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Abstract

Nursing is known to be a stressful profession that can lead to physical and psychological health issues and behavioural problems. In oncology, workload among nurses is believed to be increasing in conjunction with rapidly increasing numbers of patients with cancer and staff shortages worldwide, therefore it is essential to sustain a quality oncology nurse workforce. Numerous studies have presented evidence on job strain, effects of coping strategies, and nurses' work performance within healthcare settings, but few have focused on oncology settings and none of these on nurses working in Saudi Arabia. The purpose of this review was to summarize empirical and theoretical evidence concerning job-related stressors in nurses, particularly oncology nurses, and the interrelationships among job strain, coping strategies, and work performance in this population. Search strategies identified studies published on nurses in peer-reviewed journals from 2004 to 2016. Twenty-five nursing studies were found examining the relationships among the concepts of interest. Common job-related stressors among oncology nurses were high job demands, dealing with death/dying, lack of job control, and interpersonal conflicts at work. Job strain was found to be significantly linked to coping strategies, and negatively associated with work performance among nurses in general. There is no existing empirical evidence to support the relationship between coping strategies and work performance among oncology nurses. The present evidence is limited, and a considerable amount of research is required in the future to expand the oncology nursing literature. Research is needed to investigate job-related stressors and their effects on oncology nurses.

Keywords	Coping; Job strain; Nurses; Review; Work performance
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An integrative Review of the Influence of Job strain and Coping on Nurses' Work Performance:
Understanding the Gaps in Oncology Nursing Research

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Author contributions

Hello,

Revised manuscript is submitted and all required changes were done based on the reviewers' comments.

Regarding the first reviewer comment "The author did not write abstract in accordance with the requirements of the journal", I did not make any changes in my abstract because it is written in the journal's website under the author guidelines that "Abstracts of review papers must be unstructured and should not use headings." as you know my article is an integrative review article.

Thanks a lot, and I really apricate your important comments

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Abstract

Nursing is known to be a stressful profession that can lead to physical and psychological health issues and behavioural problems. In oncology, workload among nurses is believed to be increasing in conjunction with rapidly increasing numbers of patients with cancer and staff shortages worldwide, therefore it is essential to sustain a quality oncology nurse workforce. Numerous studies have presented evidence on job strain, effects of coping strategies, and nurses' work performance within healthcare settings, but few have focused on oncology settings and none of these on nurses working in Saudi Arabia. The purpose of this review was to summarize empirical and theoretical evidence concerning job-related stressors in nurses, particularly oncology nurses, and the interrelationships among job strain, coping strategies, and work performance in this population. Search strategies identified studies published on studies in peer-reviewed journals from 2004 to 2016. Twenty-five nursing studies were found examining the relationships among the concepts of interest. Common job-related stressors among oncology nurses were high job demands, dealing with death/dying, lack of job control, and interpersonal conflicts at work. Job strain was found to be significantly linked to coping strategies, and negatively associated with work performance among nurses in general. There is no existing empirical evidence to support the relationship between coping strategies and work performance among oncology nurses. The present evidence is limited, and a considerable amount of research is required in the future to expand the oncology nursing literature. Research is needed to investigate job-related stressors and their effects on oncology nurses.

Keywords

Coping; Job strain; Nurses; Review; Work performance

1. Introduction

Whittemore and Knafl's [1] integrative review process was used to search literature for studies focusing on the concepts of job strain, coping strategies, and work performance. This integrative process framework involved identifying the research problem, conducting an organized search of the published studies, evaluating the quality of data, extracting and analyzing data, and critiquing and presenting the findings to improve the rigour of the process when conducting an integrative review [1]. This review process permits the inclusion of studies utilizing different research designs, including both non-experimental and experimental research to more fully understand the relationships between job strain, coping strategies, and work performance. Theoretical and empirical literature on job strain, coping strategies, and work performance in nursing and seminal literature was summarized and analysed based on this framework to synthesize what is known about this phenomenon in professional oncology nursing practice.

Nurses work independently and in collaboration with other healthcare professionals within teams to help people to achieve optimal health and functioning [2]. Certainly, nurses are exposed to a wide range of job-related stressors that may impact their job satisfaction, leading to poor work performance, absenteeism, and intension to leave their position or even the nursing profession [3-5]. One important source of work-related stress is job strain. Job strain is identified as a chronic problem among nurses internationally. Job strain has been widely investigated and refers to a pattern of responses that occur when a disparity exits between job demands and the level of control the employees have to satisfy those demands, challenging their ability to cope [6,7]. Researchers found that job strain may lead to some forms of behavioural, physical and

mental concerns including cardiovascular diseases, hypertension, burnout, emotional exhaustion, sleep disturbance, breast cancer, and substance use among nurses working in different specialities and healthcare settings [8-12].

Previous research has suggested that nurses use a variety of coping strategies when facing stressful situations in their work settings [12-14]. Coping strategies are actions or steps employed by an individual to reduce or rectify the harmful effects of stress [15]. How individuals use coping strategies is, in part, determined by their external and internal resources encompassing individuals' beliefs, health, support, social skills, responsibilities, and available material resources [16]. Lazarus and Folkman [15] have documented two fundamental coping strategies, problem-focused (PFCSs) and emotion-focused (EFCSs) (Table 1), based on transactions between the individual and their work environment. However, research findings indicate that individuals utilize both PFCSs and EFCSs when experiencing demanding and stressful conditions [5,17]. Research suggested that EFCSs can lead to problems for individual's growth, health and well-being, and could impact their quality of service delivery [17,18]. Undoubtedly, these outcomes are critical for nursing administrators/managers when dealing with work performance in light of nurse retention difficulties.

Work performance in nurses can be viewed as the effectiveness of the nurse in carrying out his/her roles and responsibilities related to direct patient care [19]. Borman and Motowidlo [20] hypothesized that work performance can be divided into two distinct categories: contextual performance (CP) and task performance (TP) (Table 1). There are many factors reported by nurses that may affect their work performance, including high

levels of job strain that have been discussed above, lack of skills and training, inadequate

feedback, poor communication, and supervisor support [22,23].

Table 1. *Definition of Concepts*

Job strain (JS)
- The combination of a high level of psychological workload demands and low work-related decisional latitude [6].

Job Demands (JD)
- Psychological stressors present in the work setting such as workload demand, time constrains, conflicts and ambiguities about obligations and needed skills in a job [6].

Job Control (JC)
- The ability of an employee to make decisions about his/her own work [6].

Coping strategies (CSs)
- Actions or steps employed by an individual to reduce or rectify the harmful effects of stress [15].

Emotion-focused coping strategies (EFCSs)
- Actions that an individual takes to change individual attitudes towards emotions caused by external stimuli, such as complaining and escape-avoidance [17].

Problem-focused coping strategies (PFCSs)
- Adjusting actions that include altering or managing the problem within the individual or the environment, such as problem-solving and self-control [17].

Work performance (WP)
- The effectiveness of the individual in carrying out his/her roles and responsibilities related to direct patient care [19].

