

EMPIRICAL RESEARCH QUANTITATIVE

Understanding Career Adapt Abilities, Career Stress, Work Stress, Career Regret, Job Satisfaction Among Nursing Professionals

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ABSTRACT

Aim: This study aims to conduct a comprehensive analysis of the interrelationships among career stress, work stress, career regret, job satisfaction and career adapt abilities within the nursing profession.

Design: The research involved a sample of 576 nurses from ten urban hospitals, distributed across five distinct cities in Turkiye, between December 2023 and January 2024. The study employed regression models to systematically test hypotheses, providing nuanced insights into the complex dynamics of the variables under investigation.

Methods: Regression models were utilized to test the hypotheses systematically, considering the moderating role of career adapt abilities. The study included a sample of 576 nurses from 10 urban hospitals in Turkey, distributed across five distinct cities. This approach allowed for a detailed examination of the intricate relationships between career stress, work stress, career regret, job satisfaction and career adapt abilities within the nursing profession.

Results: The findings underscore the delicate balance between the positive gains of job satisfaction and the challenges posed by career stress, work stress and career regret in the multifaceted landscape of nursing.

Conclusion: In nursing, the relationship between career stress, work stress, career regret and job satisfaction include progress, resilience and obstacles. Developing strategies requires a cooperative effort from health care organizations, nursing leaders and individual nurses.

Impact: The research provides valuable insights into the interplay of these factors and emphasizes the moderating role played by career adapt abilities. The implications of the study extend to healthcare organizations, nursing leaders and individual nurses. The research advocates for collaborative strategies aimed at enhancing job satisfaction, alleviating stressors and addressing career regret. The ultimate goal is to contribute to the retention of a resilient nursing workforce, emphasizing the importance of strategies that support the well-being and satisfaction of nurses in their careers.

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1 | Introduction

Globally, the impact of work-related stress on healthcare providers has been substantial (Tsegaw, Getachew, and

Tegegne 2022). Both private and public healthcare institutions are recognized as high-stress work environments, particularly for nurses, who face numerous job-related stressors. The demanding nature of nursing roles often exposes professionals

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to various stressors, including career and work stress. For instance, Önder, Aybas, and Önder (2014) identified, in their comprehensive literature review, key factors causing stress in nurses' work lives such as workload, insufficient staffing, time pressure, relationships with other healthcare workers, leadership and management style, weak locus of control, poor group solidarity, inadequate managerial support, coping with emotional needs of patients and families, poor patient diagnoses, incidents of death and lack of reward for shift work. Moreover, nurses who constantly work face-to-face with people experience negative effects on their physical, mental and social health due to stress.

According to numerous studies, high levels of stress in nurses lead to low levels of self-efficacy, self-doubt, low self-esteem, somatic complaints, sleep disorders and burnout (Foxall et al. 1990, 577). Additionally, it promotes organizational incompetency, high staff turnover, sickness, absenteeism, decreased quality of care, increased costs of healthcare and reduced job satisfaction (Tsegaw, Getachew, and Tegegne 2022). Thus, the shortage of registered nurses has become a serious global problem. Nevertheless, the exploration of stress stemming from one's chosen career has been relatively limited in the existing literature. Existing studies indicate that many nurses lack defined career goals or a plan for professional development, leading some to prematurely abandon their careers before reaching retirement eligibility. Specific studies highlight early career indicators that may escalate to burnout, ultimately having enduring effects on psychological well-being, including cognitive functions and sleep (Rudman et al. 2020).

This article explores and seeks for the complex mechanism of how career stress affects nurses' job satisfaction through career regret and work stress. The developed model also sheds light on the role of career adapt ability to mitigate the impact of their career stresses on work stress and career regret. In addition, the investigation of these important elements in a sample of performance-oriented nurses working under intense work stress reveals the originality and the strength of this study. Additionally, the study introduces a novel approach by incorporating the Career Construction Theory, particularly emphasizing the crucial concept of Career Adaptability, providing a theoretical foundation that allows for a deeper understanding of how nurses actively shape and adapt their careers in the dynamic healthcare environment. The inclusion of a developed model to assess the role of Career Adaptability in mitigating the impact of career stresses on work stress and career regret adds originality to the study, addressing a gap in the existing literature.

2 | Theoretical Framework

Career adapt ability was first researched by Super and Knasel (1981) and subsequently, many studies have been conducted on the subject. Career adapt ability is a crucial concept within the framework of the Career Construction Theory developed by Savickas in 2005. This theory posits that individuals construct their careers through a series of adaptations to ever-changing circumstances. In other words, this theory states that careers are not passively experienced but actively shaped by individuals as they attempt to successfully adapt to their environments.

Career Construction Theory defines Career adapt ability as 'the readiness to cope with the predictable tasks of preparing for and participating in the work role and with the unpredictable adjustments prompted by changes in work and working conditions' (Savickas 1997, 254). Therefore, Career adapt ability helps individuals expand and enhance their professional identities, leading to a more satisfying working life and career development.

As proposed by Savickas (2013), Career adapt ability comprises four dimensions: concern, control, curiosity and confidence. Examining the influence of these adaptabilities on reducing work stress and career regret among nurses involves understanding how they navigate and construct their careers in the dynamic healthcare environment.

Concern refers to an individual's interest in their work, especially its social and economic aspects (Savickas 2013). Career concern is the primary element of Career adapt ability since it is related to the individual's orientation and preparation towards his/her future career (İspir, Elibol, and Sönmez 2019). It suggests that individuals possess a forward-looking perspective that motivates them to plan for their careers. In the nursing profession, a high level of concern could manifest as a genuine commitment to patient care and well-being. By fostering concern, nurses may find more meaning and satisfaction in their work, mitigating stress that can arise from a lack of engagement or a sense of purpose. Additionally, a heightened concern can act as a buffer against career regret, as nurses may feel more invested in their chosen path since engaged nurses exhibit greater passion, higher work quality and increased efficiency. Furthermore, nurses who experience good work engagement tend to have higher career satisfaction and lower levels of work-related stress.

