Correlation between Overthinking and Procrastination Behavior Among Nurses

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ABSTRACT

Context: A key challenge in understanding internalizing psychological disorders is identifying the cognitive processes that sustain distress and disrupt effective functioning. Recurrent, hard-to-interrupt thinking patterns may interfere with individuals' ability to initiate and complete intended tasks. Concurrently, individuals may persistently delay necessary actions despite recognizing their negative consequences, indicating a breakdown between intention and behavior. This pattern of delay appears to be associated with seeking short-term emotional relief, reduced consideration of future outcomes, and avoidance of prolonged effort. While these issues have been studied independently, their overlapping mechanisms require further investigation. The potential role of repetitive cognitive processes in maintaining procrastination remains underexplored, suggesting a need to examine how these mechanisms contribute to functional impairment across internalizing conditions.

Aim: This study aimed to assess the correlation between overthinking and procrastination behavior among nurses.

Methods: This study utilized a descriptive correlational research design to gather data. It was conducted in both inpatient wards and outpatient clinics at Fayoum University Hospitals. A purposive sample of 151 nurses from various clinical departments participated. Data collection was conducted using a structured interview questionnaire that the assessment of sociodemographic characteristics, as well as the Perseverative Thinking Questionnaire (PTQ) to measure levels of overthinking. The General Procrastination Scale (GPS) was used to measure procrastination behavior.

Results: Demographic characteristics were as follows: most nurses were women (71.5%) and belonged to the 20–24 age group (54.3%). A notable proportion were unmarried (69.5%), and the majority held a bachelor's degree of nursing (90.7%). Additionally, over half of the participants (56.3%) reported insufficient income. 15.2% of participating nurses exhibited low levels of overthinking, 49.7% moderate levels, and 35.1% high levels. Also, 1.0% of the nurses studied had low total procrastination, 78.0% of them had moderate total procrastination and (21.0%) of them had high procrastination.

Conclusion: A significant positive relationship was observed between overthinking and procrastination. Counseling sessions are recommended to help nurses address overthinking patterns and procrastination behaviors during clinical practice.

Keywords: Overthinking, procrastination behavior, nurses

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1. Introduction

Procrastination in nursing practice is a complex, multifaceted issue. It involves impaired self-regulation, recognition of adverse outcomes, and the deliberate delay of intended tasks. Contributing factors include elevated occupational stress, low self-efficacy, and compromised physical or psychological well-being. These effects may be associated with diminished care quality, reduced motivation, professional burnout, and risks to patient safety. Procrastination may thus represent more than a time management problem, reflecting a broader systemic concern that can potentially impact patient outcomes and workforce performance *(Zhang et al., 2025a)*. Evidence from previous studies indicates that procrastination varies across nursing and medical groups. Reported prevalence rates among nurses range from 80% to 95% *(Steel, 2010; Kim & Seo, 2015)*.

Among nurses, procrastination has been reported at lower, yet significant, levels, with rates ranging from approximately 37% to 63% across studies *(Klassen et al., 2008; Balkis, 2013; Sirois et al., 2003; Babaie et al., 2022)*. Procrastination in this population has been conceptualized as

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a multidimensional construct comprising distinct subtypes. Task aversion is the most prevalent form (44.2%), followed by anxiety-related procrastination (21.1%), inefficiency-related delays (18.4%), and situational delays influenced by environmental or contextual factors *(Chu & Choi, 2005; Steel, 2010)*. These subtypes delineate the varied manifestations of procrastination among nurses.

Reliable and validated measurement tools have been developed to capture variations in procrastination behavior across populations. Tools such as the General Procrastination Scale (Cronbach's α = 0.82; test–retest reliability = 0.80) enable consistent assessment of these behaviors. Correlational studies indicate significant associations between procrastination and burnout, anxiety, depression, and decreased professional performance, underscoring its relevance as a clinical and organizational concern *(Zhang et al., 2025b)*.

An Iranian study on nurses in surgery and intensive care units examined procrastination in high-risk clinical settings. Using a validated organizational procrastination questionnaire, researchers investigated behavioral domains of procrastination, including inefficiency, anxiety, and task aversion. Findings suggest that procrastination is prevalent among nursing staff and may negatively affect the quality, safety, and timeliness of patient care. These outcomes appear to be influenced by both individual and organizational factors, highlighting the complex interplay underlying procrastinatory behaviors in clinical settings *(Babaie et al., 2022)*.

Factors contributing to procrastination are diverse and include present-biased preferences, avoidance behaviors, self-justification, occupational pressures, perceived severity of health problems, and personal beliefs. Health-related procrastination can result in physical problems, such as disease aggravation and prolonged recovery; psychological problems, including anxiety, guilt, and self-blame; and social problems, such as impaired work performance and reduced self-efficacy. Collectively, these findings demonstrate the interrelated and multifaceted nature of procrastination in nurses *(Basirimoghadam et al., 2020a)*.

Beyond procrastination, perseverative thoughts—such as worry, rumination, obsessions, or intrusive memories—play a critical role in nurses' cognitive functioning and mental health. Historically, these thoughts were treated as discrete categories, but in practice, they often overlap. Dimensional models of perseverative thought emphasize shared underlying features, such as repetitiveness, valence, and purpose, facilitating more accurate classification, assessment, and intervention development *(Hallion et al., 2022)*.

Cognitive-behavioral perspectives propose that dysfunctional self-regulation patterns—such as Cognitive Attentional Syndrome, low tolerance for uncertainty, maladaptive metacognitive beliefs, and externally imposed perfectionistic standards—are associated with the emergence of procrastination and emotional distress *(Dąbrowa, 2025)*. Empirical studies support these theoretical perspectives. For example, analysis of nurses indicated that 37% exhibited high or very high levels of procrastination, with task aversion identified as the prevailing dimension. Additionally, associations were identified between procrastination and sociodemographic characteristics, including gender, age, marital status, educational attainment, work experience, and occupation. These findings indicate that both individual and organizational factors may influence procrastinatory behaviors, supporting the need for multilevel strategies *(Babaie et al., 2022; Zhang et al., 2025a)*.