Contextual performance (CP)
- Activities that are not directly associated with individuals' core tasks but form the institutional, social or/and psychological environment [20].

Task performance (TP)
- The individual's capability with which he/she carries out accomplishments which add to the institution's practical core [20].

Oncology nurse (ONs)
- A nurse who specializes in treating and caring for people who have cancer [21].

The relationship between work performance, coping strategies, job strain, and individual characteristics has also been documented in non-nursing groups, such as physicians, college teachers, aviation ground crews, and athletes [24-27]. Theoretically, job strain and EFCSs are perceived to negatively correlate with work performance [26]. However, little is known about the interrelationship among job strain, coping strategies, and work performance in the nursing profession, especially among oncology nurses.

The nursing literature needs to be examined to help provide an understanding of current oncology nurses' work environment and its impact on job strain in oncology nurses' work outcomes. Given the increasing complexity of today's healthcare work environment, the significant nursing shortage, the increasing number and severity of cancer cases, and the recognition of the oncology nurses' role in relation to patient safety [28], a better understanding of the effects of job strain and coping strategies on oncology nurses' work performance is vital to sustaining an adequate oncology nurses workforce and safe environments for practice. This is particularly relevant to a country such as Saudi Arabia (SA) that depends on the internationally educated nurses to meet its healthcare needs for care of patients with cancer. This integrative review aims to identify common job-related stressors experienced by oncology nurses and nurses working in other specialities and to summarise empirical and theoretical evidence concerning the relationships among job strain, coping strategies, and work performance to provide a more comprehensive understanding of this phenomena. This knowledge is significant, as it may provide the foundation for the development of programs and workplace interventions to help oncology nurses deal with their job strain more effectively and therefore strengthen their coping strategies and enhance nurse work performance.

2. Problem Identification

The focus of this integrative review was to provide information on job-related stressors in nurses, particularly oncology nurses, and the interrelationships among job strain, coping strategies, and work performance in this population. This integrative review synthesizes existing nursing studies in the area of job strain and work performance, and will also identify gaps in oncology nursing scholarship to guide future research. The following research question guided this review: What is the relationship between job strain, coping strategies, and work performance among registered nurses, particularly oncology nurses?

3. Data Search Strategy

The literature search strategy adopted was designed to capture published empirical and theoretical literature related to job strain, coping strategies, and work performance among nurses, and particularly with oncology nurses. To retrieve related articles, searches were conducted of the following electronic databases: Cumulative Index to Nursing and Allied Health Literature (CINAHL), MEDLINE, SCOPUS, PUBMED, and PsycINFO and used the following keywords in combination: "job strain", "job stress", "coping", "coping strategies", "work performance", "nurses", "oncology", and "oncology nurses", and were limited to the English-language. Some electronic databases did not specifically identify oncology nurses as a subject title; thus, oncology as a keyword was used within articles during searching in these databases in an effort to include all related studies. In order to focus on the most current literature, the review examined studies within the12-year period from 2004 to 2016. Studies addressing both oncology and non-oncology nurses were included. Unpublished studies, documents,

editorials, and descriptive reports limited to discussing ideas and experiences about job strain, coping strategies, and work performance, articles about instrument development, and studies published in other languages were excluded. Also, studies that focused on job strain, coping strategies, and work performance among academic nursing staff, nursing managers/administrators, nursing students, other healthcare professionals, patients with cancer, and informal care-givers, such as family members were excluded. Focusing on studies conducted among nurses allowed the researcher to better identify gaps in nursing scholarship and highlight opportunities for improving both nursing research and practice in the future.

The electronic database searches yielded 828 possible citations utilizing the extensive subject headings (Table 2). Eliminating identical citations resulted in 673 articles that mentioned job strain/job stress and coping strategies, job strain and work performance.

Table 2. *Electronic Search of Databases*

Database	Search Key Terms Used in all Databases	No. of Titles & Abstracts
CINAHL, MEDLINE-OVID, SCOPUS, PUBMED, and PsycINFO	Job strain Or job stress & coping strategies & nurses	8
	Job strain OR job stress & work performance & nurses	38
	Coping strategies & work performance & nurses	259
	Job strain & coping strategies & work performance & nurses	419
	Job strain OR job stress & coping & oncology nurses OR oncology	103
	Job strain OR job stress & work performance & oncology nurses OR oncology	
Total no. of citations		828

All abstracts or article citations found through the computerized search were reread either in print or online, and full study articles were saved if they met the following inclusion criteria: (1) published in an English language journal, (2) studies focused on oncology nursing or nurses practice, (3) described or examined the

phenomena of job strain, coping strategies, and work performance among nurses or included one or more tools to collect information on job strain, coping strategies, and work performance in nurses, and (4) selected studies could be either qualitative or quantitative or mixed methods. The reference lists of included articles were also reviewed to identify additional related studies. There was no direct follow-up with the investigators of any study to retrieve supplementary data.

4. Data Quality Evaluation

Research studies that met the inclusion criteria were assessed for their quality by comparing their relevance to the primary review question by individually evaluating each for quality of data through utilization of either the Qualitative Assessment and Review Instrument or the Checklist for Assessing the Validity of Descriptive/Correlational Studies from the Joanna Briggs Institute [29,30]. Quantitative research studies were evaluated for the presence of: (1) sample recruitment procedure, (2) representativeness and sufficient sample size, (3) inclusion criteria, (4) a connection between the theoretical framework and hypothesis, (5) instruments validity and reliability, (6) ability to compare groups, (7) suitable statistical data analysis, (8) a link between theoretical framework and findings, and (9) generalizability of results. On the other hand, qualitative research studies were evaluated on: (1) methodological congruency with the indicated philosophical view, (2) study questions, (3) data collection procedures, (4) data analysis methods, (5) results interpretation, (6) ethical considerations of the study process, and (7) the basis for existing conclusions.

Each abstract was reviewed to determine if the publication met the inclusion criteria. The majority of research publications were completed on populations other than nurses and did not address the core question of this review resulting in 650 articles being