Control, the second dimension, revolves around an individual's perceived influence over their career trajectory (Savickas and Porfeli 2012). Control signifies that the individual's decisionmaking is intentional and that they assume responsibility for shaping their career (İspir, Elibol, and Sönmez 2019). Control is important because it affects career uncertainty (Daniels et al. 2011). Primary control, defined as the belief in one's ability to influence outcomes, significantly reduces both career anxiety and indecision, whereas secondary control, involving adaptation to uncontrollable circumstances, negatively influences career anxiety (Daniels et al. 2011). Nurses facing high levels of stress often grapple with feelings of powerlessness in demanding and unpredictable healthcare settings. Career adapt abilities empower nurses by instilling a sense of control over their professional lives (İspir, Elibol, and Sönmez 2019). By actively shaping their career paths, nurses may experience less stress and regret, as they can align their choices with personal preferences and values.

Curiosity, the third dimension is characterized by an eagerness to explore and learn from new experiences (Savickas and Porfeli 2012). It entails exploring various situations and career opportunities. Since it is related to intrinsic desire for knowledge and sensory experiences it motivates exploratory behaviour. In nursing, maintaining curiosity can be vital for adapting to evolving medical practices, technologies and patient needs. Nurses who embrace curiosity are more likely to seek out opportunities for professional development and remain open to learning new



things (Drewery, Sproule, and Pretti 2020), thereby, potentially reducing stress related to feeling outdated or stagnant in their careers. Continuous learning also fosters adaptability, allowing nurses to navigate changes in the healthcare landscape with resilience and confidence (İspir, Elibol, and Sönmez 2019).

The final dimension, confidence, pertains to an individual's self-belief in their ability to overcome challenges and succeed in their chosen career (Savickas and Porfeli 2012). Confidence reflects the ability to address challenges and undertake necessary actions to overcome obstacles (İspir, Elibol, and Sönmez 2019). Nurses facing stress or regret may benefit from developing and enhancing their confidence through training, mentorship, or recognition of their achievements. Confidence positively impacts future work self and proactive skill development, hence it enables nurses to confront and navigate stressors more effectively, as they approach challenges with a positive mindset and a belief in their capacity to adapt successfully.

The Career Construction Theory posits that individuals are not passive recipients of career influences; rather, they actively construct and adapt their careers (Savickas 2013). Applying this theory to nursing careers suggests that nurses can actively shape their professional experiences and outcomes by developing and leveraging their career adapt abilities. By enhancing concern, control, curiosity and confidence, nurses can reduce work-related stress and mitigate the likelihood of career regret (Chen and Zhang 2023). Nurses face unique challenges that contribute to work stress and career regret, like demanding workloads, high emotional strain and rapid advancements in healthcare technology. Career adapt abilities, as elucidated within the Career Construction Theory, offer distinct benefits to nurses across different career stages, including novice nurses, mid-life nurses and veteran nurses.

Novice nurses, typically in the early stages of their careers, face a steep learning curve and may encounter high levels of stress as they adapt to the demands of the healthcare profession. For these individuals, fostering concern is crucial. By developing a genuine interest in patient care and the intricacies of the profession, novice nurses can find greater meaning in their work. This sense of purpose not only reduces stress associated with the initial challenges of nursing but also sets a foundation for a fulfiling and sustained career. Additionally, novice nurses can benefit from building confidence in their abilities, because many novice nurses frequently struggle with professional confidence throughout their first year of work (Najafi and Nasiri 2023). The transition from academia to clinical practice can be daunting and a lack of confidence may contribute to stress and self-doubt. Most of them suffer from stress and anxiety due to insufficient experience (Najafi and Nasiri 2023). Career adapt abilities empower novice nurses with emotional support to proactively engage in professional development, seek mentorship and build competence. This, in turn, enhances their confidence, enabling them to navigate the early stages of their careers with greater resilience (Bakker et al. 2020).

Mid-career nurses, facing the complexities of balancing career and personal responsibilities, may find control and curiosity particularly advantageous. Mid-career nurses are crucial in clinical settings for maintaining competence, supervising

students and training recruits. Keeping these nurses on board is crucial for improving nursing quality by providing competent care, creating a stable environment, seeking daily challenges and prioritizing quality of care. The demands of mid-career often include considerations such as family, further education, or changes in specialization. Career adapt abilities provide midcareer nurses with the tools to take control of their career trajectories. By actively shaping their professional paths to align with personal values and priorities, mid-career nurses can reduce stress associated with conflicting demands and foster a sense of career satisfaction (Duchscher 2008). Curiosity is also essential for mid-career nurses, as it encourages them to explore new opportunities for growth and development (Litman 2008) and developing a lifelong learning mindset enhances career success (Drewery, Sproule, and Pretti 2020). Embracing a mindset of lifelong learning allows mid-life nurses to adapt to changes in healthcare practices and technology. This adaptability not only mitigates stress related to the fear of becoming obsolete but also opens up avenues for continued professional fulfilment.

For late-career nurses, who bring a wealth of experience to their roles, career adapt abilities can contribute to a sustainable and satisfying late-career phase. Concern remains important, as maintaining a genuine interest in patient care and the evolving dynamics of the profession can sustain motivation and reduce burnout. Additionally, veteran nurses can benefit from control over their career decisions, allowing them to transition into roles that align with their preferences and expertise, thereby reducing stress associated with stagnation (Benner, Tanner, and Chesla 2009). Confidence plays a pivotal role for veteran nurses, as it allows them to confront the challenges of leadership roles or mentoring responsibilities. Building confidence in their ability to adapt to changes in healthcare practices and mentor the next generation of nurses contributes to a sense of accomplishment and purpose, reducing the likelihood of career regret in the later stages of their profession.

2.1 | Career Stress, Work Stress and Career Adapt Ability

The modern work environment is often characterized by numerous stressors that can impact an individual's mental and physical health. Among these stressors, two distinct but interrelated concepts emerge: work stress and career stress (Salimzadeh, Hall, and Saroyan 2021). While they are frequently used interchangeably in casual conversation, it is crucial to delineate the differences between them in academic discourse (Salimzadeh, Hall, and Saroyan 2021). Stress refers to the reaction of a person or persons to the physical and psychological pressure caused by an action or a situation where pressure is felt. World Health Organization (WHO 2023) defined stress as 'a state of worry or mental tension caused by a difficult situation' and as 'a natural human response that prompts us to address challenges and threats in our lives'. In his seminal work, Selye (2013, 121), defined stimuli that affect the organism as stressors and the situation that occurs as a result of strain on the organism as stress. He also explained stress as "the state in which the body tries to adapt to any process, whether satisfactory or not" (Selye 2013). Career stress and work stress are multifaceted phenomena that significantly influence the experiences of nursing professionals.