Clinical reasoning, a dynamic cognitive process essential to nursing, is closely intertwined with these patterns of procrastination and overthinking. Nurses rely on clinical reasoning to set priorities, develop intervention rationales, anticipate complications, and adapt to patient needs. Reflection enhances this process by enabling nurses to evaluate outcomes and refine future practice, illustrating the link between cognitive processes, decision-making, and patient care quality. Moreover, research has shown that overthinking is linked to psychological distress and health-related behaviors *(Chu & Choi, 2005; Steel, 2010)*.

Meta-analytic evidence indicates that persistent negative thinking patterns, especially overthinking, are linked to greater involvement in health-risk behaviors, including substance abuse and unhealthy dietary habits, potentially contributing to long-term disease risk. In nursing populations, ruminative thinking correlates with empathy, social support, feedback-seeking behaviors, and work-related factors, indicating the importance of supportive interventions to mitigate negative cognitive patterns and promote well-being *(Cao et al., 2024; Clancy et al., 2016; Mattioni et al., 2023)*.

Collectively, these results highlight the critical significance of procrastination and overthinking in nursing practice. Nurses face high physical and psychological demands, and delays in action—even though the possible adverse consequences are recognized—are linked to anxiety, depression, and diminished self-rated health.

2. Significance of the study

Nurses play a key role in maintaining public health and providing care to the community. The profession demands both physical stamina and psychological resilience, as nurses deliver essential services continuously. Delaying intended tasks unnecessarily, even when aware of possible negative consequences, has been linked to adverse emotional states among nurses, including anxiety, depression, shame, and guilt. Moreover, elevated levels of procrastination have been independently associated with poorer self-rated health (SRH), with each increase in procrastination corresponding to a 5% decrease in the likelihood of reporting better SRH *(Cao et al., 2024)*.

Additional factors such as level of education, age, absence of chronic illness, and satisfaction with financial status were also found to influence SRH outcomes *(Basirimoghadam et al., 2020a)*. These results highlight the significance of addressing procrastination to improve nurses' well-being and maintain the quality of care. Understanding the cognitive and behavioral mechanisms underlying procrastination enables educators, leaders, and researchers to design interventions that support nurses' performance, mental health, and, ultimately, patient safety *(Basirimoghadam et al., 2020a; Dąbrowa, 2025)*.

Recent research emphasizes that procrastination behaviors are not uniform but arise from distinct

psychological processes and therefore require different intervention strategies. Decision-making difficulties often occur prior to making a choice and are driven by factors such as intolerance of uncertainty, persistent worry, and overthinking, commonly described within the Cognitive Attentional Syndrome. These tendencies may be further intensified by environmental influences such as choice overload and perfectionistic expectations, leading to behaviors like repeated comparison, reassurance-seeking, and reliance on default options. In contrast, procrastination typically occurs after a decision has already been made. It is primarily influenced by task aversiveness, temporal discounting, and short-term mood regulation, resulting in delayed action despite clear intentions *(Dąbrowa, 2025).*

Overthinking involves re-evaluation of decisions and fear of making mistakes, which may increase anxiety and reduce confidence. This mental overload can lead to procrastination, where the nurse delays necessary clinical tasks or decision-making despite understanding their importance. In patient care settings, such delays may affect timely medication administration, accurate documentation, prioritization of interventions, and rapid response to patient needs. In addition to increase in occupational stress and burnout among nurses. Therefore, addressing overthinking and procrastination is essential to enhance nursing performance and ensure high-quality, safe patient care.

3. Aim of the study

This study aimed to assess the correlation between overthinking and procrastination behavior among nurses in clinical settings. This objective was accomplished through the following steps:

- Assess overthinking among the nurses.
- Assess procrastination behavior among nurses.
- Assess the correlation between overthinking and procrastination behavior.

3.1. Research questions

- Is overthinking common among nurses?
- What is the procrastination behavior among nurses?
- Is there a relation between overthinking and procrastination behavior among nurses in clinical settings?

3.2. Operational definition

Overthinking is repetitive, difficult to control mental activity that is a central transdiagnostic process underlying many internalizing psychopathologies, including depression, anxiety, and obsessive-compulsive disorders.

Procrastination refers to the deliberate delay of a planned action even when negative outcomes are expected. It has been linked to a diminished sense of time value, a tendency to seek short-term emotional relief, and an avoidance of prolonged effort.

4. Subjects & Methods

4.1. Research Design

A descriptive correlational research design was a non-experimental, quantitative method used to measure and describe the statistical relationship between variables (overthinking and procrastination behavior among nurses), without manipulating any variables. This design was appropriate because the study aimed to find the degree and direction of association between the two variables as they naturally occur in clinical settings.

4.2. Study Setting

This study was carried out in the inpatient and outpatient departments of Fayoum University Hospitals. The first hospital (Internal Medicine) consists of three floors. The second-floor houses outpatient clinics with 15 nurses, while the third floor contains the inpatient ward with 35 nurses and the intensive care unit with 24 nurses. The second hospital (Surgical) also consists of three floors. The second floor houses an outpatient clinic with 17 nurses, while the third floor contains the inpatient ward with 28 nurses and the intensive care unit with 24 nurses. The third hospital (Pediatric) consists of three floors. The first-floor houses outpatient clinics with 10 nurses; the second floor houses the inpatient ward with 21 nurses; and the third floor houses the intensive care unit with 16 nurses.

4.3. Subjects

A purposive sample of 151nurses from the total number of nurses equal to 190 nurses.

Sample size

The sample size was calculated with a statistical power of 80% and a confidence level of 95%, with an acceptable margin of error of 5%. The calculation was based on the following parameters: a Type I error (α) of 0.016, a Type II error (β) of 0.75, and a test power of 0.95.

$$n = \frac{N \times p(1-p)}{\left[\left[N-1 \times \left(d^2 \div z^2\right)\right] + p(1-p)\right]}$$

$$\frac{190 \times 0.50(1-0.50)}{[[190-1 \times (0.05x^2 \div 1.96\,x^2)] + 0.50(1-0.50)]} = 151$$

The sample size (n) was estimated using a standard equation in which z represents the standard score (1.96), d denotes the margin of error (0.75), P refers to the estimated proportion or neutral ratio (0.75), and N indicates the total population size *(Thompson, 2012)*. Based on this calculation, 151 nurses participated in the study.

Inclusion criteria

Participants were required to have at least one year of clinical experience and to provide consent to participate in the study.

