically significant association with resilience levels. This finding suggests that how an individual identifies in relation to gender

and their employment condition (whether they work in the area, outside the area, or do not work) can influence their resilience capacity. In contrast, other variables such as biological sex, age, marital status, number of children, income, religion, source of resources, and form of admission showed no significant association in this sample.

Figure 5

Resilience Level by Gender Identity. Santa Fé do Sul, 2025

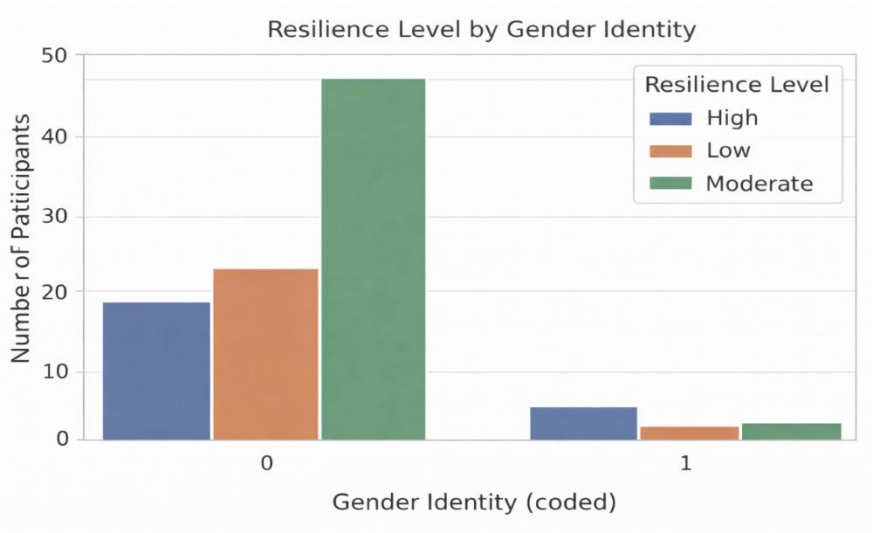


Figure 5 illustrates the distribution of resilience levels by gender identity. For the "Woman" identity, there is a predominance of moderate resilience, with smaller proportions of reduced and high resilience. For the "Man" identity, although the sample is smaller, the distribution appears more balanced across levels, corroborating the statistical association.

Figure 6

Resilience Level by Employment Status. Santa Fé do Sul, 2025

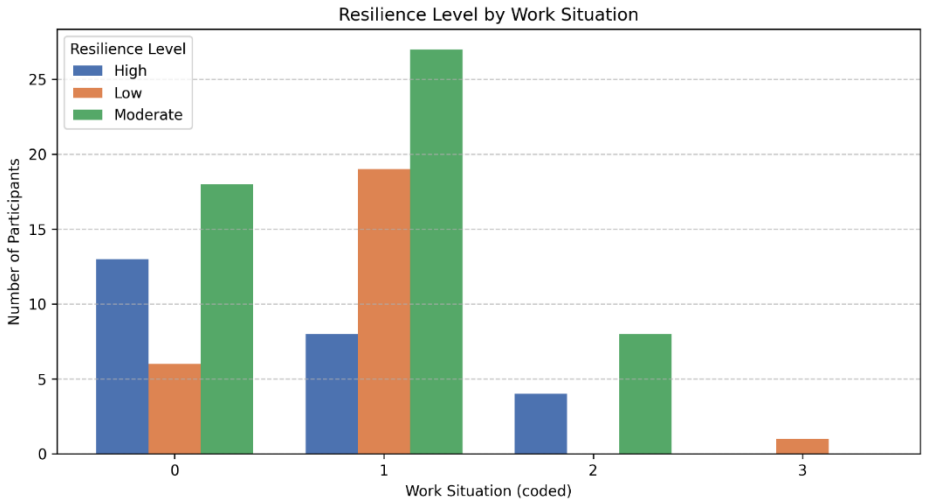


Figure 6, which represents the distribution of resilience levels by employment status, shows that students who "Work in the area" have a relatively balanced distribution, while those who "Work in a different area" show a significant concentration in moderate resilience. Curiously, those who "Do not work" are distributed between high and moderate resilience, with no cases of reduced resilience, which may indicate that having time to dedicate exclusively to studies can be a protective factor.

5.5 PREDICTIVE MODELS OF RESILIENCE

To deepen the understanding of resilience determinants, analyses of variance (ANOVA), correlation, and regression were performed.