Career stress is a frequent problem that affects individuals across different industries and professions. Roberti (2004) stated that a significant percentage of the global workforce reports experiencing high levels of stress related to their careers. The impact of career stress goes beyond the workplace, affecting physical and mental health, relationships and overall quality of life. Career stress encompasses the challenges and pressures individuals face throughout their professional journey. For nurses, career stress may arise from factors such as workload, concerns about career progression and the rapidly evolving landscape of healthcare.

On the other hand, work stress refers to the physical, emotional and mental tension that individuals experience due to their work-related responsibilities and environments. Work-related stress is caused by conditions in the workplace and negatively affects personal performance and overall health (Wu et al. 2021). According to the WHO (2023) work stress occurs when there is a mismatch between the demands of the job and the resources (including skills, support and autonomy) available to meet these demands. Work stress refers to stressors inherent in the workplace environment. In nursing, this includes aspects like long working hours, complex patient care scenarios and the emotional toll of dealing with illness and suffering. The combination of excessive workload and tight deadlines significantly contributes to work stress. Employees faced with strenuous tasks may have difficulty maintaining a healthy work-life balance, which can lead to burnout and decreased job satisfaction (Bakker and Demerouti 2017).

The profession of nursing stands as the cornerstone of healthcare, embodying compassion, expertise and unwavering commitment to the well-being of the patient (Dalvandi et al. 2019). Nursing responsibilities cover a wide range of tasks, from direct patient care to advocating for health equity. However, along with the noble responsibilities come the important challenges that nurses face. Nurses have the responsibility and obligation to provide comprehensive care, manage diverse patient needs and adapt to the ever-changing healthcare environment. These responsibilities placed on nurses as a matter of profession bring unique challenges by contributing to the stress factors nurses encounter in their daily professional lives (Babapour et al. 2022). Nurses often experience frustration and helplessness due to several organizational constraints and systemic issues that hinder their ability to provide the quality care they aspire to deliver. These feelings are exacerbated by (1) staff shortages and high workload, (2) inadequate support and resources, (3) organizational and structural constraints and (4) high patient turnover (Maben, Latter, and Clark 2006).

Within the context of the Career Construction Theory, which underscores the active role individuals play in shaping their careers, the relationship between career and work stress takes on several nuanced interpretations. The theory's holistic perspective highlights the interconnectedness of personal and work life, suggesting that stress arising from career-related factors, such as uncertainty or dissatisfaction, can permeate into the workplace (Thomas, Bantz, and McIntosh 2019). Career stress refers to the stress caused by occupational challenges. These include elements such as occupational ambiguity, lack of information, job pressure and external conflicts

(Zhang, Yu, and Liu 2022). Emphasizing adaptability and coping mechanisms, this theory suggests that individuals experiencing career stress may employ strategies that impact their work environment. Considering multiple life roles, the theory suggests that stress in one domain, such as the career, may disrupt the overall balance and satisfaction experienced in the workplace since individuals' interactions with their surroundings set off a chain reaction of physiological and psychological responses, including tension and anxiety (Zhang, Yu, and Liu 2022). Therefore, stress in one domain, such as the career, may disrupt the overall balance and satisfaction experienced in the workplace and adds up to work stress.

Work stress encompasses the negative emotional experiences that nurses may face, leading to excessive physical and mental fatigue, nervous tension, frustration, or distress. This can be caused by factors such as long working hours, heavy workloads, psychological pressures and other similar reasons (Zhao et al. 2022). Nurses' intention to stay or leave is influenced by factors such as personal characteristics, educational background, professional development, shift work, work-life balance, family commitments, organizational vision, work atmosphere, work stress, career opportunities and quality of work environment (Chen et al. 2021). Chen et al. (2021) revealed in their study that nurses, especially those new to the profession, are feeling career stress and had increasing levels of work stress during and after COVID-19.

Furthermore, as it is emphasized by the Career Construction Theory, the frustration or lack of fulfilment in achieving career objectives and meaning- may contribute to heightened stress within the work context (Savickas 2013). In essence, the proposition underscores the dynamic and interconnected nature of career development, illustrating how stress in the career domain can reverberate into an individual's work experiences, aligning with the overarching principles of the Career Construction Theory. Therefore, the following hypothesis was put forward;

Hypothesis 1. *Career stress is positively related to work stress.*

In the ever-evolving environment of the contemporary workplace, the concept of career compatibility has gained prominence as a key factor in navigating dynamic career paths. Perceived compatibility leads to an increased sense of belonging and motivation in pursuing a career (Rosenthal et al. 2013). In addition to compatibility, adaptability is also praised for its positive effects on professional development. Career adapt ability is defined as a psychosocial structure that shows the individual's ability to fulfil the tasks assigned to him, to show the expected development, to be ready for the difficulties encountered during career transitions and new tasks and to cope with these difficulties (Doganülkü and Kirdök 2021; Savickas and Porfeli 2012). Individuals with high career adaptability may find themselves faced with a multitude of options and opportunities. Prior studies have defined career adapt ability as a unified concept and have demonstrated that individuals with higher career adapt ability scores tend to experience more positive emotions and report higher levels of job satisfaction (Rasheed et al. 2020) with a reduced amount of career and job-related stress (Maggiori et al. 2013).



Stress coping is defined as 'the ability to adjust cognitive, attitudinal, emotional and behavioural processes to meet the demands of the environment' (Stoltz et al. 2013, 195) and career adapt abilities, as outlined in the theory, encompass one's capacity for dealing with career-related changes, challenges and uncertainties. In that sense, Doganülkü and Kirdök (2021) concluded that career adaptability negatively impacts burnout.