4.4. Tools of Data Collection

Data for this study were gathered using two instruments. The initial section of the first instrument was created by the researchers, prepared in clear Arabic, and focused on collecting information related to:

4.4.1. A Structured Interview Questionnaire for Nurses

It comprised two sections as follows:

Section (I): Sociodemographic features of nurses consisted of 6 questions: Gender, age, marital status, level of education, and monthly income.

Section (II): The overthinking questionnaire adopted from *Zetsche et al. (2009) and* was used to measure overthinking. It consisted of 15 closed-ended questions; it was divided into 3 sub-sections:

- Core characteristics of overthinking consisted of 5 closed-end questions as "the same thoughts keep going through my mind repeatedly, thoughts intrude into my mind, and I can't stop dwelling on them."
- Perceived unproductiveness consisted of 5 closed-end questions as "my thoughts repeat themselves, thoughts come to my mind without me wanting them to, and I get stuck on certain issues and can't move on."
- Mental capacity consisted of 5 closed-end questions as "I keep thinking about the same issue all the time, thoughts just pop into my mind, and I feel driven to continue dwelling on the same issue."

Scoring system

It consisted of 15 items, each rated on a five-point Likert scale ranging from "always" to "never," with corresponding scores of 4, 3, 2, 1, and 0. The individual item scores were totaled and then converted into a percentage. The overall score ranged from 0 to 60, reflecting nurses' levels of perseverative thinking, and was classified into three categories. The sum of the item scores was transformed into percentage values according to the classification described by *Devynck et al. (2017)*:

- Low thinking (0–20 scores)
- Moderate thinking (21–40 scores)
- High thinking (41–60 scores).

4.4.2. The General Procrastination Scale (GPS)

It was adopted from *Lodha et al. (2019),* to assess the procrastination behaviors among nurses. It consists of 23 items, divided into 4 sub-sections:

- Academic procrastination consisted of 7 closed-ended questions as "I often delay tasks that are desirable to me, I prefer submitting an assignment before the deadline, and I generally don't start working on a project or assignment immediately."
- Workplace procrastination consisted of 10 closed-end questions as "I often try to avoid doing a task that I have little or no interest in; when a task is highly stressful, I'm likely to put in more effort; and I begin work immediately on a task once it has been given to me."
- Medical procrastination consisted of 2 closed-ended questions as "I think that certain problems can subside or be solved on their own, with a passage of time, and I often delay attending to medical issues concerning my health."
- Civic responsibility–related procrastination consisted of 4 closed-ended questions as "I have often had services terminated because of unpaid bills, I am usually late when I have to go out and meet friends for a movie, dinner, or other such plans, and I postpone my chores to a later time when something more interesting comes up."

Scoring system

It comprised 23 items, each evaluated using a five-point Likert scale ranging from "always" to "never," with scores assigned from 5 to 1. The item scores were summed and then converted to a percentage. The total score ranged from 23 to 115, representing nurses' levels of general procrastination. The summed scores were then transformed into percentage values according to the classification outlined by *Mohamed et al. (2020)* and was categorized into three levels.

- Low procrastination (23–53 scores)
- Moderate procrastination (54–84 scores)
- High procrastination (85–115 scores).

4.5. Procedures

It comprised the preparatory phase, assessment of tools' content validity and reliability, a pilot study, and the fieldwork phase.

Ethical clearance for the study was obtained from the Scientific Research and Ethics Committee at the Faculty of Medicine, Fayoum University, with approval number (R628/2024). Participants were informed that their participation was voluntary, that they could withdraw at any time, and that all information provided would be kept confidential. They were further assured that the collected data would be used exclusively for the study and for their benefit. Data collection commenced after written informed consent was obtained from the nurses.

Formal approval was secured from the Dean of the Faculty of Nursing at Fayoum University and was addressed to the general managers of the three university hospitals where the study took place. The letter authorized data collection and clarified the study's objectives and nature.

Tool validity and reliability

Content Validity: The instrument was reviewed by a panel of five expert professors for clarity, relevance, comprehensiveness, ease of understanding, and applicability. This panel included three specialists in psychiatric nursing, one in community health nursing, and one from the nursing administration department. Their evaluation was used to assess both face and content validity, and the tool was revised accordingly.

Tool Reliability: Reliability was evaluated by administering the same instruments to the same participants under similar conditions to assess the consistency of the measures. Responses obtained across repeated administrations were compared, yielding a test–retest reliability coefficient of 0.949 for the overthinking scale. Moreover, the procrastination behavior scale demonstrated high internal reliability (Cronbach's alpha = 0.923).

A pilot study was conducted with 10% of the participants (15 nurses) to evaluate the feasibility of the research procedures and the practicality, clarity, and objectivity of the instruments. The findings indicated that no revisions were necessary, and participants who took part in the pilot phase were later incorporated into the main study sample.

Field work: Data collection was conducted from January through the end of March 2025. The researchers clarified the study objectives and provided instructions for completing the questionnaire. They visited the hospital twice weekly (Tuesdays and Thursdays) between 11:00 a.m. and 1:00 p.m. Following the required permissions, questionnaires were distributed to the nurses. Each questionnaire took approximately 5–10 minutes to complete, with an overall estimated completion time of 20-30 minutes.

At the start of the interview, the researchers introduced themselves and obtained written informed consent from the participants. Nurses were asked to complete the questionnaires at their workplaces, and the researchers collected them afterward. Approximately 12–13 nurses were recruited each week, amounting to around 50 participants per

month. Over the three-month period, 151 nurses were included in the study.

4.6. Data analysis

The gathered data were checked, coded, and entered into a computer for analysis. Statistical analysis was conducted using the Statistical Package for the Social Sciences (SPSS) v. 24. Findings were presented using descriptive statistics, including frequencies and percentages. Quantitative variables were expressed as means and standard deviations, while qualitative variables were presented as percentages.

The independent samples t-test was used to compare the mean scores between two groups (e.g., gender and income), while one-way analysis of variance (ANOVA) was used to compare mean scores among more than two groups (e.g., age, marital status, educational level, and years of experience). Spearman's correlation coefficient was used to determine the strength and direction of relationships between study variables. Levels of statistical significance were defined as non-significant when $p>0.05$, significant when $p\leq0.05$, and highly significant when $p<0.01$.

