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Stress and ways of coping among nurse managers: An integrative review.

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Running Head: Stress and Coping among Nurse Managers

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Stress and ways of coping among nurse managers: an integrative review

Abstract

Aims and objectives: To appraise and synthesize empirical studies examining sources of occupational stress and ways of coping utilized by Nurse Managers (NMs) when dealing with stress.

Background: The Nurse Manager's role is challenging yet draining and stressful and has adverse consequences on an individual's overall health and well –being, patients' outcomes, and organizational productivity. Considerable research has been done; however, an updated and broader perspective on this critical organizational issue has not been performed.

Design: An integrative review.

Methods: Five databases (Cumulative Index to Nursing and Allied Health Literature, SCOPUS, PubMed, PsychINFO, and MEDLINE) were searched to identify relevant articles. Search terms and MeSH terms included: 'charge nurse', 'coping', 'coping strategy', 'coping style', 'psychological adaptation', 'psychological stress', 'stressors', 'nurse manager', and 'unit manager'. Twenty (22) articles were included in this review. Reporting followed the Preferred Reporting Items for Systematic Reviews and Meta-Analyses (PRISMA) statement guidelines.

Results: Four themes were identified: moderate stress levels, common sources of stress, ways of coping, and the impact of nurses' characteristics on stress.

Conclusions: Nurse Managers experienced moderate levels of stress mainly from heavy workloads, lack of resources, and financial responsibilities. Enhancing social support and promoting job control were seen as important in reducing work stress and its related consequences. Additional studies, using a more rigorous method and a larger sample size preferably in multi-cultural settings would shed more light on this topic.

Relevance to clinical practice: Hospital and nurse administrators play an important role in promoting supportive structures for daily professional practice for NMs through staffing, organizational resources, support services, leadership, and stress management training.

Keywords: charge nurse, coping, coping style, coping strategy, psychological adaptation, psychological stress, stressors, nurse manager, unit manager

What does this paper contribute to the wider global clinical community?

- Findings of this review has added new knowledge on the current psychological states in NMs which could potentially guide hospital administrators in the formulation and implementation of interventions to address stress as an important nursing management issue.
- Enhancing social support and promoting job control were seen as important in light of the various stressors that confronts NMs.
- Highlights the need for interventions aimed at developing job resources in NMs particularly in terms of job control and social support.

INTRODUCTION

Occupational stress remains as an important organizational issue confronting nursing professionals due to its adverse consequences on staff outcomes and patient safety. Nurse Managers (NMs) just like other staff nurses, are not immune and are susceptible to work related stress (Kath, Stichler, Ehrhart, & Sievers, 2013; Udod & Care 2011; Warshawsky & Havens 2014). Today's nurses' work environment is characterized by increasing healthcare complexity, poor staffing, ever changing patients' care needs, and the expanding role of NMs have contributed significantly to the stress experiences in NMs. Moreover, NMs have to deal with several personalities both in the upper and lower levels of management in the organization or unit with different perspectives and competing values (McSherry, Pearce, Grimwood, & McSherry, 2012; Pegram, Grainger, Sigsworth, & While, 2014).

Review of Literature

Nurse Managers are key players in the healthcare setting and play a tremendous role in creating a healthy work environment where nurses are able to provide quality and safe patient care while achieving organization goals and outcomes (McSherry et al., 2012). However, the current healthcare situation is alarming as many hospitals are besieged to recruit and retain NMs as a result of the global shortage of nurses which continuously poses a major threat to the hospitals' ability to sustain quality nursing care to patients and sustain staff outcomes. This situation is further aggravated by the increasing number of NMs who are leaving or intending to leave their current job due to occupational stress and burnout. In a study, involving 291 NMs working in the United States (US) acute care hospitals, about 62% reported planning to leave

their jobs within the next 2 to 5 years with stress and burnout as the primary reason (Warshawsky & Havens, 2014). Therefore, organizational efforts must be made to keep and maintain this vital nursing workforce.

Available evidence suggested that one in every six NMs experience occupational stress and burnout (Van Bogaert et al., 2014a) from various stressors such as role conflict, work/time pressure, job overload, role ambiguity, inadequate social support, inadequate leadership, and organizational constraints (Brown, Fraser, Wong, Muise, & Cummings, 2013; Kath et al., 2013; Udod & Care, 2011). Persistent exposure and failure to manage stress is associated with negative consequences on an individual such as fatigue, emotional exhaustion, work dissatisfaction, turnover intention, and poor mental health (McVivar, 2016). Persistent exposure to stress not only affects negatively the health of NMs, but also with their decision making process that may potentially affect staff, patients, and organizational outcomes (Shirey, Ebright, & Mc Daniel, 2013). Other studies linked work-stress with higher incidence of medical errors, adverse patient events and errors, low quality of patient care (North et al., 2013; O'Brien-Pallas, Murphy, Shamian, Li, & Hayes, 2010) and eventually their productivity (Hayes et al., 2012). Chronic stress in NMs may also have implications on how they effectively manage work environments for their subordinates in their units and sustain leadership within healthcare settings (Steege, Pinekenstein, Arsenault Knudsen, & Rainbow, 2017).