In other words, individuals with higher levels of career adapt ability are likely to navigate and cope with stressors more effectively, reducing the negative impact of such stress on their overall career experiences. This interpretation aligns with the theory's focus on adapt ability as a key factor in constructing a successful and fulfiling career, suggesting that individuals with well-developed adaptability skills may be better equipped to manage and minimize career-related stressors (Rasheed et al. 2020). Therefore, the following hypotheses were put forward:

Hypothesis 2. Career adapt abilities are negatively related to career stress.

Hypothesis 2a. Career adapt abilities decreases negative impact of career stress on work stress.

Hypothesis 2b. Career adapt abilities decreases negative impact of career stress on career regret.

Hypothesis 2c. Career adapt abilities decreases negative impact of career stress on job satisfaction.

2.2 | Career Regret

Nursing is an important and admirable profession that plays a vital role in healthcare systems globally. However, the nursing field faces challenges related to career dissatisfaction and regret (van der Cingel and Brouwer 2021). Regret is a distressing emotion that arises when contemplating or realizing that one's circumstances might have been more favourable if different choices had been made. Career regret arises when individuals evaluate their current career decisions against potential alternative ones. This negative emotional state is experienced by individuals who are dissatisfied with their chosen profession and believe that it does not align with their personal suitability or aspirations (Bilgiz-Öztürk and Karabacak-Çelik 2023). Career regret is a negative emotion and it impacts work-related negative outcomes. It leads to decreases in job satisfaction (Köse 2019), while positively affecting the inclination to leave employment and turnover intention (Bilgiz-Öztürk and Karabacak-Çelik 2023) and burnout (Doganülkü and Kirdök 2021).

Individuals experience career regret as a result of several factors such as lack of information regarding oneself and the occupation, not receiving enough education and/or having uncertainties (Bilgiz-Öztürk and Karabacak-Çelik 2023). In the case of nurses, educational decisions, such as choosing a nursing program or specialty, may contribute to career regret if they are not aligned with personal interests or career goals. Some nurses may experience regret regarding job transitions or changes in employment environments. Moving from one healthcare facility to another or switching between clinical and administrative

roles can trigger feelings of regret (Brown et al. 2013). Missed opportunities for professional development, such as not pursuing advanced certifications or specialty training may be another source of career regret among nurses (Jankelová, Joniaková, and Skorková 2021). The research concluded that the field of nursing is frequently seen as offering few chances for career advancement and advanced degrees, facing significant gender stereotypes and experiencing high levels of work-related stress (Liaw et al. 2017).

Quick et al. (1997) revealed that work stress and career stress are multifaceted phenomena that include the pressures, uncertainties and difficulties inherent in professional life and can have positive and negative consequences. While work stress typically relates to the demands and pressures associated with daily job responsibilities, career stress involves broader concerns about one's overall occupational trajectory, including issues such as job security, career development and work-life balance (Quick et al. 1997). Educational decisions, such as choosing a nursing program or specialty, may contribute to career regret if they are not aligned with personal interests or career goals. Some nurses may experience regret regarding job transitions or changes in employment environments. Moving from one healthcare facility to another or switching between clinical and administrative roles can trigger feelings of regret (Brown et al. 2013). Missed opportunities for professional development, such as not pursuing advanced certifications or specialty training, may be another source of career regret among nurses (Jankelová, Joniaková, and Skorková 2021).

Career stress, stemming from factors such as job dissatisfaction, uncertainty, or a misalignment between personal values and work, can significantly impact an individual's overall career experience. Within the theoretical framework, prolonged or intense career stress is posited to increase the likelihood of experiencing career regret (Budjanovcanin and Woodrow 2022). The stressors encountered in the career domain may prompt individuals to reevaluate their choices, goals and values, potentially leading to regret if their perceived career trajectory diverges from initial aspirations (Zhang, Yu, and Liu 2022). This interpretation aligns with the core tenets of the Career Construction Theory, emphasizing the dynamic and interconnected nature of career development and suggesting that stressors within the career domain can profoundly affect an individual's satisfaction and sense of fulfilment in their chosen profession (Savickas and Porfeli 2012). However, the specifics of this relationship vary widely among individuals and the theory underscores the importance of adaptability and proactive career construction in navigating and mitigating potential sources of regret. Similarly, work stress, arising from factors such as high job demands, low job satisfaction, or challenging work environments, can exert influence on an individual's overall career trajectory (Shan et al. 2022). Within the theoretical framework, persistent or intense work-related stress is associated with an increased likelihood of experiencing career regret. The theory highlights the interdependence of personal and work life, indicating that stressors in the workplace can impact broader career experiences. Individuals confronting significant work stress may reassess their career choices, goals and values, potentially leading to regret if a misalignment is perceived between their current work situation and initial career aspirations (Yang et al. 2022). This



interpretation aligns with the Career Construction Theory's emphasis on the dynamic and interconnected nature of career development, suggesting that stressors in the work domain can influence an individual's overall satisfaction and sense of fulfilment in their chosen profession. However, the specific nature of this relationship varies among individuals and the theory underscores the importance of adaptability and proactive career construction to navigate and mitigate potential sources of regret. Therefore, the following hypotheses have been put forward;

Hypothesis 3. Career stress is positively related to career regret.

Hypothesis 4. Work stress is positively related to career regret.

Hypothesis 5. Work stress has a mediating role between career stress and career regret.

2.3 | Job Satisfaction

Job satisfaction is defined as 'a pleasurable or positive emotional state resulting from the appraisal of one's job or job experiences' (Dodanwala, Santoso, and Yukongdi 2023). It positively affects job performance and organizational commitment, while decreasing employee turnover (Dodanwala, Santoso, and Yukongdi 2023). Nurses' job satisfaction must be a priority for healthcare organizations and their stakeholders, as nurses constitute the largest professional group within healthcare systems. Enhancing job satisfaction among nurses is crucial for addressing challenges related to achieving and maintaining quality standards, ensuring patient satisfaction and promoting staff retention.