5. Results

Table 1 provides a clear presentation of key sociodemographic features. It reveals that 71.5% of nurses were females and that within the age group of 20-24 years or less (54.3%). Most respondents were single (69.5%) and held a bachelor's degree in nursing (90.7%). More than half of the nurses (56.3%) reported having an unsatisfactory income.

Table 2 illustrates that, the frequency of overthinking patterns among nurses across multiple cognitive domains. Overall, regarding core characteristics of overthinking, a considerable proportion of respondents reported experiencing sometimes for same thoughts keep going through my mind again and again (44.4%), often 17.2%, or almost always (7.3%). Also, sometimes they think about many problems without solving any of them (33.1%).

Perceived unproductiveness items such as "My thoughts repeat themselves", show high percentages in the often 31.8% and almost always categories (34.4%). Regarding Mental capacity as "I keep thinking about the same issue all the time" show high percentages in the often (31.1%) and almost always categories (33.1%). The thoughts were not almost always helpful to them (32.5%), suggesting common difficulties with cognitive control. Similarly, many nurses frequently endorsed items reflecting overthinking, which may interfere with problem-solving and concentration.

Figure 1 shows that 15.23% of participating nurses exhibited low levels of overthinking, 49.67% moderate levels, and 35.1% high levels.

Table 3 presents nurses' self-reported procrastination behaviors across various aspects, including academic, workplace, medical, and civic responsibility–related procrastination. Overall, academic procrastination: 33.1% of respondents indicated that they sometimes delay tasks (33.1%), 31.8% preferred to plan ahead, and 31.1% preferred to submit assignments early, revealing mixed tendencies.

Additionally, the workplace procrastination items revealed that, 39.1%, often prefer that for a task highly stressful, I'm likely to put in more effort and do not complete tasks until insisting to complete them.

Concerning medical procrastination, (22.5%) of the studied nurses rarely had often delayed attending to medical issues concerning their health. Conversely, Civic responsibility–related procrastination items, such as 58.9% terminating services due to unpaid bills, had mostly never responses, indicating that these more severe consequences are less common. Also, 39.1% and 30.5%, respectively, prefer sometimes to postpone chores and delaying distressing tasks.

Figure 2 clarified that 0.66% of the nurses studied had low total procrastination, 78.15% of them had moderate total procrastination and 21.19% of them had high procrastination.

Table 4 presents that the total mean score of overthinking. It shows a mean score of 34.80±11.74, with nurses' scores ranging from 14.00 to 60.00, indicating a moderate average level. Procrastination behavior demonstrates a moderate mean of 60.82±9.31, within a nurses' score range of 37.00 to 96.00.

Table 5 presents the relationship between various sociodemographic variables and scores of the overthinking scale. A statistically significant relation was identified between gender and overthinking (p=0.037), with females reporting higher overthinking scores. Income also shows a highly significant association nurses with unsatisfactory income had markedly higher levels of negative thinking than those with satisfactory income (p=0.009). In contrast, age, marital status, educational level, and years of experience showed no significant association with overthinking, as indicated by one-way ANOVA results ($p>0.05$).

Table 6 summarizes the relation between nurses' sociodemographic variables and their procrastination behavior scores. No statistically significant differences were found across any demographic groups, as indicated by the non-significant independent t-tests and one-way ANOVA ($p>$ 0.05). Gender shows nearly identical mean scores for males and females (60.72 vs. 60.86, p=0.934), while age, marital status, educational level, and years of experience similarly demonstrated minimal variation in mean procrastination levels. Income approached but did not reach statistical significance (p=0.072), with higher procrastination observed among those reporting unsatisfactory income.

Table 7 indicates a statistically significant positive correlation between procrastination and overthinking (r=0.470, p=0.000), suggesting that higher levels of procrastination are moderately associated with increased overthinking among nurses. The high level of significance ($p<0.01$) highlights the importance of addressing cognitive aspects when managing procrastination.

Figure 3 shows a positive correlation between overthinking and procrastination behavior.

Table (1): Frequency and percentage distribution of the studied nurses' sociodemographic characteristics (n=151).

Sociodemographic characteristics	No.	%
Gender		
Male	43	28.5
Female	108	71.5
Age		
20-24 years	82	54.3
25-≤29 years	51	33.8
30-≤34 years	9	6.0
≥35 years	9	6.0
Mean ± SD	22.4±0.4	
Marital Status		
Single	105	69.5
Married	45	29.8
Divorced	1	0.7
Educational level		
Bachelor's degree in nursing	137	90.7
Nursing Institute Diploma	12	7.9
Secondary School of Nursing Diploma	2	1.3
Income		
Unsatisfactory	85	56.3
Satisfactory	66	43.7

Table (2): Frequency and percentage distribution of the studied nurses' overthinking responses (n=151).

Variables	Never		Rarely		Sometimes		Often		Almost Always	
	No.	%	No.	%	No.	%	No.	%	No.	%
Core characteristics of Overthinking										
The same thoughts keep going through my mind again and again.	14	9.3	33	21.9	67	44.4	26	17.2	11	7.3
Thoughts intrude into my mind.	0	0.0	29	19.2	35	23.2	57	37.7	30	19.9
I can't stop dwelling on them.	0	0.0	35	23.2	41	27.2	48	31.8	27	17.9
I think about many problems without solving any of them.	0	0.0	36	23.8	50	33.1	46	30.5	19	12.6
I can't do anything else while thinking about my problems.	0	0.0	52	34.4	45	29.8	36	23.8	18	11.9
Perceived unproductiveness										
My thoughts repeat themselves.	0	0.0	27	17.9	33	21.9	48	31.8	52	34.4
Thoughts come to my mind without me wanting them to.	0	0.0	32	21.2	35	23.2	46	30.5	38	25.2
I get stuck on certain issues and can't move on.	0	0.0	43	28.5	19	12.6	45	29.8	44	29.1
I keep asking myself questions without finding an answer.	0	0.0	37	24.5	25	16.6	37	24.5	52	34.4
My thoughts prevent me from focusing on other things.	0	0.0	36	23.8	24	15.9	39	25.8	43	28.5
Mental capacity consumed										
I keep thinking about the same issue all the time.	0	0.0	35	23.2	25	16.6	47	31.1	50	33.1
Thoughts just pop into my mind.	0	0.0	32	21.2	20	13.2	45	29.8	47	31.1
I feel driven to continue dwelling on the same issue.	0	0.0	52	34.4	17	11.3	39	25.8	40	26.5
My thoughts are not much help to me.	0	0.0	49	32.5	24	15.9	36	23.8	49	32.5
My thoughts take up all my attention.	0	0.0	42	27.8	25	16.6	31	20.5	54	35.8