eliminated. Twenty-three abstracts primarily met the inclusion criteria and the studies were retrieved and reviewed. Manual searching of the reference lists of these 23 articles identified two additional references not previously identified from electronic searches (Figure 1). Therefore, the organized literature search yielded 25 articles that met the inclusion criteria for this review, of which 19 were quantitative research studies three were mixed methods article, two qualitative research studies, and one systematic review study (Table 3).
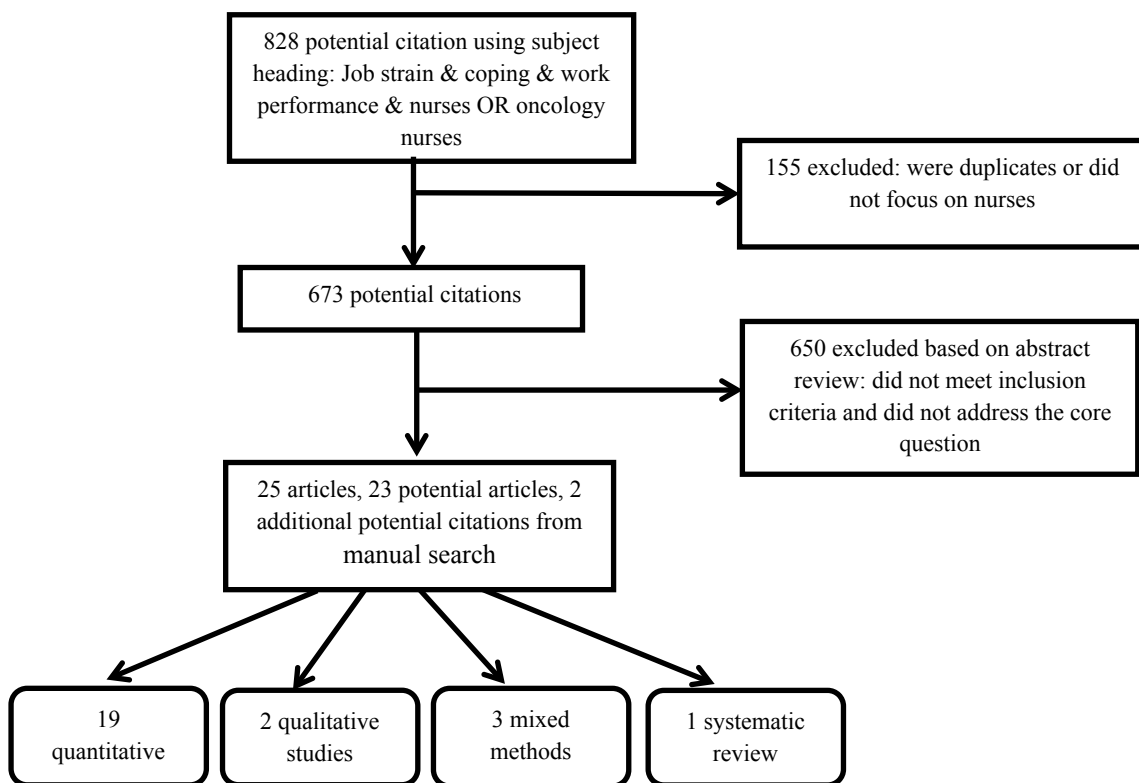
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│ subject heading: Job strain  │
│ & coping & work performance  │        ┌──────────────────────────┐
│ & nurses OR oncology nurses  │───────▶│ 155 excluded: were       │
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              │                          │ abstract review: did not │
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Figure 1. Summary of Search Strategy and Selection of Relevant Literature

The 25 articles represent nursing studies from the following countries: three articles each from Iran and Brazil, two articles each from Jordan, China, Japan, Australia, Indonesia, and one article each from Hong Kong, Twain, Malaysia, India, Uganda, Ghana, Portugal, South Africa, and the United States.

5. Data Extraction and Analysis

Data extracted from each article encompassed the study objective, design, setting, sample, and data collection procedures. Also, the results and discussion sections were reread, and research findings that investigated the relationships among job strain, coping strategies, and work performance and individual characteristics among nurses, were extracted. Data extracted from theoretical studies encompassed study type, objective, and explanations or conclusions examining interrelationships among concepts of interest. Extracted data from the included research studies were then reviewed and consolidated into groups according to the similarities in meaning and/or descriptions. Data were grouped, and then compared, summarized, and finally findings were interpreted across and within research studies to recognize themes or concepts that found relationships between concepts of interest among nurses in general, including oncology nurses.

The data quality from the quantitative studies items were rated as (1) yes, (0) no or unclear, and summary data quality score was tabulated. According to their evaluation score, research studies were ordered as high (7-10), average (4-6), and low (1-3) quality. The qualitative studies were rated from average quality (4 out of 10) [47] to high quality (6 out of 10) [48]. Assessment of the qualitative studies using the critical appraisal tool [29] found an absence of reflexivity, limitations in purposive sampling [47,48], and lack of clear discussion regarding coping strategies [48].

Table 3

Summary of Included Studies that Examined Job Strain, Coping Strategies and Work Performance among Nurses

Authors/Year/ Country	Study Design	Participants	Sample Size	Instruments	Data Analysis	Findings
AbuAlRub (2004) [19] (USA, Canada & UK)	Descriptive, correlational, Cross-sectional Design	Convince sample of nurses from different units of hospitals	303	Nursing Stress Scale (NSS) [51] Six Dimension Scale of Nursing Performance (6-DSNP) [60] Social Integration Scale(SIS) [68]	Cronbach's α reliability testing (0.65 to 0.95) Pearson's correlation Hierarchical regression	A curvilinear (U-shaped) relationship was found between JS and WP. Significant negative correlation was found between job strain and social support from co-workers (r= -0.14, P<0.05). 20% of the variation in WP was explained by background variables, social support from coworkers, JS and interaction between JS and social support from coworkers. Perceived social support from coworkers moderated the relationship between JS & WP.
AbuAlRub and Al-Zaru (2008) [3] (Jordan)	Correlational, Cross-sectional Design	Convince sample of nurses from medical, surgical, pediatric, emergency, renal and Obs/Gyn units of 4 public hospital	206	Nursing Stress Scale (NSS) [51] McCain's Intent to stay Scale [69] Recognition Scale (RS) [62]	Cronbach's α reliability testing (0.75 to 0.93) Chi-squared test Hierarchical regression	Non-significant negative relationship between JS and WP was found (r= -0.11, P = 0.13). Significant negative correction was found between JS and intension to stay at work (r= -2.4, P =0.01). Significant positive correction was found between WP and intension to stay at work (r=2.3, P =0.02).

Azizollah et al. (2013) [31] (Iran)	Descriptive, Correlational Design	Stratified random sample of nurses from hospitals	491	Job Stress Survey Questionnaire (HSE) Job Performance [61]	Cronbach's α reliability testing (0.84 to 0.89) Pearson's correlation Regression analysis	Significant negative correction was found between JS and WP (r= -0.42, P=0.001). Significant negative correction was found between job demands and WP (r= -0.44, P =0.000). Significant negative correction was found between job control and WP (r= -0.39, P =0.000).
Beh and Loo (2012) [13] (Malaysia)	Mixed Methods	A random sample of female nurses from different units of a publicly funded hospital	185	Questionnaire developed by the researcher based on the literature review Structured interview	Absolute frequencies (n) and relative frequencies (%) Analysis method of qualitative data Was not reported	The three major job-related stressors were heavy workload (64.2%), poor working conditions (67.9%), and repetitive work (73%). Social support (38%), control (45%), symptom management (30%) and escape (19%) were the most used CS.
Bianchi (2004) [32] (Brazil)		Nurses from cardiovascular units of a publicly funded hospital	76	Nursing Stress Evaluation Questionnaire (NSEQ) [52] Ways of Coping Questionnaire (WOCQ) [59]	Cronbach's α reliability testing (0.80 to 0.95) Mean and standard deviation Spearman's correlations Fisher test	The four major job-related stressors were working conditions (4.07±1.26), personnel management (3.90±1.39), nursing care (3.58±1.29) and coordination of unit (3.56±1.34). Positive reappraisal (1.87±0.47), seeking support (1.81±0.50), and self-controlling (1.79±0.43) were most used CSs. No demographic characteristics were related to sources of stress. Statistically significant relationships between job-related stressors and CSs (P <0.05).
Cai et al. (2008) [14] (China)	Correlational, Cross-sectional	A convenience sample of	188	Nursing Stress Scale (NSS) [51]	Cronbach's α reliability testing (0.84 to 0.90)	High job demands (6.16±3.241) and dealing with death/dying (5.627±2.780) were the highest of