Any work-related stress directly decreases employee satisfaction (Dodanwala, Santoso, and Yukongdi 2023). In other words, the insufficient match between employees' talents and the work environment, along with unreasonable demands leads to dissatisfaction and turnover in most cases. The healthcare sector, notably within nursing, is recognized for its significant stress factors and the inherent complexities affecting work-life equilibrium (Nazir et al. 2022). Heightened occupational stress has been associated with work-life imbalance, diminished care quality and elevated rates of nurse attrition (Varma, Kelling, and Goswami 2016). Xie et al. (2021) found that low levels of stress lead to higher job satisfaction.

Career stress is related to occupational challenges and career indecision (Zhang, Yu, and Liu 2022). Generally, nursing students have a specific career direction when they enter college. However, because many choose nursing for its quick employment opportunities, some struggle to adapt to their major and make informed career decisions. Those who pursue nursing primarily due to employment prospects or influence from parents and peers often report greater indecision and career stress (Jung 2020). Because career stress fosters feelings of inadequacy and indecision, it has the potential to impair one's emotional state regarding job experience and thus job satisfaction.

Nevertheless, the association between stress and job satisfaction is intricate and influenced by diverse mediating and moderating variables (Lu, Zhao, and While 2019). One potential

mediating factor in this relationship is career regret (Nazir et al. 2022). Nurses encountering significant career stress may concurrently develop sentiments of career regret, potentially leading to adverse effects on their overall job satisfaction (Lu, Zhao, and While 2019). In contrast, nurses who exhibit minimal career regret may demonstrate enhanced resilience in managing professional stresses, thereby sustaining heightened levels of job satisfaction (Varma, Kelling, and Goswami 2016). Comprehending the mediating influence of career regret in the correlation between career stress and job satisfaction among nurses is pivotal for formulating efficacious strategies to mitigate the nursing shortage and enhance patient care quality (Lu, Zhao, and While 2019).

In our study, we investigated that work stress has negative consequences on job satisfaction and, as a result, career regret plays a mediating role on career stress and job satisfaction. In their study, Prasetya, Khairunnisa, and Aziz (2021) emphasized that work stress increases the intention to leave the job, reduces job satisfaction and job performance. Therefore, the following hypotheses have been put forward;

Hypothesis 6. Career stress is negatively related to job satisfaction.

Hypothesis 7. Career regret has a mediating role in career stress and job satisfaction.

3 | Methods

3.1 | Sample and Descriptives

According to the Health Statistics Yearbook (2022), the total number of nurses employed in Türkiye is 243.565. The study employed a mix of 'intensity sampling' and 'criterion sampling' approaches to recruit participants from 10 urban hospitals across five distinct cities. By focusing on areas with the highest density of nursing professionals, we target "information-rich" cases that intensely manifest the phenomenon of interest (in this case, areas with > 419 nurses and midwives per 100,000 population). All registered nurses working in these hospitals were eligible to participate, with no exclusion criteria applied. A total of 1200 questionnaires were distributed and 584 were returned, yielding a response rate of 48.67%. The data underwent a rigorous cleaning process, during which eight questionnaires with more than 20% missing data were excluded. Consequently, the final analysis was conducted on a sample size of 576.

Given this sample size, the calculated margin of error at a 95% confidence level is approximately $\pm 3.099\%$. This implies that the true population parameter lies within this range 95% of the time, assuming the sample is representative of the broader nursing population in urban hospitals.

As for the detailed breakdown of the cohort distribution, the age group of 41–49 years represents the largest cohort, accounting for approximately 33.22% of the total sample. This is followed by the 26–32 years and 33–40 years cohorts, which constitute 21.12% and 20.95% of the sample, respectively. The 18–25 years cohort makes up 12.78% of the sample, while the 50–59 years cohort



forms the smallest group, comprising 11.93% of the total sample. Additionally, females constitute the majority, representing approximately 83.48% of the total. Males, on the other hand, make up a smaller proportion, accounting for approximately 16.52% of the sample. Lastly, the majority of the nurses are married, comprising approximately 68.99% of the total. Single individuals represent a smaller proportion, accounting for approximately 29.30% of the sample. Divorced individuals form the smallest group, constituting approximately 1.70% of the sample.

3.2 | Measurement Tools

Each scale, except for demographics and Career Adapt Abilities Scale, is formatted using 5-point Likert scale starting from 'Totally Disagree' to 'Totally Agree'. The reliability coefficients are exhibited in Table 1.

3.2.1 | Nurse Career Stress

The adaptation of the Nursing Career Stress Scale, developed by Yang (2017), was conducted by the authors with a sample of

TABLE 1 | The nurses' branches

TABLE 1	The nurses' bran	ches.
n	%	Ward
101	17.53	Surgical nurse
74	12.85	Paediatric
69	11.98	Emergency nurse
69	11.98	Intensive care nurse
45	7.81	Clinical nurse
37	6.42	Medical ward nurse
24	4.17	Operating room nurse
20	3.47	Neurology nurse
19	3.30	Midwife
18	3.13	Infection nurse
17	2.95	Maternity (or obstetrics) nurse
11	1.91	Primary health care nurse
11	1.91	Radiology nurse
9	1.56	Dialysis nurse
9	1.56	Hemotology nurse
9	1.56	Orthopaedic nurse
9	1.56	Palliative nurse
8	1.39	Pulmonary diseases nurse
6	1.04	Delivery room nurse
4	0.69	Blood collection nurse
3	0.52	ENT nurse
2	0.35	Cardiology nurse
2	0.35	Psychiatric nurse

158 individuals. The scale comprises 10 items as the original. We asked nurses to evaluate each statement regarding if it creates stress. An example item from the scale is: 'Limited range of life space.' Confirmatory factor analysis yielded satisfactory fit indices for a four-factor structure (χ^2 [29] = 90.7, p < 0.001; χ^2 / df = 3.128; TLI = 0.951; CFI = 0.68; RMSEA = 0.0602). Refer to Table 1 for the reliability coefficients.

3.2.2 | Work Stress

The Work stress Scale, developed by House and Rizzo (1972) for the purpose of measuring work stress. The scale comprises seven items as the original. An example item from the scale is: 'I work under a great deal of tensions.' Confirmatory factor analysis yielded satisfactory fit indices for a one-factor structure (χ^2 [1]=1.92, p>0.166; χ^2 /df=1.920; TLI=0.994; CFI=0.999; RMSEA=0.0396).