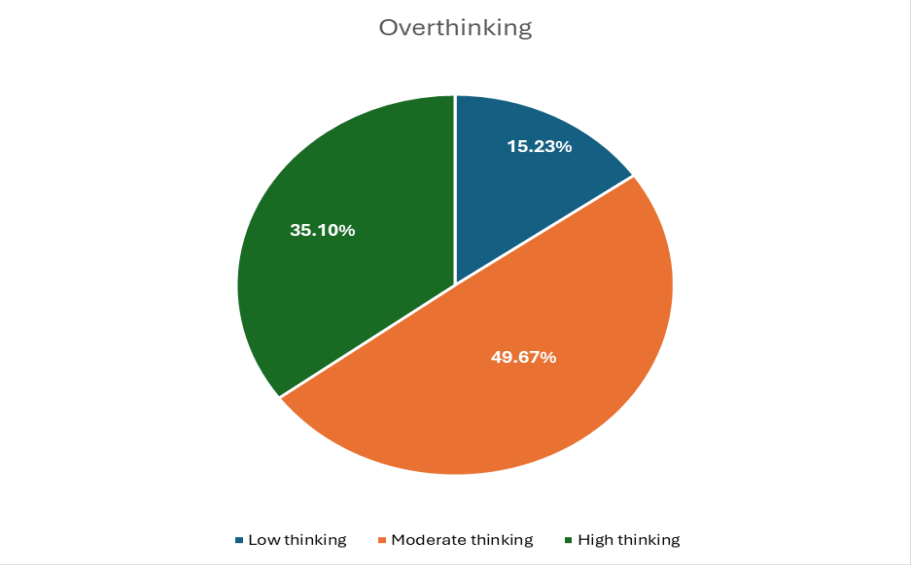

Figure (1): Percentage distribution of studied nurses regarding their total overthinking score (n=151).

Table (3): Frequency and percentage distribution of studied nurses' responses to procrastination behavior (n=151).

Variables	Never		Rarely		Sometimes		Often		Always	
	No.	%	No.	%	No.	%	No.	%	No.	%
Academic procrastination										
I often delay tasks that are desirable to me.	35	23.2	46	30.5	50	33.1	16	10.6	4	2.6
I prefer submitting an assignment before the deadline.	22	14.6	22	14.6	42	27.8	47	31.1	18	11.9
I generally don't start working on a project or assignment immediately.	44	29.1	45	29.8	41	27.2	17	11.3	4	2.6
I think too much about things I would like to do but rarely get around to doing them	21	13.9	35	23.2	62	41.1	22	14.6	11	7.3
I tend to work at the eleventh hour for a task or project.	40	26.5	42	27.8	45	29.8	20	13.2	4	2.6
I prefer planning ahead for tasks and events.	20	13.2	22	14.6	48	31.8	46	30.5	15	9.9
I prefer working on one assignment at a time	22	14.6	22	14.6	42	27.8	47	31.1	18	11.9
Workplace procrastination										
I often try to avoid doing a task that I have little or no interest in.	26	17.2	37	24.5	52	34.4	29	19.2	7	4.6
When a task is highly stressful, I'm likely to put in more effort.	16	10.6	13	8.6	44	29.1	59	39.1	19	12.6
I begin work immediately on a task once it has been given to me.	18	11.9	21	13.9	46	30.5	52	34.4	14	9.3
I often put off doing tasks until urgency develops.	49	32.5	38	25.2	42	27.8	15	9.9	7	4.6
Whenever I make a plan of action, I follow it.	21	13.9	37	24.5	54	35.8	30	19.9	9	6.0
I needlessly delay finishing jobs, even when they're important.	57	37.7	45	29.8	33	21.9	14	9.3	2	1.3
I do not complete tasks until I am insisted to complete them	16	10.6	13	8.6	44	29.1	59	39.1	19	12.6
I am generally late at the workplace or college	18	11.9	21	13.9	46	30.5	52	34.4	14	9.3
I try to avoid any backlog of work	21	13.9	37	24.5	54	35.8	30	19.9	9	6.0
I delay the tasks that distress me	34	22.5	32	21.2	46	30.5	28	18.5	11	7.3
Medical procrastination										
I think that certain problems can subside or be solved on their own, with a passage of time.	39	25.8	30	19.9	52	34.4	26	17.2	4	2.6
I often delay attending to medical issues concerning my health.	34	22.5	32	21.2	46	30.5	28	18.5	11	7.3
Civic responsibility–related procrastination										
I have often had services terminated because of unpaid bills.	89	58.9	37	24.5	18	11.9	5	3.3	2	1.3
I am usually late when I have to go out and meet friends for a movie or dinner or other such plans.	45	29.8	38	25.2	37	24.5	19	12.6	12	7.9
I postpone my chores to a later time when something more interesting comes up.	26	17.2	35	23.2	59	39.1	23	15.2	8	5.3
I feel guilty when I delay doing tasks	34	22.5	32	21.2	46	30.5	28	18.5	11	7.3