	Design	nurses from psychiatric units of 3 hospitals		Simple Coping Strategies Questionnaire (SCSQ) [57]	Mean and standard deviation Correlations	all the job-related stressors. Nurses tended to use PFCSs (22.069±6.185) more frequently than they use EFCSs (9.255±4.0477). A significant positive relationship between job strain and PFCSs (r=0.39, $P < 0.01$).
Chang et al. (2006) [33] (Australia)	Predictive, correlational, Cross-sectional Design	Sample of Nurses from different units of acute care publicly funded hospitals	320	Nursing Stress Scale (NSS) [51] Ways of Coping Questionnaire (WCQ) [59] Short-Form (SF)-36 Health Survey Version 2 [70]	Pearson's correlation Forward stepwise regressions Stepwise regressions	The most common sources of nursing stress were high job demands (11.29±3.95), followed by death and dying (8.58±4.35), and conflict with colleagues (6.35±2.78). Planful problem solving was the most used CS, accounting for 18% of the coping, followed by self-control (16%) and seeking social support (16%). Strong significant correlations were found between JS, CSs, and mental and physical health (R^2=0.35, F (10.24) =14.8, P <0.001).
Chen et al. (2009) [34] (Twain)	Correlational, Cross-sectional Design	Sample of nurses from OR of 7 teaching hospitals	112	Stressor Scale Stress Coping Strategy Scale	Cronbach's α reliability testing (0.61 to 0.94)	Interpersonal relationship (2.64±0.67), patient safety (3.39 ±1.01) and work environment (3.11±0.80) were the most job-related stressors.
Chen et al. (2009) [34] (Twain)				Job satisfaction scale Developed by	Independent t test, Analysis of variance (ANOVA)	Job Stressors were positively related to destructive coping strategies (r=0.24, $P < 0.01$).

				researchers for the study purpose	Pearson's correlation	
Donkor (2013) [35] (Ghana)	Descriptive, Cross-sectional Design	A systematic random sample of nurses from different units	70	Developed by the researcher for the study purpose Semi-structured interview	Absolute frequencies (n) and relative frequencies (%) Bar charts	The most common sources of nursing stress were high job demands (44.2%), followed by conflicts with supervisors (17%) and conflict with colleagues (17%). 56% of nurses strongly agreed that JS affects nurses' performance. 70 nurses said JS has negative relationship with performance.
Fathi et al. (2012) [45] (Indonesia)	Mixed Methods	Stratified random sample of nurses from 3 units (medical, surgical & ICU) of two tertiary public hospitals	126	Nursing Stress Scale (NSS) [51] Brief COPE [58] Semi-structured focus group interview	Cronbach's α reliability testing (0.86 to 0.98) Pearson & Spearman's correlations Analysis of qualitative data was not reported	Sources of stress included dealing with death/dying (2.07±0.57), high job demands (1.96±0.51) and lack of social support (1.69±0.57). Most commonly CSs used were EFCs (e.g. religion) (3.51± 0.66). Significant relationship between JS and CSs (P <0.05). Positive relationship was found between job demands and EFCSs.
Gholamzadeh et al. (2011) [36] (Iran)	Descriptive, Cross-sectional Design	Sample of nurses from emergency units of 3 teaching hospitals	90	Nursing Stress Scale (NSS) [51] Ways of Coping Questionnaire [59]	Cronbach's α reliability testing (0.88) Chi-squared test Absolute Frequencies (n) and relative frequencies (%)	Sources of stress included dealing with patients or their relatives, high job demands and lack of social support. EFCSs were more used (59.4±16.1) than PFCSs (18.9±16.1).
Gomes et al. (2013) [12] (Portugal, Europe)	Descriptive-exploratory, Cross-sectional Design	Nurses from oncology head and neck surgery units of 3 central, public	96	General Health Questionnaire (GHQ) [71] Occupational Stress Inventory (OSI)	Cronbach's α reliability testing (0.70 to 0.87) Absolute frequencies (n) and relative	Female oncology nurses had a greater degree of JS (P=0.49). The most common sources of JS included High job demands (52%, n=50), death/dying (47%, n=45) and lack of recognition (45%,

		hospitals		[53] Brief COPE [58]	frequencies (%) Bivariate analysis Independent samples *t* test Pearson correlation	n=43). Most commonly CSs used by oncology nurse when dealing with JS were planning (48%, n=46) (5.55±1.60), active coping (56%, n=54) (5.41±1.43), acceptance (49%, n=47) (5.06±1.38) and self-distraction (40%, n=38) (4.94±1.59). Statistically significant differences are only found regarding substance use, with the male group having higher values (P = 0.011). Significant negative correlation between general health and avoiding coping strategies (avoidance, Self-distraction and Denial) (P <0.05).
Hays et al. (2006) [37] (USA)	Descriptive, Cross-sectional Design	Convince sample of nurses from a variety of ICUs of 7 acute public hospitals	135	The Ways of Coping Questionnaire (WCQ) [59] ICU Stressors Scale was developed by researchers	Cronbach's α reliability testing (0.93) Pearson's correlation Analysis of variance (ANOVA)	Dealing with death/dying (53%), inadequate preparation (52%) and staff shortages (50%) were the most common stressors. Escape-avoidance (62 %) and confrontive coping (60%) were common CS used. Statistical significance was not found among demographic variables and stressors or coping.
Ida et al. (2009) [46] (Japan)	Mixed Methods Design	Convince sample of nurses of a major publicly funded hospital	502	JCQ [55] Sense of Coherence (SOC) [72]	Cronbach's α (0.73 to 0.86) Factor analysis Pearson's correlation	A significant relationship was found between JS and WP (r= -0.61, P < 0.01). Job demands and lack of skills were the most sources of JS.