3.2.3 | Career Regret

The adaptation of Career Regret Scale was developed by Brehaut et al. (2003). The scale comprises five items as the original. An example item from the scale is: 'I regret the choice I made.' Confirmatory factor analysis yielded satisfactory fit indices for a two-factor structure ($\chi^2[8] = 22.2$, p < 0.001; $\chi^2/df = 2.775$; TLI=0.963; CFI=0.985; RMSEA=0.0880).

3.2.4 | Career Adapt Abilities

The Career Adapt-Abilities Scale (CAAS), developed by Savickas and Porfeli (2012) was adapted into Turkish by the authors. The scale comprises 20 items as the original. We asked nurses: 'Please read the statements below and evaluate how appropriate these strengths are for you'. They had to choose from 'It's not my strength at all' to 'It's totally my strength'. An example item from the scale is: 'Seeing how your choices today shape your future.' Confirmatory factor analysis yielded satisfactory fit indices for a three-factor structure (χ^2 [165]=812, p<0.001; χ^2 /df=4.921; TLI=0.918; CFI=0.929; RMSEA=0.0817).

3.2.5 | Job Satisfaction

MOAQ Job Satisfaction scale developed by Cammann et al. (1983) was adapted into Turkish by the authors. The scale comprises three items as the original. An example item from the scale is: 'I regret the choice I made.' Confirmatory factor analysis yielded satisfactory fit indices for a two-factor structure (χ^2 [1]=1.82, p < 0.001; χ^2 /df=1.555; TLI=1.00; CFI=1.00; RMSEA=0.000).

3.3 | Ethical Considerations

This research is approved by the Ethical Committee of Piri Reis University, with the approval number PRU-2023/012, on 01.12.2023. Respondents were informed of the research's goal



and the data were collected while maintaining each respondent's anonymity.

3.4 | Findings

The correlation analysis in Table 2 revealed several significant relationships between the variables. Job Satisfaction (M=3.58, SD=0.95) was found to be negatively correlated with Nurse Career Stress (r=-0.483, p<0.01), Work Stress (r=-0.423, p<0.01) and Career Regret (r=-0.555, p<0.01), but positively correlated with Career Adapt Abilities (r=0.386, p<0.01). Nurse Career Stress (M=2.29, SD=0.67) was positively correlated with Work Stress (r=0.632, p<0.01) and Career Regret (r=0.505, p<0.01), but negatively correlated with Career Adopt Abilities (r=-0.395, p<0.01). Work Stress (M=3.51, SD=1.12) was positively correlated with Career Regret (r=0.463, p<0.01), but negatively correlated with Career Adopt Abilities (r=-0.268, p<0.01). Career Adopt Abilities (M=4.01, SD=0.65) was negatively correlated with Career Regret (r=-0.363, p<0.01).

These results suggest that higher job satisfaction is associated with lower levels of career stress, work stress and career regret and higher levels of career adaptability. Conversely, higher levels of career and work stress are associated with higher levels of career regret and lower levels of job satisfaction and career adaptability.

3.5 | Results of Hypotheses Tests

We run Model 8 of PROCESS SPSS Version 4.2 for linear regression analyses. Specifically, it involves a moderated mediation model. The results are given for each model below.

The results of the hypotheses tests are given in Table 3 in details. The first analysis (Model 1, career regret) was statistically significant, F(3,286) = 76.84, p < 0.001, accounting for approximately 29% of the variance in Career Regret, $R^2 = 0.29$, with an adjusted $R^2 = 0.283$. Career stress of nurses has a significant positive effect on career regret (b = 0.8873, p = 0.0206). Career adapt abilities have a non-significant negative effect on career regret (b = -0.2289, p = 0.3117). The interaction between career stress and career adapt abilities is also significant (p = 0.0385).

The second analysis (Model 2, work stress) indicates that the model explains 41% of the variance in work stress, R^2 =0.41, with an adjusted R^2 =0.402. Career stress of nurses has a

non-significant positive effect on work stress (b=0.3379, p=0.3363). Career adapt abilities have a significant negative effect on work stress (b=-0.4401, p=0.0345). The interaction between Nurse Career Stress and Career Adaptability Abilities also significantly predicted Work Stress, b=-0.17, t(286)=-2.03, p=0.0303. This means that the negative effect of career adapt abilities on work stress becomes stronger as career stress increases.

The third linear regression model (Model 3, job satisfaction) assessed the effects of Nurse Career Stress, Career Regret, Work Stress, Career Adaptability Abilities and their interaction on Job Satisfaction. This model was also significant, F(5,286)=72.76, p<0.001, explaining 39% of the variance in Job Satisfaction, $R^2=0.39$, with an adjusted $R^2=0.385$. Career regret has a significant negative effect on job satisfaction (b=-0.3092, p=0.0000). Work stress has a significant negative effect on job satisfaction (b=-0.0882, p=0.0169). Career adapt abilities have a non-significant positive effect on job satisfaction (b=0.2661, p=0.1381). However, the interaction between career stress and career adapt abilities is significant (p=0.0320).

3.5.1 | Moderation Effects

To test if the moderations in Hypotheses 2a, 2b and 2c exist, we evaluated the moderating effect of Career Adaptability Abilities on the relationship between Career Stress and the dependent variables (Work Stress, Career Regret and Job Satisfaction). Hypothesis 2a suggests that Career Adaptability Abilities would buffer the negative effect of Career Stress on Work Stress. The results from Model 2 (Work Stress) show that the interaction between Nurse Career Stress and Career Adaptability Abilities was statistically significant, b = -0.1711, p = 0.0303, b = -0.1711, p = 0.0303, b = -0.1711, p = 0.0303. This suggests that higher Career Adaptability Abilities decrease the negative impact of Career Stress on Work Stress. Specifically, individuals with higher Career Adaptability Abilities experience a weaker relationship between Career Stress and Work Stress, supporting Hypothesis 2a.