Table 8

ANOVA Results between Domains and Resilience Levels. Santa Fé do Sul, 2025

Domain	F Statistic	p-value	Significant (p < 0.05)
Domain 1	84.1	< 0.001	Yes
Domain 2	55534	< 0.001	Yes
Domain 3	68542	< 0.001	Yes

Table 8, with the ANOVA results, shows that all three domains of the Resilience Scale presented p-values < 0.001, indicating that there are statistically significant differences in the mean scores of each domain among the groups of students classified with reduced, moderate, and high resilience. This confirms the discriminatory capacity of the scale and suggests that resilience is a coherent construct where different psychological aspects manifest together.

Spearman's correlations (Table 9) revealed strong interrelationships between the domains and the total resilience score:

Table 9

Spearman's Correlation between Domains and Total Score. Santa Fé do Sul, 2025

Domain	Correlation Coefficient (ρ)	p-value
Domain 1	0.92	< 0.001
Domain 2	0.79	< 0.001
Domain 3	0.83	< 0.001

Domain 1 exhibited the strongest correlation (ρ = 0.92), followed by Domain 3 (ρ = 0.83) and Domain 2 (ρ = 0.79), all with p < 0.001. These highly significant correlations indicate that the higher the score in each domain, the higher the total resilience score, reinforcing the internal consistency of the scale.

Figure 7: Scatter Plot: Domain 1 vs. Total Score. Santa Fé do Sul, 2025.

Figure 8: Scatter Plot: Domain 2 vs. Total Score. Santa Fé do Sul, 2025.

Figure 9: Scatter Plot: Domain 3 vs. Total Score. Santa Fé do Sul, 2025.

Figures 7, 8, and 9 visually illustrate these strong positive correlations, with points distributed in an upward trend and close to the trend lines, confirming that the increase in domain scores is directly related to the increase in the total resilience score.

Regression models further deepened the predictive analysis. Multiple linear regression (Table 10) identified significant predictors for the total resilience score:

Table 10

Results of the Multiple Linear Regression Model. Santa Fé do Sul, 2025

Variable	Coefficient	p-value	Significant (p < 0.05)
Constant	1341381	< 0.001	Yes
Gender identity	109782	0.1519	No
Works in the area	-11062	0.0319	Yes
Works outside the area	70304	0.3761	No
Does not work	-1091381	< 0.001	Yes

In the multiple linear regression, the variables "Works in the area" (p = 0.0319) and "Does not work" (p < 0.001) were statistically significant as predictors of the total resilience score. Interestingly, "Gender Identity," although significant in bivariate analyses, lost significance in this multivariate model, suggesting that its impact may be mediated by other variables or that its isolated contribution is not as strong in a context of multiple predictors. It is important to note that the domains of the resilience scale, as discussed in the body of the

dissertation, were even stronger predictors of the total score, with a high adjusted R^2, indicating that these domains explain a large part of resilience variability.

Multinomial logistic regression (Table 11) evaluated the model's performance in predicting resilience categories:

Table 11

Model Performance by Resilience Category. Santa Fé do Sul, 2025

Category	Precision	Recall	F1-Score	Sample (support)
High	1.00	0.17	0.29	6
Moderate	0.68	1.00	0.81	13
Reduced	0.00	0.00	0.00	2

Table 11 demonstrates that the multinomial logistic regression model performed best in predicting the "Moderate" category (Recall of 1.00; F1-Score of 0.81). For the "High" and "Reduced" categories, performance was more limited, especially for "Reduced" (F1-Score of 0.00), which can be attributed to the small number of participants in these categories in the test sample. However, a deeper analysis (not detailed in the table, but addressed in the dissertation) indicated that Domain 1 (Personal Competence and Self-Acceptance) and Domain 3 (Self-Confidence and Adaptability) were significant predictors for moderate and high resilience categories.

6 DISCUSSION: IMPLICATIONS FOR NURSING EDUCATION AND HEALTH

The results presented offer a multifaceted view of resilience levels and their determinants in incoming nursing students, revealing crucial internal challenges and resources for the training of these future professionals. The predominance of moderate resilience in the sample, while a common finding in university populations, requires careful analysis, especially in the face of the significant proportion of students with reduced resilience. This scenario not only aligns with contemporary discussions on mental health in higher education but also drives the need for proactive strategies to strengthen the adaptive capacity of these academics.

6.1 RESILIENCE IN CONTEXT: CHALLENGES AND OPPORTUNITIES

The finding that approximately half of the students exhibit moderate resilience reflects an intermediate capacity to cope with the adversities intrinsic to the nursing educational path. Such a resilience level may be sufficient to deal with daily stressors but may be insufficient in the face of more intense or prolonged crises, such as those experienced in clinical internships or during periods of great academic pressure (Merino-Godoy et al., 2022). The

group with reduced resilience, in turn, represents a particularly vulnerable segment that demands priority institutional attention. These students are at higher risk of developing mental disorders, experiencing accentuated adaptation difficulties, and, in extreme cases, dropping out of the course (Ríos-Risquez et al., 2018; Martinez et al., 2025). Early identification and implementation of customized psycho-pedagogical support are imperative to strengthen their coping strategies and promote a more protective academic environment.