While there is evidence of growing literature on stress and coping among NMs around the globe, a wider perspective on this topic is scarce. To date, only one study was located synthesizing studies on stress and coping among NMs from 1980 to 2003 (Shirey, 2006).

Although the review of the findings by Shirley (2006) is enthralling, since then, several studies have been published. With the rapid advancement in the healthcare system and the expanding of the role NMs, an updated study synthesizing and appraising recent research studies on this topic is critical. Such perspective is vital to fully understand these experiences among NMs and to formulation scientifically tested interventions to reduce stress and enhance coping. Nursing administration must take into consideration that NMs are not created when they graduate from any level of nursing education programs. NMs need to grow in the organization and additionally be mentored in their specific roles to be effective for the unit and overall healthcare facility. Therefore, this review is a vital step in the development and implementation of interventions and strategies to reduce or prevent stress among NMs and to enhance their positive coping mechanisms

AIMS

This is an integrative review which critically appraised and synthesized empirical studies examining sources of occupational stress and ways of coping utilized by NMs when dealing with stress. Further, this review identified gaps in the existing literature to inform and determine future research.

METHODS

Design

An integrative review of the literature was undertaken. This review method is considered as the broadest research review method as it allows for inclusion and synthesis of research with

varying methodologies to facilitate understanding of research topics relevant to nursing and healthcare and to identify gaps in the research (Whittemore & Knalf, 2005). The review analysis method included a rigorous and a systematic approach of the process such as (1) identification of the problem, (2) systematic search of literature, (3) comprehensive examination or evaluation of data, (4) data analysis, and (5) data presentation. Reporting followed the PRISMA (Preferred Reporting Items for Systematic Reviews and Meta-Analyses) statement guidelines (Moher, Liberati, Tetzloff, & Altman, 2009).

Search Strategy

Six bibliographic electronic databases were searched to obtain relevant studies such as: CINAHL, Medline, Psych Info, ERIC, Embase and SCOPUS. A database search was performed in December 2016 to locate studies published from 2000 onwards. Search terms and MeSH terms included: 'charge nurse', 'coping', 'coping strategy', 'coping style', 'psychological adaptation', 'psychological stress', 'stressors', 'nurse manager', and 'unit manager'. Further, manual searching of publications through reference lists were carried out to identify additional sources. Figure I shows the PRISMA flow diagram utilized in searching and selection of the relevant literature.

Search Criteria

Articles were selected based on the following inclusion criteria: (1) peer-reviewed publications of original research examining stress and coping among NMs, (2) had been published from 2000 onwards, (3) and written in the English language. In this review, Nurse Manager is defined as

licensed nurses holding the title of a unit manager, ward manager, first line nurse managers, charge nurse, or ward sister, and are in charge of at least one patient care unit. Nurse executives and nurse directors were excluded in this study as they have limited contact with staff nurses within the ward or unit.

Search Outcome

The initial search yielded three hundred one (301) papers. Article titles and abstracts were screened and matched against the inclusion criteria resulting in one hundred two (102) studies. After examining the methodological quality of the articles, twenty two (22) were identified to be relevant to the review.

Methodological Quality Appraisal and Level of Evidence

To appraise the methodological quality of the quantitative and qualitative articles included in the review, the authors utilized the QualSysts, a systematic review tool developed by Kmet, Lee, & Cook (2004). The tool incorporates two scoring systems (for quantitative and qualitative studies) to systematically assess the quality of research encompassing a broad range of study designs and consisted of 10 indicators in which a score of zero (0) to two (2) were assigned. The quality of quantitative primary articles were appraised by evaluating its research questions or objectives, research design, connection to a theoretical framework, methods, subjects and subject selection, appropriateness of sample size, analytical method or data analysis, presence of estimate variances in the outcomes, and appropriateness of conclusions. The quality of qualitative studies were determined by its research questions or objectives, appropriateness of

research design, description of the study context, connection to a theoretical framework, sampling strategy, data collection method, description of the analytical method, use of verification procedure, conclusions, and reflexivity of the account.

Finally, the hierarchy of evidence developed by Melnyk, Fineout-Overholt, Stetler, Allan (2005) was used to determine the level of evidence for each study. The hierarchy of evidence is categorized into seven levels: Level I (evidence from systematic reviews or meta-analysis of relevant clinical trials), Level II (evidence derived from at least one well-delineated randomized controlled trial), Level III (well-delineated clinical trials without randomization), level IV (well-delineated cohort and case-control studies), Level V (systematic reviews of descriptive and qualitative studies), Level VI (evidence derived from a single descriptive or qualitative study), and Level VII (the opinions of authorities or report of expert committees).