Jannati et al. (2011) [47] (Iran)	Descriptive, Qualitative Design	A purposive Sample of nurses from different units of 5 teaching hospitals	28	Semi-structured interview Observation	Ground theory approach	Job demands, lock of control and interpersonal relationship were common job-related stressors among nurses. Symptom management, control, and emotional were common used CSs.
Lambert et al. (2004) [39] (Japan)	Predictive, correlational, Cross-sectional Design	Nurses from different units of six teaching and private hospitals, located in the central, western, and southern	310	Nursing Stress Scale (NSS) [51] The Ways of Coping Questionnaire (WCQ) [59] Short-Form (SF)-36 Health Survey [70]	Cronbach's α reliability testing (0.84 to 0.92) Multiple correlation Stepwise multiple regression	The most common sources of JS included high job demands, lack of social support, conflict with colleagues and death/dying. Significant positive correlation was found between JS and CSs (P =0.01). Significant positive relationships were found between age, years of nursing experience, level of income, and nursing education and job-related stressors (P <0.05).
Lambert and Lambert (2008) [38] (China)	Descriptive, Correlational Design	Convince sample of nurses from a variety of ICUs of 4 public hospitals	102	Nursing Stress Scale (NSS) [51] Brief COPE [58]	Cronbach's α reliability testing (0.82 to 0.90) Spearman's correlation	High job demands was the most cited job stressor (11.0 ±3.72; range, 4-18), while planning was the most frequent CS used (5.14±1.04; range, 3-8). High job demands were positively correlated with EFCSs (P <0.05).
Lim et al. (2010) [4] (Australia)	Systematic Review	Sample of nurses from different units	27 Articles	Databases Search Manual Search		High job demands, lack of social support, role conflict, role ambiguity and interpersonal relationships were identified as the most common job-related stressors in reviewed studies. Nurses used a variety of CSs:

						planful problem solving, seeking social support, self-controlling, escape–avoidance and self-distraction. The uses of PFCSs are associated with good mental health and well-being outcomes.
Moola et al. (2008) [48] (South Africa)	Exploratory, Descriptive and Contextual, Qualitative	A purposive sample of nurses from CCUs of 5 hospitals	10	Semi-structured Focus group interviews Field notes	NUD*IST 4 software	CCNs experienced stressful situations due to high job demands and lack of social support. Avoidance-escape was the most common CS used.
Muazza (2013) [40] (Indonesia)	Correlational, Cross-sectional Design	sample of female nurses from different units of a publicly funded hospital	60	Developed by the researcher for the study purpose	Absolute frequencies (n) and relative frequencies (%) Correlations Regression analysis	The most common sources of JS included role conflicts (72%), workload (76.8%), and relationships with supervisors and colleagues (59%). Headache (65.5%), hypertension (37.9%) and respiratory problems (50%) were the most common symptoms associated with JS among nurses. Significant negative relationship was found between JS and WP (r= -0.64, P= 0.000).
Nabirye et al. (2011) [5] (Uganda)	Correlational, Cross-sectional Design	Convince sample of nurses from medical, surgical, pediatric and Obs/Gyn. units of 4	333	Nurse Stress Index (NSI) [54] Job Satisfaction Survey (JSS) [64] Six Dimension Scale of Nursing	Cronbach's α reliability testing (0.81 to 0.93) Mean (M) and standard deviation (SD) Pearson's correlation	Nurses experienced high levels of JS with mean scores ranging from 75.5 to 90.3. Significant difference in JS and WP mean scores among the different hospitals, (F=14.46, P <0.001). Significant negative relationship was found between JS and WP

		private and public hospital		Performance (6-DSNP) [60]	One-way analysis of variance (ANOVA) Post-hoc test	(r= -0.13, P =0.02).
Rodrigues and Chaves (2008) [41] (Brazil)	Descriptive-exploratory, Cross-sectional Design	Nurses from different oncology units of 5 public hospitals	77	Demographic data Inventory developed by authors Coping Strategies Inventory (CSI) [15]	Cronbach's α reliability testing (0.54 to 0.75) Mean and standard deviation	The most common sources of JS included death/dying (29%), conflict with colleagues (17%) and high job demand (16%). Positive reappraisal (0.75) (10.34±4.96, problem solving (0.73) (9.91±3.94), and Escape-avoidance (0.73) (6.07±4.62) were the most used CSs. Most commonly CSs used by oncology nurse were PFCSs.
Sudhaker and Gomes (2010) [42] (India)	Correlational Design	Convince sample of nurses from different units of 2 tertiary hospitals	60	Performa of nurses Job Stress Index Coping checklist Developed by study's researchers	Absolute frequencies (n) and relative frequencies (%) Correlation matrix	Seeking social support was the most used CS, accounting for 95% of the coping, followed by problem-solving (93%) and symptom management (93%). Strong negative correlation between JS and CSs (r = -0.92, p<.05).

Wang et al. (2011) [44] (Hong Kong)	Descriptive, Correlational, Cross-sectional Design	Sample of nurses from acute surgical units of 3 hospitals	98	Nursing Stress Scale (NSS) [51] Jalowiec Coping Scale (JCS) [56]	Mean and standard deviation Pearson's correlation	Surgical nurses experienced moderate level of job strain. Most common job stressors included high job demands (15.36±2.95), lack of support (13.32±2.92) and inadequate preparation (12.33±2.92). Evasive (19.23±5.66), confrontive (17.46±4.79) and optimistic (15.81±3.94) were the most used CSs. Significant negative correlation was found between JS and optimistic (r= -432, $P < 0.01$) and confrontive CSs (r= -401, $P < 0.01$.).
Umann et al. (2014) [43] (Brazil)	Descriptive, Cross-sectional Design	Nurses from nephrology units of teaching hospital	129	Inventory of Stress in Nurses (ISN) [50] Occupational Coping Scale (OCS) Work Limitations Questionnaire (WLQ) [73]	Cronbach's α reliability testing (0.79 to 0.95) Mean and standard deviation	Sources of JS included high job demands (3.47±0.67), interpersonal relationships (3.51±0.78), and role conflicts (3.45±0.73). Most CSs commonly used were management of symptoms (3.44±0.59), self-control (2.79±0.59) and avoidance (2.63±0.32).

Note: (JS) job strain, (CSs) coping strategies, (PFCSs) problem-focused coping strategies, (EFCSs) emotion-focused coping strategies, work performance (WP)

Three mixed methods research studies [13,45,46] were rated as average quality, Beh and Loo [13], and Fathi et al. [45] were rated as 5/10, and Ida et al. [46] was rated as 4/10.

Three quantitative studies were rated as high [5,33,39], eight were average [3,12,19,31,32,35,37.38], and eight were low quality [14,34,36,40-44]. Some of these studies did not use random sampling [33,35], and did not explicitly study hypotheses or they attributed importance to findings that were not statistically significant [3,36]. Other researchers used non-validated tools (e.g. questions developed by the study authors) [34,35,40,42] to assess the main study variables. Another chose only one or two items from other psychometrically tested scales without re-assessing their psychometric properties [3]. In a further set of studies, data collection procedures [31,32,36,40,42,43] and data analytic techniques [36,41] were deemed to be either unclear or inadequate.

The sample sizes of the 19 quantitative studies ranged from 70 to 491 nurse participants representing different specialities: nephrology, medical, surgical, pediatric, psychiatric, Obs/Gyn, operation room (OR), emergency, critical care, intensive care unit (ICU), oncology, and out-patient clinics. In the qualitative and mixed methods studies, the sample sizes ranged from 10 to 28 nurses in the former and from 126 to 502 nurses in the latter. Participants in the studies were primarily clinical nurses offering direct care to patients. Findings proposed three themes: (i) job strain in nursing, (ii) coping strategies and job-related stressors among nurses, and (iii) work performance and job-related stressors among nurses.