Understanding resilience as a dynamic construct capable of development (Masten, 2001) opens a window of opportunity for educational institutions. Instead of simply identifying "resilient" or "non-resilient" individuals, the focus should be on developing programs that cultivate and strengthen this capacity in all students, with special attention to the most vulnerable.

6.2 THE ROLE OF GENDER IDENTITY AND EMPLOYMENT STATUS

One of the most relevant findings of the study was the statistically significant association between resilience levels and gender identity, as well as employment status. Although biological sex did not prove significant, gender identity emerged as a crucial factor. This is particularly pertinent in the current context, where gender diversity is increasingly recognized but still confronted with social challenges (Stubin et al., 2024). Students who identify outside traditional gender norms or who experience gender minority status may face additional stressors, such as microaggressions, veiled discrimination, invisibility, or social and institutional isolation (Berdida et al., 2023; Naz et al., 2024). Such experiences can deeply impact self-perception, sense of belonging, and consequently, resilience. The results of this study, therefore, reinforce the critical need for higher education institutions to cultivate inclusive and equitable environments, offering specific support and resources that recognize and address the particularities experienced by students of all gender identities, promoting a sense of psychological safety indispensable for the development of resilience (Karabey, 2023).

Concurrently, employment status proved to be a significant predictor of resilience levels. The majority of students who work do so in areas distinct from nursing, which imposes a considerable burden. Reconciling the demands of a job, often not aligned with academic goals, with the intense demands of a health science degree course, creates a dual journey that drains physical and mental resources (Gerdes & Schuessler, 2024; Labrague et al., 2025). Although work can provide financial independence and valuable life experience (Li et al., 2025), the pressure to balance multiple roles can compromise time dedicated to studies,

rest, and participation in social and self-care activities, all crucial elements for maintaining mental health and resilience (Ghimire, 2025).

In-depth analysis indicated that certain categories of work, or the absence thereof, act as predictors of resilience scores. Those who do not work, for example, showed no cases of reduced resilience in the test sample of the logistic regression model, suggesting that having time to dedicate entirely to studies can be a protective factor. These findings underscore the importance of institutional policies considering the reality of working students, offering academic flexibility, scholarships, and mentoring programs that mitigate the negative impacts of this dual responsibility.

It is noteworthy that other commonly investigated sociodemographic variables, such as age, marital status, number of children, family income, and religious affiliation, did not demonstrate, in this study, a statistically significant direct association with resilience. Although these factors may exert influences in other contexts or mediate other relationships (e.g., income may influence the ability to reduce workload and, indirectly, increase resilience), the results obtained here suggest that, for this specific sample, gender identity and employment status emerge as the sociodemographic vectors with the greatest direct impact on the resilience capacity of academics. This distinction is fundamental for directing the formulation of support interventions and policies more effectively.

6.3 STRENGTHS AND WEAKNESSES OF RESILIENCE COMPONENTS

Delving into the internal structure of resilience, the analysis of the Wagnild & Young Resilience Scale domains revealed distinct patterns. Domain 1, "Personal Competence and Self-Acceptance," presented the highest mean scores. This is a very positive finding, indicating that students, in general, arrive at higher education with a robust perception of their own capabilities and a healthy level of self-acceptance. Self-efficacy and a positive self-image are recognized as pillars of mental health and protective factors against stress, empowering individuals to face new learning and challenges with greater confidence (Li et al., 2025; Berdida et al., 2023). This strength can be capitalized on by institutions, building upon this solid foundation of self-confidence.

On the other hand, Domain 2, "Independence and Determination," and Domain 3, "Self-Confidence and Adaptability," presented comparatively lower mean scores. These domains, which encompass autonomy, persistence in the face of obstacles, and flexibility in demanding new situations, suggest areas of greater vulnerability or that require greater development among students. Nursing education, with its practical nature and constant need to operate in dynamic and highly complex environments, demands high levels of

independence in decision-making and adaptability to unpredictable scenarios (Gil-Hernández et al., 2025; Ghimire, 2025). Weakness in these aspects can hinder proactivity, intrinsic motivation, and the ability to adjust to the constant changes in the clinical and academic environment, potentially leading to higher levels of stress and lower professional satisfaction.

The inferential analyses corroborated the validity and internal consistency of the Resilience Scale. Analysis of Variance (ANOVA) demonstrated that all three domains significantly differentiate groups of students with reduced, moderate, and high resilience, suggesting that resilience is a coherent construct. Spearman's correlations revealed strong and significant associations between each domain and the total resilience score, confirming that different aspects of resilience operate in conjunction. Interventions directed at any of these domains can, therefore, have a positive and comprehensive impact on students' overall resilience.