Hypothesis 2b proposes that Career Adaptability Abilities would mitigate the negative effect of Career Stress on Career Regret. In Model 1 (Career Regret), the interaction between Nurse Career Stress and Career Adaptability Abilities was also significant, b=-0.0432, p=0.0385, b=-0.0432, p=0.0385, indicating that Career Adaptability Abilities buffer the effect of Career Stress on Career Regret. Specifically,

TABLE 2 | Correlations, means and standard deviations.

	M	SD	1	2	3	4	5
1—Job Satisfaction	3.58	0.95	0.86	_	_	_	
2—Nurse Career Stress	2.29	0.67	-0.483**	0.84	_	_	_
3—Work Stress	3.51	1.12	-0.423**	0.632**	0.84	_	_
4—Career Adopt Abilities	4.01	0.65	0.386**	0.395**	-0.268**	0.95	_
5—Career Regret	2.85	1.11	-0.555**	0.505**	0.463**	-0.363**	0.85

 $^{**} Correlation is significant at the 0.01 \ level (2-tailed). \ Reliabilities are presented diagonally in bold format.$



TABLE 3 | Results of hypothesis tests.

	b	SE	t	p		
		Model 1 (ca	LLCI	ULCI		
Constant	21.249	0.967	2197	0.0284*	0.2256	40.242
Nurse career stress	0.8873	0.3822	2322	0.0206*	0.1367	1638
Career adapt abilities	-0.2289	0.2261	-1013	0.3117	-0.673	0.2151
Nurse career stress×career adapt abilities	-0.0432	0.092	-1.47	0.0385*	-0.0239	-0.1374
R^2	0.29					
Adj. R ²	0.283					
R ² change	0.0003					
F-statistic	76.8406	0.8852		0.000***		
		Model 2 (w	ork stress)			
Constant	29.577	0.8884	3329	0.0009	12.127	47.026
Nurse career stress	0.3379	0.3511	0.962	0.3363	-0.3518	10.275
Career adapt abilities	-0.4401	0.2077	-2119	0.0345*	-0.8481	-0.0322
Nurse career stress×career adapt abilities	-0.1711	0.0845	-2025	0.0303*	-0.0052	-0.3371
R^2	0.41					
Adj. R ²	0.402					
R ² change	0.0043					
F-statistic	129.5869	0.7472		0.000***		
	N	Aodel 3 (job	satisfaction	n)		
Constant	42.478	0.7723	5500	0.000***	2731	57.647
Nurse career stress	-0.1785	0.3032	-0.589	0.5564	-0.774	0.4171
Career regret	-0.3092	0.0338	-9146	0.000***	-0.3756	-0.2428
Work stress	-0.0882	0.0368	-2396	0.0169**	-0.1604	-0.0159
Career adapt abilities	0.2661	0.1792	1485	0.1381	-0.0859	0.6182
Nurse career stress×career adapt abilities	-0.0155	0.0729	-1212	0.032*	-0.1587	-0.1278
R^2	0.39					
Adj. R ²	0.385					
R ² change	0.000					
F-statistic	72.7556	0.5517		0.000***		

p < 0.05.

individuals with higher Career Adaptability Abilities experience a less pronounced increase in Career Regret as Career Stress increases, providing support for Hypothesis 2b.

Hypothesis 2c assumes that Career Adaptability Abilities would reduce the negative effect of Career Stress on Job Satisfaction. The interaction term in Model 3 (Job Satisfaction) was significant, b=-0.0155, p=0.032, b=-0.0155, p=0.032, indicating that Career Adaptability Abilities moderate the relationship between Nurse Career Stress and Job Satisfaction. Higher levels of Career Adaptability Abilities

lessen the negative impact of Career Stress on Job Satisfaction, aligning with the prediction made in Hypothesis 2c. Age, gender and marital status have no impact in the models.

Lastly, we run an additional test to check if career stress, career regret and work stress vary according to age cohorts of the sample. We employed one-way ANOVA test after creating three groups 1=18-32; 2=33-49; and 3=>50 representing novice, mid- and late-career nurses in our sample. The analysis results indicate no differences for career regret and work stress, but for career stress, we found a significant



^{***}p < 0.01.
****p < 0.001 (two-tailed).

difference between groups 18-32 (M=3.12, SD=0.43) and 33-49 (M=2.69, SD=0.60) (p<0.031), but no significant differences between 18 and 32 (M=3.12, SD=0.43) and >50 (M=3.13, SD=0.53) and 33-49 (M=2.69, SD=0.60) and >50 (M=3.13, SD=0.53).

In sum, Hypotheses 1, 3, 4, 5, 6 and 7 are supported based on the analyses provided. Hypothesis 2 is not supported, whereas Hypotheses 2a, 2b and 2c are supported.

4 | Discussion

The regression analyses provide several key insights into the relationships between career stress, work stress, career regret, job satisfaction and career adapt abilities. In the first model, career stress significantly predicts career regret, suggesting that higher levels of stress experienced by nurses in their careers can lead to increased feelings of regret. Career regret is important because it affects the career path in a negative way by increasing dissatisfaction (Köse 2019), burnout (Doganülkü and Kirdök 2021) and intention to leave the work (Bilgiz-Öztürk and Karabacak-Çelik 2023). This study put forward that career stress is one of the antecedents of career regret. On that sense, one way to reduce career stress and develop a satisfied career path is related to decreasing career stress. Regarding career stress, Jung (2020) classified career decision types into two dimensions-decision and comfort and concluded that undecided-uncomfortable type had the highest career stress as well as lowest career identity as compared to decided-comfortable type. Therefore, we conclude that undecided-uncomfortable types are more likely to develop career regret. This may be prevented via career-related courses and mentorship programs (Jung 2020).

Furthermore, interestingly we found that while career adapt abilities do not significantly predict career regret, the interaction between career stress and career adapt abilities is significant. This suggests that the relationship between career stress and career regret may be moderated by career adapt abilities. Career adapt ability is related to being ready to cope with the predictable and unpredictable challenges in the work environment (İspir, Elibol, and Sönmez 2019). It is composed of concern, curiosity, confidence and control (Savickas 2013) therefore, it is likely to moderate the relationship between career stress and regret by enabling individuals to proactively manage their career development, anticipate potential challenges and adapt to changes, which can mitigate the negative effects of stress and reduce feelings of regret.