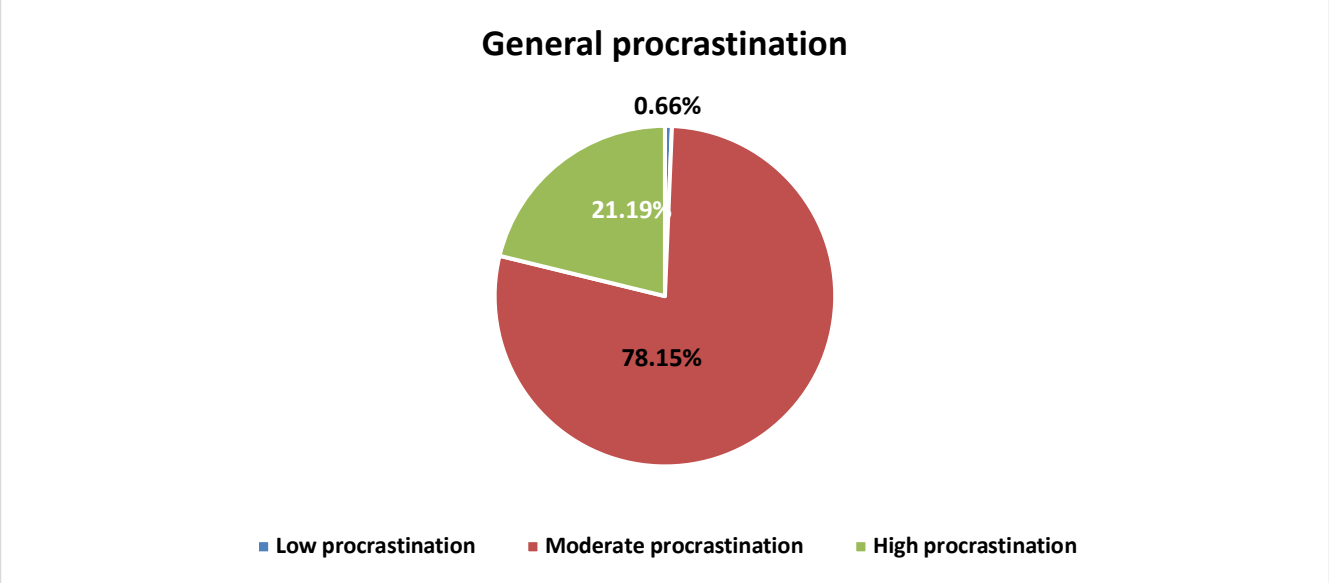

Figure (2): Distribution of studied nurses regarding their general procrastination (n=151).

Table (4): Descriptive statistics of overthinking and procrastination behavior scores (n=151).

Variables	Total score range	Mean±SD	Nurses' responses range
Overthinking	0-60	34.80±11.74	14.00-60.00
Procrastination behavior	23-115	60.82±9.31	37.00-96.00

Table (5): Association between nurses' sociodemographic characteristics and overthinking scores (n=151).

Variables	Overthinking score Mean±SD	Statistical test	*P*-value
Gender			
Male	31.35±13.22	2.126 (##)*	0.037
Female	36.18±10.86		
Age			
20-24 years	34.40±11.87	0.139 (#)	0.937
25-29 years	35.24±10.63		
30-34 years	34.11±14.32		
35 years or more	36.67±15.42		
Marital Status			
Single	35.15±11.42	1.363 (###)	0.259
Married	33.60±12.38		
Divorced	52.00±0.0		
Educational level			
Bachelor's degree in nursing	34.64±11.95	0.311 (#)	0.733
Nursing Institute Diploma	37.17±10.23		
Secondary School of Nursing Diploma	32.00±4.24		
Income			
Unsatisfactory	36.93±12.33	2.631 (##)	0.009
Satisfactory	32.06±10.39		
Years of Experience			
1-3 years	34.93±11.89	0.149 (#)	0.862
3-5 years	33.68±11.07		
More than 5 years	35.33±12.11		

** (#) One-Way ANOVA; (##): Independent t-test; (###) : Kruskal-Wallis test*

Table (6): Association between nurses' sociodemographic characteristics and procrastination behavior (n=151).

Variables	Procrastination Behavior Scale Mean±SD	Statistical test	*P*-value
Gender			
Male	60.72±9.10	0.083 (##)*	0.934
Female	60.86±9.43		
Age			
20-24 years	61.59±9.60	0.765 (#)	0.516
25-29 years	60.39±8.96		
30-34 years	60.22±11.14		
35 years or more	56.89±6.33		
Marital Status			
Single	61.39±8.86	0.715 (###)	0.491
Married	59.60±10.33		
Divorced	56.00±0.00		
Educational Level			
Bachelor's degree in nursing	61.31±9.50	2.065 (#)	0.130
Nursing Institute Diploma	55.83±5.32		
Secondary School of Nursing Diploma	57.50±7.78		
Income			
Unsatisfactory	62.02±9.72	1.815 (##)	0.072
Satisfactory	59.27±8.57		
Years of experience			
1-3 years	61.45±9.79	0.692 (#)	0.502
3-5 years	59.12±8.02		
More than 5 years	60.23±8.75		

** (#) One-Way ANOVA; (##): Independent t-test; (###) : Kruskal-Wallis test*

Table (7): Correlation Between Procrastination Behavior and Negative Thinking Scores (n=151).

	Overthinking score	
	r	***p*-value**
Procrastination behavior score	0.470	0.000

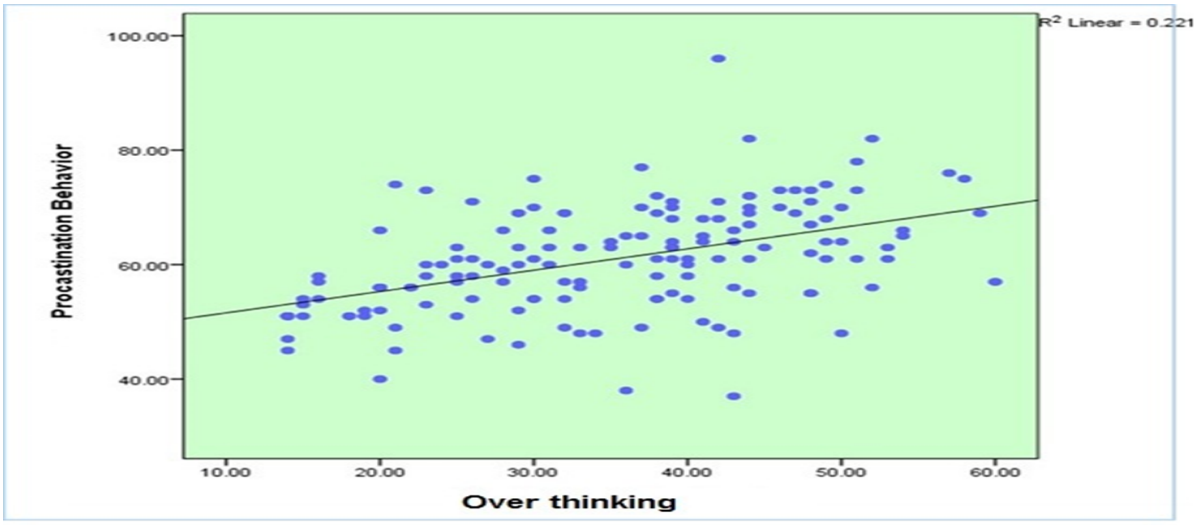

Figure (3): Correlation between overthinking scores and procrastination behavior scores (n=151).