6. Data Presentation

Data presentation is the last phase in this integrative review process and focuses on the evidence that supports the review's conclusion [1] (Table 3).

6.1 Job Strain in Nursing

Nursing is commonly perceived as a demanding, challenging, and stressful profession. Based on the reviewed studies, high job demands, lack of job control, and low social support were the most often-cited job-related stressors reported by nurses [4,5,12,19,31,33,35,36,39,43-47]. Eight studies reported that job demands/work overload were identified as the best predictors of mental and physical health resulting in emotional exhaustion, depression, and anxiety among nurses in nursing speciality practice [4,12,13,33,39,40,46,48]. Work settings may pose varying levels of job demands. For instance, nurses who worked in critical care, emergency, oncology, and nephrology units reported higher levels of job demands and lower levels of job control than those working in other nursing specialities [12,36,41,43]. These results may be attributed to increased workload and emotional exhaustion experienced by nurses working in acute care units that require nurses to have comprehensive knowledge and skills to provide the necessary level of care to these patients [12,36,43].

Furthermore, researchers reported that nurses working in publicly funded hospital had the highest mean stress score (88.27±20.87) while those working in privately funded not-for-profit hospitals' means scores ranged from 73.35 (SD =16.4) to 76.09 (SD = 23.5), reportedly due to high job demands and excessive workload [5]. Further analysis of the previous study indicated a significant difference in mean stress scores reported in publicly versus privately funded hospitals ($F = 14.46, P < 0.0001$) [5]. On the other hand, another study conducted by Fathi et al. [45] explored workplace stressors and coping among 126 publicly funded hospital nurses, found that most nurse participants (n= 89, 71%) experienced low levels of stress in their workplace resulting based on their ratings

on overall job-related stressor subscales (inclusive of job demands) (61.69 ±14.12 [33-132]).

Six studies found that role conflict, role ambiguity, and lack of recognition for professional competence are significant sources of stress among nurses, and may be associated with negative consequences at the organizational and individual nurse levels [3-5,12,40,43]. Role ambiguity arises when there is a lack of clarity in the roles an employee is expected to fulfill, while role conflict occurs when an employee is subject to competing or conflicting sets of expectations and demands in the organization [49]. Interpersonal relationship problems were also recognized as another important job-related stressor among nurses in the reviewed studies. Different types of interpersonal problems encountered were conflict with co-workers, physicians, and supervisors [4,33,34,35,39,40-43,47]. These conflicts could be another source of stressor affecting nurses' mental and physical health [33,39,40] and quality of nursing care [35,40,43], and leading to job dissatisfaction [38]. In two cross-sectional studies that examined the most common job-related stressors experienced by oncology nurses, high job demands, dealing with death/dying, communication issues, emergency situations, interpersonal staff conflicts, lack of recognition, inadequate preparation, and low salaries were identified as high sources of stress among oncology nurses in both Portugal and in Brazil [12,41].

The reviewed studies used different instruments to measure nurses' job strain, including: Inventory of Stress in Nurses (ISN) [50], Nursing Stress Scale (NSS) [51], Job Stress Index [42], Nursing Stress Evaluation Questionnaire (NSEQ) [52], Occupational Stress Inventory (OSI) [53], Nurse Stress Index (NSI) [54], Job Stress Survey Questionnaire (HSE), and the Job Content Questionnaire (JCQ) [55]. The Nursing Stress

Scale (NSS) developed by Gray-Toft and Anderson [51] was the most common job strain measure used, which accounted for 50% of articles [3,14,19,33,36,38,39,44,45].

6.2 Coping Strategies and Job-related Stressors among Nurses

Out of the 25 reviewed studies, 18 studies (72%) examined the influence of and perception of coping strategies and experiences of job strain in nurses who were working in healthcare settings [4,12-14,32-39,41-48]. Twelve studies (48%) (seven cross-sectional, two mixed methods, two qualitative studies, and one systematic review) explored the relationship between job-related stressors and coping strategies among nurses in different hospital units in Iran, Hong Kong, China, Brazil, South Africa, USA, Malaysia, and Indonesia. Four cross-sectional studies (16% of total studies) assessed the relationships between job-related stressors, coping strategies, individual characteristics, and mental and physical health among nurses in Brazil, Australia, Japan, and India [33,39,42,43], while two cross-sectional studies (8% of the total) examined relationships between job-related stressors, coping strategies, individual characteristics, and job satisfaction among ICU nurses in Chinese nurses [34,38].

Only two studies described the diversity of coping strategies utilized by oncology nurses to deal with stressful situations in their work settings and linked them with nurses' health and well-being [12,41]. Researchers reported that oncology nurses used more problem-focused than emotion-focused strategies, such as positive reappraisal, problem-solving, planning, and acceptance (Table 3). However, many researchers found that increased job strain levels among nurses are significantly associated with increased utilization of EFCSs, such as escape-avoidance, denial, venting, and symptom management coping strategies in seven studies [34,37,38,42,43,45,48], and confirmed a

significant positive relationship between job demands and EFCSs among 228 Indonesian and Chinese nurses from different units [38,45]. In addition, six studies provided evidence that EFCSs are frequently related to increased stress, mental and physical problems, and job dissatisfaction [4,12,13,33,38,48]. In contrast, some researchers noted that neither coping strategy recognized as being any better than another by study's participants [36,41].

As shown in Table 3, instruments used to assess and to identify the common coping strategies included: Jalowiec Coping Scale (JCS) [56], Occupational Coping Scale (OCS) [43], Simple Coping Strategies Questionnaire (SCSQ) [57], Coping Strategies Inventory (CSI) [15], Brief COPE [58], Coping Checklist [42], Ways of Coping Questionnaire (WCQ) [59], and open Semi-Structured Interview (12%) [47]; [48]. Ways of Coping Questionnaire (WCQ) [59] was the most commonly used instrument to assess coping strategies among nurses [32,33,36,37,39].

6.3 Work Performance and Job-Related Stressors among Nurses

Out of the 25 reviewed studies, seven studies (28%) explored the relationship between work performance and job-related stressors among nursing populations in Uganda, Ghana, Japan, Indonesia, the USA, Canada, Britain, Iran, and Jordan, using random and non-random sampling methods [3,5,19,31,35,40,46]. Two of these studies included samples of nurses who had more than 9-year's nursing experience [19,46], and three included nurses who had more than one year's nursing experience [3,5,40]. Only one study enrolled nurses working in different units and countries and held a diploma, an associate, or bachelor degree in nursing [19]. Three were cross-sectional studies carried out among nurses from different units, where data were collected through self-reported

questionnaires [3,5,19]. Only one of these studies used a mixed methods design to examine 502 nurses across different units in a major hospital in Japan and reported relationships between job strain, work performance, and individual characteristics [46]. Data were collected through self-reported questionnaires and semi-structured interviews, and analyzed using univariate and bivariate statistics, and factor analysis.