Moreover, the second model reveals that career adapt abilities significantly predict work stress, with higher adapt abilities associated with lower work stress. This confirms the previous literature on stress (e.g., Daniels et al. 2011; Dodanwala, Santoso, and Yukongdi 2023). The interaction between career stress and career adapt abilities also significantly predicts work stress, indicating that the negative effect of career adapt abilities on work stress intensifies as career stress increases.

In addition to that, the third model explains approximately 39% of the variance in job satisfaction. Both career regret and work

stress significantly predict job satisfaction, with higher levels of regret and stress associated with lower job satisfaction. The interaction between career stress and career adapt abilities is also significant, suggesting a moderating effect. The indirect effects analysis further underscores the complex interplay between these variables. Both career regret and work stress mediate the relationship between career stress and job satisfaction and these indirect effects are moderated by career adapt abilities. Specifically, the negative relationship between career stress and job satisfaction is stronger for individuals with lower career adapt abilities. This finding extends the previous literature on job satisfaction (e.g., Dodanwala, Santoso, and Yukongdi 2023; Nazir et al. 2022; Varma, Kelling, and Goswami 2016).

This study concludes that a delicate web of connections and relationships between the gains of job satisfaction and the challenges of career stress, work stress and career regret characterizes the multifaceted landscape of nursing. An escalation in stress correlated with a rise in negative career-related thoughts, which in turn was linked to decreased decision-making confidence and satisfaction with career choices. As nurses navigate the challenging terrains of patient care, leadership roles and continuing professional development, the interplay of these factors becomes an important determinant of their overall well-being and the quality of patient care they provide (van der Cingel and Brouwer 2021; Jung 2020; Maben, Latter, and Clark 2006). By recognizing the complex interconnection between these elements, healthcare organizations, nursing leaders and individual nurses can collaboratively shape strategies to increase job satisfaction, alleviate stressors and mitigate the impact of career regret.

The intertwined nature of career stress and work stress paves the way for a dynamic interaction that can increase occupational resilience or contribute to burnout (Doganülkü and Kirdök 2021). The demands of the nursing profession, including high-risk patient care and leadership responsibilities, highlight the importance of addressing these stressors to maintain a healthy workforce and ensure optimal patient outcomes (Dall'Ora et al. 2015). This understanding forms the basis for developing targeted interventions that recognize the unique challenges nurses face at various stages of their careers (van der Cingel and Brouwer 2021; Najafi and Nasiri 2023). Simultaneously, career regret emerges as a subtle element, adding another layer to the nursing narrative. Regrets about educational choices, job transitions, or missed professional opportunities can influence job satisfaction and contribute to the complex interplay of emotions experienced by nurses (Brown et al. 2013). Addressing these regrets requires a reflective approach that encourages nurses to evaluate their past choices and consider ways to grow and improve (Jung 2020). The nursing journey is a collective effort that requires collaboration between nurses, leaders and healthcare organizations. Organizations must recognize and understand the interconnected nature of career stress, work stress, career regret and job satisfaction. Implementing experiential practices that prioritize nurse well-being contributes not only to individual job satisfaction but also to the retention of a skilled and resilient nursing workforce (Cimiotti et al. 2012).

The significant difference between age groups 18-32 (M=3.12, SD=0.43) and 33-49 (M=2.69, SD=0.60) (p<0.031) points out an early career concern for novice nurses. Some studies reported



similar findings such as Rudman et al. (2020). This might support another argument by Liu et al. (2015) that states and highlights the reports from previous studies, which put forth nurses who do not have career goals or a plan for their professional development and eventually abandon their careers before they become eligible for retirement.

5 | Implications for Practice

The study's findings present several practical implications for healthcare organizations aiming to enhance the well-being and job satisfaction of nursing professionals. First, targeted interventions are crucial to reduce the impact of career and work stress on nurses. These interventions could include stress management programs, workload adjustments and robust support systems to fortify nurses' resilience and overall mental health.

Additionally, despite the lack of direct impact on career stress, organizations should consider providing career adaptability training to nurses. Developing career adapt abilities may act as a moderating factor, helping nurses navigate and cope effectively with the challenges posed by career stressors. Reflective practices addressing career regret are also recommended, involving mentorship programs, career counseling and opportunities for professional development to empower nurses to make informed choices and mitigate the likelihood of regret.

Lastly, recognizing the mediating role of work stress in the relationship between career stress and job satisfaction suggests that interventions targeting work stress can indirectly improve overall job satisfaction. A collaborative approach involving healthcare organizations, nursing leaders and individual nurses is essential to co-create strategies that address these interconnected factors and promote a positive work environment conducive to nurse well-being.

6 | Limitations and Future Studies

Our study is not without certain limitations that warrant consideration. First, the study primarily relies on self-reported measures, introducing the possibility of response bias and subjective interpretations. Additionally, the cross-sectional nature of the research design limits the establishment of causal relationships between variables. Longitudinal studies would offer a more robust understanding of the temporal dynamics involved in these relationships. Moreover, although we checked the effects of demographics, the study does not comprehensively account for individual differences, such as personality traits, coping mechanisms and varying resilience levels, which could significantly influence the model. The generalizability of findings is constrained by the sample composition, predominantly drawn from specific cities or hospitals, thereby limiting the extrapolation of results to broader populations.

7 | Conclusion

The interaction among career stress, work stress, career regret and job satisfaction in nursing presents a complex narrative. It encapsulates challenges, resilience and growth. By comprehending and addressing these interconnected dynamics, health-care stakeholders can collaboratively mould a future in which nurses thrive in their roles, find fulfilment in their professional journeys and deliver exceptional patient care.

Author Contributions

A.Akt. made substantial contributions to conception; involved in drafting the manuscript or revising it critically for important intellectual content. A.Ars. made substantial contributions to the research design and acquisition, analysis and interpretation of data. S.Y. made substantial contributions to the research design and acquisition, analysis and interpretation of data. S.K. made contributions to the data collection.

Conflicts of Interest

The authors declare no conflicts of interest.

Data Availability Statement

Data available on request due to privacy/ethical restrictions.

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