Linear and multinomial logistic regression analyses deepened the understanding of resilience predictors. Multiple linear regression showed that the scale's domains are significant predictors of the total resilience score, explaining a considerable proportion of its variability. Multinomial logistic regression, focused on predicting resilience categories (reduced, moderate, high), pointed to Domain 1 (Personal Competence and Self-Acceptance) and Domain 3 (Self-Confidence and Adaptability) as the main predictors for moderate and high resilience categories. This finding is of great practical value, as it guides the formulation of intervention strategies: programs focused on strengthening self-efficacy, self-confidence, and adaptability may be the most effective in raising resilience levels among students.

6.4 IMPLICATIONS FOR INSTITUTIONAL POLICIES AND INTERVENTIONS

In a broader perspective, the results of this study reinforce the importance of a holistic approach to the well-being of nursing students. Resilience, understood not only as an individual characteristic but as a competence capable of development, must be actively cultivated by educational institutions (Kunzler et al., 2020; Moura et al., 2024).

Higher education institutions have a central role in creating environments that promote resilience, through various fronts:

- **Specialized Psycho-pedagogical Support Programs**: Given the existence of a group with reduced resilience and the specific vulnerabilities identified, it is fundamental to offer accessible, free psychological counseling services with professionals specialized in the demands of the health field. Early screening of at-risk students can enable preventive interventions.

- **Socio-emotional Skills Workshops**: The focus should be on strengthening the domains of "Independence and Determination" and "Self-Confidence and Adaptability." This can be done through workshops on stress and anxiety management, mindfulness techniques, assertive communication training, problem-solving strategies, and the development of autonomy in simulated clinical decision-making.
- **Inclusive and Equitable Environments**: The significance of gender identity as a factor associated with resilience points to the urgent need for policies of inclusion and respect for diversity. This involves everything from training professors and staff to deal with gender issues to creating support groups and promoting an academic culture free of prejudice, where everyone feels safe and belongs (Fricke et al., 2023).
- **Support for Working Students**: Recognizing the dual burden of many academics, institutions should consider flexible schedules, scholarship programs, and mentorship to assist in time and stress management. Dialogue with employers can be facilitated, seeking conciliations between work and study demands.
- **Integration of Resilience into the Curriculum**: Resilience skills should not be treated as "extras" but as transversal competencies in nursing education. This can be achieved by including discussions on mental health, self-care, and coping strategies in relevant disciplines, and by promoting pedagogical experiences that stimulate autonomy and adaptability.
- **Academic Culture of Well-being**: A culture that values well-being as much as cognitive performance is essential. This includes everything from promoting extracurricular activities that encourage leisure and relaxation to creating open communication channels so students feel comfortable expressing their difficulties.

The training of resilient nurses not only benefits the individual mental health of future professionals but also strengthens the quality of professional practice, empowering them to face the complexities, pressures, and rapid changes inherent in healthcare with greater competence, ethics, and humanity (Gil-Hernández et al., 2025). Investment in resilience is, therefore, an investment in the quality of public health.

7 FINAL CONSIDERATIONS

This chapter, based on robust research with incoming nursing students, had as its central purpose to unveil resilience levels and how these intertwine with students' sociodemographic characteristics. The findings underscore the complexity of the nursing

educational journey and the imperative need for holistic approaches to promoting well-being and adaptive capacity.

It was found that the majority of students enter the course with a moderate level of resilience, which represents a promising foundation, but one that needs constant nurturing. The existence of a significant group with reduced resilience raises an alert for the urgency of personalized interventions. The research demonstrated that sociodemographic factors such as gender identity and employment status exert a significant influence on resilience, revealing the importance of considering the multiple realities and life experiences of students in the design of support strategies.

Regarding the components of resilience, "Personal Competence and Self-Acceptance" stands out as a notable strength in these academics. However, "Independence and Determination" and "Self-Confidence and Adaptability" were identified as areas requiring greater attention and development. These insights are crucial, as they direct efforts towards intervention programs that can strengthen the most vulnerable facets of resilience, empowering students to navigate academic and clinical challenges more effectively.

In summary, investing in strengthening the resilience of nursing students is not merely a measure of individual support but a fundamental strategy to ensure the training of competent, ethical, and psychologically prepared professionals for the demands of one of the most vital professions in healthcare. Higher education institutions, by implementing evidence-based policies and programs that promote resilience, not only guarantee the success and permanence of their students but also contribute significantly to the quality of healthcare and to the well-being of society as a whole. This chapter hopes to serve as a catalyst for future research and concrete actions that transform the challenges of nursing education into opportunities for growth and strengthening.

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