Findings revealed that nurses' perceived barriers to better work performance included high job demands (usually exacerbated by staff shortages), lack of control over work, lack of social support, lack of skills and knowledge, insufficient rewards and lack of recognition for professional competence. Five studies confirmed a significant negative relationship between work performance and job strain among nurses from different units [5,31,35,40,46]. Several studies reported conflicting findings. In a study of 206 Jordanian nurses working in four publicly funded hospitals, researchers found a non-significant negative relationship between work performance and job strain ($r = -0.11$, $P = 0.13$) [3], while in an earlier study of 3030 nurses from different units found that job strain was negatively correlated with work performance ($r = -0.10$, $P < 0.05$), and that the squared term of job strain was positively correlated with work performance ($r = 0.01$, $P < 0.05$) [19]. Researchers in all seven reviewed studies suggested that developing programs and workplace interventions should concentrate on reducing the above-mentioned job-related stressors to help enhance nurses' work performance.

As shown in Table 3 these reviewed studies used the following instruments to measure work performance: The Six Dimension Scale of Nursing Performance (6-DSNP) [60], Job Performance [61] and Recognition Scale (RS) [62]. The 6-DSNP [60], was used in two studies [5,19], while one study used two performance indicators (nursing care

quality and sickness-absence) to assess work performance among 502 Japanese nurses [46].

6.4   Demographic and Work-Related Variables

Individual nurse and work characteristics, such as age, gender, educational backgrounds, years of experience, family situation, and type of hospital were found to have an impact on nurses' perception of stressful situations, work performance, and their capacity to exercise coping strategies. In six studies, examining job-related stressors and individual characteristics among Japanese nurses, Chinese, Twine, and Ugandan nurses, researchers noted that older nurses with more work experience and higher levels of nursing education were more likely to experience higher levels of job strain [5,14,34,38,39,46]. In contrast, a study carried out with nurses in Hong Kong found moderate levels of job strain among 66 % of younger nurses with a mean age of 30 years (n=65, SD = 6.5) who reported work overload/ high job demands (15.61±2.95), lack of social support (13.32±2.92), and moderate levels of job strain (76.7±14.9) [44]. Nursing education was found to be positively correlated with seeking social support, acceptance, and self-blame as ways of coping with job strain, while negative correlations between age and nursing experience and these coping strategies were found (P<0.05) [38,39]. Furthermore, only one study (6%) conducted by Gomes et al. [12] indicated that statistically significant differences were found regarding substance abuse with the male nurse group having higher levels when working in head and neck surgery oncology units (Mann-Whitney U (P = 0.01)). In addition, Nabirye et al. [5] found significant differences in job strain and work performance means by type of hospital with publicly-funded hospitals having the highest mean score for job strain (F = 14.46, P < 0.0001),

and the lowest mean score for work performance ($F = 7.95$, $P < 0.001$) among Uganda nurses, indicating that nurses working in publicly funded hospitals had significantly poorer work performance than those who worked in privately funded hospitals ($t = -3.425$, $P < 0.05$).

6.5   Limitations of Included Studies

The included studies in this integrative review have some serious theoretical and methodological limitations. First, most reviewed studies used a cross-sectional research design and, therefore, an inference regarding casual relationships among study variables cannot be drawn [63]. Future research should consider alternative methods, such as longitudinal studies, that would then temporality to be determined, providing stronger evidence for causal relationships between study variables in organizations [63,64]. Second, this review found that most studies used a non-random sampling method. In addition, nurses who had participated in the reviewed studies were working in different types of units and had varying work experiences. Third, most studies did not report how sample sizes were determined (e.g. power analysis). Therefore, this may limit the ability of a study to determine statistical significance if the sample size was inadequate [63]. While a theoretical framework was sometimes mentioned, only six studies (24%) [5,13,34,37,45,47] described a conceptual model that included study variables and their relationships. Of the theoretical frameworks provided, one (4%) research study [5] used the Karasek's Demand-Control Model [6] and the Lazarus and Folkman's Transaction Model of Stress and Coping [15]. Unlike most of the included studies, only one study (4%) by Fathi et al. [45] provided theoretical definitions that were not only well stated, but also were consistent with the theoretical framework supporting the work.

The absence of theoretical definitions of constructs and the lack of adequate information about theoretical frameworks, made it difficult to identify the consistency between operational definitions, theoretical definitions, and their link to theory in most of the studies. Observation of these issues is consistent with earlier findings in an integrative review of job stress and coping strategies in nurse mangers research [65]. Hence 48% of the included studies (n=12) were either atheoretical or failed to report a theoretical framework to support the study work. It should also be noted that all reviewed studies were published in English. Non-English articles, which may contain useful information, were excluded, therefore potentially hindering a more comprehensive understanding of the relationships between the concepts of interest in this review.

7. Discussion

This review aimed to summarize empirical or theoretical research regarding job strain in nursing and its relationship among the job-related stressors, coping strategies, and work performance among nurses, particularly those working in oncology units. From the review, it is clear that studies examining the relationships between these variables are predominantly non-experimental quantitative studies using self-reported instruments. A potential cause for investigators' preference for conducting non-experimental studies rather than experimental and interventional studies may be due to problems related to access to subjects or research expertise of researchers [2]. However, while most studies utilized valid and reliable instruments, other researchers utilized self-developed tools (e.g. Performance of Nurses [42] and Stress Coping Strategy Scale [34]). The Nursing Stress Scale [51], which what used in 50% of the stress measurements, was the most used instrument. Furthermore, most studies reported internal consistency reliability

coefficients (Cronbach's α) for their instruments, which are in acceptable ranges (α > 0.70) (Tables 3). However, there was only limited qualitative research conducted in this area, with only two qualitative studies conducted by Jannati et al. [47] and Moola et al. [48] included in this review, possibly because the construct of job strain is relatively easily measured by existing stress and coping strategies survey tools.

Evidence from the reviewed studies indicated that nurses experience moderate to high levels of job strain, particularly nurses who worked in oncology, ICU, emergency, and nephrology units. The majority of the studies recognized high job demands to be the most prominent job-related stressor among nurses. This was followed by lack of social support, dealing with death and dying, lack of job control, role stress, interpersonal relationships, and lack of recognition. Even though the settings of these studies varied, the findings were similar in terms of job-related stressors and the effects of job strain on nurses' health, job satisfaction, and work performance. However, the review found a need for further understanding of stressors related to interpersonal relationships in work settings, mainly associated with supervisors and physicians [33,43].