6. Discussion

Overthinking and procrastination behavior are common challenges among nurses working in clinical settings, where high workload, critical decision-making, and emotional stress are part of daily practice. Excessive overthinking may lead nurses to repeatedly analyze tasks or clinical decisions, thereby increasing anxiety and reducing their confidence in professional judgment. This mental burden often contributes to procrastination, as nurses may delay documentation, decision-making, or task initiation due to fear of making mistakes. Procrastination can negatively affect time management, workflow efficiency, and quality of patient care. Over time, these behaviors may increase burnout, job fatigue, and stress among nurses *(Sirois & Biskas, 2024).* This study aimed to assess the correlation between overthinking and procrastination behavior among nurses in clinical settings.

Regarding the demographic profile of participants, the current study reveals that females comprised the majority. This result aligns with *El Sayed et al. (2024),* who conducted a study in Egypt to examine the relationships among smartphone addiction, procrastination behavior, and nursing productivity in the digital era, and reported that nearly half of their participants were females. From the researchers' perspective, although healthcare institutions employ both male and female nurses in clinical settings, a considerable number of male nurses seek employment abroad.

The current study reports that the average nurse's age is 22.4±0.4 years. This result aligns with *El-Sayed et al. (2025),* who conducted a study in Egypt to examine the mediating role of organizational silence in the association between workplace ostracism and nurses' procrastination behavior, and reported a mean age of 19.22±3.23 years among their participants. In contrast, this finding differs from that of *Goda et al. (2024),* who conducted a study in Egypt assessing critical care nurses' procrastination behavior, and found a high mean age of 26.3±2.3 years. From the investigators' points of view. Many healthcare institutions recruit young nurses immediately after completing their nursing education, and the sample has a relatively high educational attainment.

Regarding the core characteristics of overthinking, this study found that a considerable proportion of respondents reported experiencing same thoughts sometimes and more than a third of the studied nurses responded with often "thoughts intrude into my mind," This finding may be explained by nurses who work in high-stress clinical environments that require constant attention and responsibility. Frequent exposure to critical situations and patient suffering increases mental and emotional load. This result aligns with *Ehring et al. (2011),* who conducted a study in France to validate the preservative thinking Questionnaire (PTQ). Their results indicated that more than one-third of participants frequently experienced intrusive thoughts entering their minds.

The present study indicates that nearly one-third of participating nurses reported sometimes "think about multiple problems without resolving any of them." From the researchers' perspective, high job demands may exceed cognitive capacity, making it challenging to concentrate on a single issue at a time. This tendency toward overthinking can lead nurses to process several problems simultaneously without clear prioritization. This result is matched with the findings of *Monteregge et al. (2020),* who carried out a meta-analysis in the Netherlands examining the impact of various anxiety treatments on repetitive negative thinking, and reported that nearly one-third of participants sometimes experienced similar patterns of thinking without reaching solutions.

Regarding perceived unproductiveness, the current study found that nearly one-third of the nurses reported often experiencing repeated thoughts. This result contrasts with *Türkleş et al.'s findings (2018),* in a study conducted in France examining the perceptions, cognitive responses, and experiences of mental health nurses in caring for individuals exhibiting suicidal behaviors and suicide attempts, they observed that almost half of the participants reported similar

experiences. This is due to continuous exposure to stressful and emotionally demanding clinical situations, which increases mental intrusion. High responsibility for patient safety may trigger automatic worry-related thoughts.

Regarding the extent of mental capacity consumed, this study found that more than one third of the nurses almost always reported that their thoughts were not particularly helpful to them. This finding aligns with *Elsayed et al. (2023)*, who conducted an exploratory study in Egypt on psychological well-being, perceived risk, and coping mechanisms among healthcare workers during the COVID-19 pandemic. They reported that nearly a quarter of the studied samples often heard "thoughts not much help to me." From the investigators' perspective, overthinking may lead to repetitive, unproductive thoughts rather than practical solutions. High stress levels can distort thinking, reducing clarity and the effectiveness of thoughts.

Regarding the overall level of overthinking among nurses, the current study finds that fewer than one-quarter had low scores, less than half had moderate levels, and more than one-third had high levels. From the researchers' points of view, it might be related to inadequate nursing staff levels result in heavier workloads, long working hours—often 12-hour shifts, high amounts of paperwork and electronic documentation contribute to overthinking. This result is consistent with *Moghaddam et al. (2022),* who conducted a cross-sectional study in Iran investigating work-related rumination among critical care nurses and found that fewer than half of the nurses demonstrated moderate levels of overthinking, while less than one-quarter exhibited low levels. These findings are answered the first research question.

Regarding academic procrastination, the results revealed mixed tendencies, where more than one third of nurses reported sometimes delaying tasks, while others preferred planning ahead and early submission. From the researchers' points of view, This variation suggests differences in time management skills and workload which is consistent with the findings of *Ferrari & Díaz-Morales (2014),* who conducted a study in Spanish "Procrastination and Mental Health Coping A Brief Report Related to Students "and reported that procrastination behaviors differ based on individual personality traits and coping strategies, highlighted that individuals may procrastinate despite knowing the negative consequences, especially when tasks induce stress or anxiety. This result agrees with *Xue et al. (2024),* who conducted a study in China examining the work-related procrastination and smartphone dependency among clinical nurses, and observed that nearly half of the participants reported similar patterns of behavior. This finding might be because overthinking can consume time and mental energy, leaving little motivation to act. Fear of making mistakes or failing may delay the initiation of tasks or personal goals.

The present study indicates that more than one-third of the participating nurses reported sometimes planning in advance for tasks and events. This finding contrasts with that of *Attia et al. (2025),* who studied how workplace ostracism influences nurses' deviant behaviors through emotional exhaustion and defensive silence in Egypt and revealed that half of the studied samples sometimes preferred planning ahead for tasks and events. This finding is due to planning helps nurses manage heavy workloads and multiple responsibilities effectively. Anticipating tasks reduces anxiety related to unexpected clinical situations.