The included studies found that individual nurses may perceive stress quite differently and choose to implement associated coping strategies accordingly (e.g. [38,39]). It was noted that although nurses recognized the same four highest job-related stressors (job demands/work overload, lack of job control and social support, and dealing with death/dying), there were differences in coping strategies adopted. The most frequently used reported coping strategies in stressful situations by those hospital nurses, irrespective of country, were: escape-avoidance, seeking social support, denial, symptom management, planful problem-solving, and self-control, although not always in that

order. The majority of the studies highlighted that nurses utilize EFCSs more than PFCSs which can lead to greater risks for mental and physical health issues. This finding is supported in a systematic review conducted by Lim et al. [4], examining stress and coping in Australian nurses. However, oncology nurses use mainly PFCSs, such as positive reappraisal and problem- solving, to deal with stressors in their work settings [41]. Positive reappraisal coping described as an individual's effort to produce positive meaning by concentrating on personal development and may have a spiritual dimension [15]. This type of coping may be utilized more frequently when oncology nurses view their faith as valuable in their nursing practice, therefore they do not lose their faith when encountered with stressful situations [66]. Consequently, it may allow them to change something about themselves in order to better cope when they face a similar situation again.

Among seven of the included studies, six potential predictors for work performance were reported among nurses. These predictors included high job demands, lack of job control, lack of social support, insufficient rewards, lack of skills and knowledge, and lack of recognition [3,5,19,31,35,40,46]. Some of these predictors, such as job demands, job control, and job resources (social support), were recognized in a recent non-experimental study among nurses working in SA publicly funded hospitals (n=380) [67]. However, different results have been reported in other studies regarding the relationship between job strain and work performance. High job strain was reported to lead to low work performance [5,31,35,40,46], and nurses with moderate levels of job strain perform better than do those with high or low levels of job strain [19].

Finally, a significant gap in the nursing literature appears to exist regarding job

strain, coping strategies, and work performance among oncology nurses, given that there are only two published studies addressing the relationship between job strain and coping strategies among oncology nurses from Portugal and Brazil [12,41]. This researcher has not found any study examining the relationships between job strain and work performance among oncology nurses. Only one published study examined the relationship between job strain, work performance, and intention to stay at work among nurses in one of the Middle-East counties (Jordan) [3]. Consequently, the relationship between coping strategies and work performance among oncology nurses remains unknown, given that the researcher was unable to find any published studies in this area. In addition, no study has been conducted about the above relationship in SA. Thus, future research is required to examine the effects of job strain and coping strategies on oncology nurses' health and work performance.

8. Nursing Implications

This review contributes to the body of knowledge regarding job strain, coping strategies, and work performance, and identifies knowledge gaps in the nursing literature. Our review indicated that there is a lack of knowledge about job strain and its influence on coping strategies and work performance in current oncology nurses. Although a small body of literature exists to explain the relationship between job strain and coping strategies in oncology nurses, little current research exists regarding oncology nurses within the Middle-East context to provide a distinct understanding of oncology nurses' work environments and interrelations of these variables of interest. Identifying the effects of job strain and making use of effective coping strategies (PFCSs) may play a crucial role in decreasing job strain and enhancing oncology nurses' work performance.

Findings from this review may also increase awareness among nurse managers and administrators about the impact of job-related stressors experienced by nurses, particularly oncology nurses, and the means that help to alleviate stressors in the workplace and promote healthy work environments. It is also important for nursing administrators/managers to understand why some nurses are coping effectively when facing stressful situations in the workplace while others are not. Findings may provide support for enhanced organizational coping resources, and development of programs to help nurses use effective coping strategies to stay mentally and physical well within today's healthcare environment. These strategies may be delivered at both the organizational and individual levels.

At the organizational level, attention to retention of existing nurses by reduction of job demands/work overload may be achieved by hiring new nurses to reduce nurse/patient loads, enhancing communication among healthcare professionals to reduce frustration in trying to gain clarity when transmitting information, providing support from nurse supervisors to nurses, and increasing rewards and recognition. Knowing job-related stressors that exist in healthcare settings and developing management strategies to decrease these stressors may be beneficial. At the individual level, providing in-service education and training for nurses through workshops, and counselling regarding job stress management can assist nursing staff to enhance their coping skills when dealing with stressful workplace situations.

Further qualitative and quantitative studies are needed to examine the interrelationships among job strain, coping strategies, and work performance among nurses across healthcare settings and countries, such as Middle-East countries. Future

nursing research studies are needed to discover the best coping strategies for each group of nurses (e.g. oncology nurses) in different healthcare settings. It is also be important to discover which coping strategies used by nurses lead to better work performance. Furthermore, since there were significant differences between the privately and publicly funded hospitals for all the concepts of interest in this review, more studies should be carried out to recognize the factors that might account for these differences. Future research could put emphasised on conducting a longitudinal research is to help draw stronger conclusions about causal relationships among various conceptual and demographic variables, such as age, educational background, and oncology nursing experience. Ideally, future experimental studies can be conducted to test workplace interventions.

9. Conclusions

This integrative review has highlighted the most common relationships between job-related stressors among nurses and their coping strategies to support their performance, and suggests that nurses who experience high levels of job strain in combination with higher levels of EFCSs will tend to have lower levels of work performance. Nurses reported a higher use of EFCSs when dealing with stressful situations in the workplace. Six significant predictors of work performance were found including: high job demands, lack of job control and social support, lack of skills and knowledge, insufficient rewards, and lack of recognition for professional competence. This information is important for nursing administrators/managers to increase their awareness about the contributing factors to job strain and their effects on nurses' work performance, and the need for successful strategies to build a healthy work environment.

However, evidence to support the relationships among job strain, coping strategies, and work performance in oncology nurses is extremely limited. Therefore, additional research is needed to expand the existing literature in this area. Evidence-based workplace interventions may help nurses better manage their job strain, increase positive coping resources, and enhance work performance.

Author contributions

All authors contributed to the development of this manuscript. All authors reviewed and approved final manuscript prior to submission.

Conflicts of interest

The authors declare that there are no conflicts of interest regarding the publication of this paper.

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工作压力与应对方式对护士工作绩效影响的整合性综述

Dhuha Youssef Wazqar, Mickey Kerr, Sandra Regan, Carole Orchard

【摘要】

护理工作压力很大，可导致身心健康问题和行为问题。随着癌症患者迅速增加和世界范围内的人力短缺，护士的工作量也在增加，保障高质量的肿瘤护士队伍至关重要。在工作压力、应对策略的影响以及护士在医疗环境中的工作绩效方面已经有大量研究，但很少有研究关注癌症照护机构的情况，且没有在沙特阿拉伯工作的护士的相关研究。这篇综述的目的是总结护士，特别是肿瘤科护士工作相关压力源的经验性和理论性的文献，以及他们的工作压力、应对策略和工作绩效之间的相互关系。搜索策略限定为 2004 年—2016 年发表在同行评议期刊的关于护士的研究。25 篇文献验证了这些概念之间的相互关系。肿瘤科护士常见的与工作相关的压力源包括工作要求高、处置死亡和临终患者、缺乏对工作的控制权以及工作中的人际冲突。通常工作压力与应对策略明显相关，并与护士工作绩效负相关。没有证据支持肿瘤科护士应对策略和工作绩效之间的关系。目前的证据有限，未来需要大量研究扩展肿瘤护理文献，探讨工作相关压力源及其对肿瘤科护士的影响。

【关键词】应对；工作压力；护士；综述；工作绩效

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