In terms of workplace procrastination, less than half of studied nurses reported exerting more effort under stress and delaying task completion until necessary. From the researchers' points of view some nurses may delay work tasks because of heavy workloads and burnout that leading to avoidance. This interpretation is supported by *Shang et al. (2023),* who conducted study in China, entitled "Positive delay? The influence of perceived stress on active procrastination" and suggested that some individuals perform effectively under time pressure and may perceive stress as a motivator rather than a barrier. This finding aligns with *Basirimoghadam et al. (2020b),* who conducted a study in Tehran, Iran, to develop and psychometrically assess a health-related procrastination scale for nurses and reported that 37.22% of participants often initiated tasks as soon as they were given them. This may be explained by the fact that clinical tasks are often time-sensitive and directly affect patient safety. Nurses are trained to respond promptly to physicians' orders and patient needs.

Regarding medical procrastination, this study found that less than one-quarter of nurses reported never postponing addressing their own health-related concerns. This finding agreed with *Johansson et al. (2023),* who conducted a study entitled "Associations between Procrastination and Subsequent Health Outcomes among University Students in Sweden" and found that procrastination associated with poorer future health outcomes, indicating that reduced procrastination, may reflect better health awareness and preventive behaviors.

This finding differs from the results of *Babaie et al. (2022),* who conducted a study in Iran examining procrastination among Iranian staff nurses and reported that 54.11% of participants indicated they had not delayed seeking treatment for their health issues. From investigators' perspectives, nurses have strong health knowledge and awareness of disease symptoms and risks. Professional experience increases appreciation of the importance of early diagnosis and treatment.

Regarding civic responsibility-related procrastination, the current study finds that more than half of studied nurses reported never experiencing severe consequences such as service termination. However, more than one third of studied nurses reported occasionally postponing chores and one third of them had delaying distressing tasks. These findings are consistent with *Sirois and Pychyl (2013),* who conducted a study on "Procrastination and the priority of short-term mood regulation: Consequences for future self " and founded that the procrastination is often linked to emotion regulation, particularly the avoidance of unpleasant or stressful tasks. This finding agreed with *Zhang et al. (2025b),* who conducted a study in China assessing the validity and reliability of the Chinese version of the nurses' health-related procrastination scale (NHRPS), and reported that 30.5% of

the study sample sometimes feels guilty when they delay doing tasks. This is due to the nursing culture's emphasis on responsibility, accountability, and commitment to duty. Delaying tasks may be perceived as compromising patient care or team efficiency.

Regarding the overall level of procrastination among nurses, the current study finds that more than three-quarters exhibited moderate levels, while fewer than one-quarter demonstrated high levels. From the researchers' points of view, most nurses maintain the performance of the tasks required of them despite the work pressure and the difficult environment surrounding them, which makes the general level of procrastination at a "moderate" level, even if some tasks are delayed. This finding aligns with *Xue et al. (2024),* who conducted a study in China examining the relationship between procrastination and smartphone addiction among clinical nurses and similarly reported that most nurses showed modest levels of procrastination, with a smaller proportion exhibiting moderate-to-high levels. These findings are answered the second research question.

Regarding overthinking and procrastination behavior scores, the present study shows that overthinking had a mean score of 34.80±11.74, ranging from 14.00 to 60.00, indicating a moderate average level with notable variability among nurses. This result is consistent with *Wang et al. (2025),* who conducted a network analysis exploring the relationships among procrastination, academic control, perceived stress, and achievement motivation in graduate nursing students in China. Their findings indicated that overthinking had a mean score of 40.16± 6.22, reflecting a moderate overall level with considerable variation among participants. From the investigators' perspective, nurses experienced moderate levels of work-related overthinking, less use of coping strategies, and lower levels of individual resilience.

Regarding the relationship between nurses' sociodemographic characteristics and their scores on the negative thinking scale, the findings indicate that gender and financial status are crucial in shaping levels of overthinking among nurses. This result agrees with *Atta et al. (2024),* who conducted a study in Egypt aimed to examine how systems thinking contributes to improving nursing process competency among early-career nurses experiencing transition shock. They found that gender and economic status are important determinants of overthinking among nurses. From the investigators' point of view, female nurses play different roles, including work and family responsibilities. Nurses experienced work overload and exposure to continuous stressful situations, leading to emotional burden and overthinking. These factors highlight the interplay between personal and socio-economic characteristics in shaping nurses' mental health.

Regarding the association between nurses' sociodemographic characteristics and their procrastination behavior scores, the findings indicate that no statistically significant associations were observed across the demographic groups. This result contrasts with the findings of *Ibrahim and Helaly (2022),* who conducted a study in Egypt investigating the relationships among procrastination, cyberloafing, and job conscientiousness among head nurses at Main Mansoura University Hospital. They found no statistically significant associations across any demographic groups, except age and educational level. This finding suggests that nurses' procrastination may be influenced more by work-related stress, individual personality traits, and psychological factors than by basic sociodemographic characteristics. Consequently, interventions to reduce procrastination should focus on behavioral strategies, time management, and stress-coping mechanisms rather than on demographic targeting.

Regarding the relationship between nurses' overthinking and procrastination scores, the results show a statistically significant positive correlation indicating that moderate levels of overthinking are linked to moderate levels of procrastination among nurses. This result is consistent with *Sirois and Biskas (2024),* who also reported a significant positive association between procrastination behavior and overthinking. From the investigators' perspective, the finding suggests that nurses' overthinking may exacerbate stress, worry, and self-criticism. Addressing overthinking could help reduce procrastination and improve mental well-being in clinical settings. Procrastination behavior consumes mental energy, reducing focus and confidence, which further increases avoidance behaviors. These findings are answered the third research question.

7. Conclusion

The results of the current study indicate a moderate level of overthinking and a moderate level of procrastination among nurses. Furthermore, a statistically significant positive relationship was identified between overthinking and procrastination behavior (p=0.000).

8. Recommendation

- Implementing counseling sessions for nurses to avoid overthinking and procrastination during clinical work.
- Social and psychological support through professional development programs to alleviate overthinking and procrastination during clinical practice.
- Developing an awareness program on coping mechanisms for managing stressful situations and dealing with continuous workload.
- Designing targeted interventions to reduce overthinking and enhance professional performance.

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