Data Extraction and Synthesis

Following quality appraisal, data extraction was performed by the first and second author (LJL and DMP) who are specialized in the field of nursing administration and management. The following variables were extracted from each article: (1) authors, (2) research design, (3) samples/response rate, (4) instruments, (5) key findings, (6) country, and (7) quality score/level of evidence (Table 1).

A thematic analysis approach to data synthesis was adopted following the technique used by Braun and Clarke (2006). A systematic approach, consisting of six steps were undertaken: familiarization of data, generating initial codes, searching for themes, reviewing themes, defining and naming themes, and producing the report of the analysis. The overarching

themes were discussed, reviewed and agreed by all members of the research team. Discussions were conducted between the authors to come to a consensus on the most suitable structure and names for the themes.

RESULTS

Study Characteristics

Twenty two (22) studies published from 2000 and beyond were included in this review. Twelve (54%) studies used a quantitative design and the remaining studies (45%) with a qualitative design. About 50% of the studies were conducted in the US (n=5, 24%) and Canada (n=6, 29%), and the remaining studies were from various countries including Belgium, Sweden, China, United Arab Emirates, Japan, and the United Kingdom. One study was conducted in three countries: Israel, US, and Thailand (Admi & Eilonw-Moshe, 2016). The sample sizes ranged from 5 to 2616 with a response rate that ranged from 26% to 97.4%.

In the quantitative studies, a variety of scales were used to measure stress. In the qualitative inquiries, data were collected through in-depth questioning, semi structured interviews, telephone interviews, and focus group interviews. In this review, more than 50% of the studies had no reliability details and did not report validity information. In studies reporting reliability, Cronbach's alpha ranged from 0.46 to 0.98 (see table 1 and 2 for the characteristics of studies included).

Participants Characteristics

In the studies reporting participant age range, the average age was between 31 and 62 years old. The average work experience as a nurse manager ranged from 1 to 11.8 years. Sampled nurses worked from various health care settings such as acute secondary hospitals, university hospitals, general hospitals, elderly and long term care facilities.

Methodological Quality Score and Level of Evidence

Using the QualSysts, the quality score of quantitative studies in this review ranged from 85% to 100% and 85% to 95% for qualitative studies of a possible score of 100% (see Table 1). Most quantitative studies showed limitations with regards to sampling size, inadequacy of variance estimates in the outcomes, and incomplete description of subject selection. For the qualitative studies, common issues were lack of philosophical underpinning and reflexivity in the study report. In this review, quality scores were not used to exclude studies. Regarding the level of evidence, all studies were of low quality (level of evidence VI).

Themes

Four themes were identified in the review: moderate stress levels, common sources of stress, ways of coping, and the impact of nurses' characteristics on stress. Further, based on the thematic analysis, we identified the taxonomy of stressors and coping styles among NMs including examples of concepts under each domain (see table 3).

Levels Stress in NMs

Four studies reported levels of stress in NMs (Admi & Eilon-Moshe 2016; Judkins Massey, & Huff, 2006; Kath, Stichler, Ehrhart, & Sievers, 2013; Kath, Stichler, Ehrhart, & Schultze, 2013). Using the Charge Nurse Stress Questionnaire (CNSQ), stress levels in NMs from three countries (Thailand, Israel, and USA) were compared. The mean stress level of all samples were 2.84 indicating moderate levels of stress; however, when countries were compared individually, significantly higher stress levels were found in Thai charge nurses (m=2.96, SD=0.67) and low in Israeli nurses (m=3.32, SD=0.70) (Admi & Eilon-Moshe, 2016). Work experience and higher academic education in the Israeli samples than Thai were seen as important in explaining these variations. In the US, Judkins et al., (2006), examined stress levels in 16 NMs working in large tertiary hospitals using the Perceived Stress Scale (PSS). The mean PSS score was 33.1 (SD=3.9) out of a possible mean score of 56 indicating moderate stress levels. Similar findings were seen in two separate studies by Kath et al., (2013a; 2013b). Kath et al., (2013a) examined job stress levels in NMs who were members of the Association of Women's Health, Obstetrics and Neonatal Nursing (AWHONN) using the Subjective Stress Scale (SSS) through an online survey. The mean SSS score was 3.66 (SD = 0.85) in a scale of 1 to 5 suggesting moderate levels of subjective stress. Similarly, a moderate stress levels were obtained in one study involving 480 NMs from 36 acute care hospitals in the US (Kath et al., 2013b).

Sources of Stress

Job Demand

Several studies (59%) identified higher job demands and heavy workloads as being important in explaining stress experience in NMs (Admi & Eilon-Moshe, 2016; Adriaenssens, Hamelink, & Van Bogaert, 2017; Akkela & Leca, 2015; Hagerman, Engström, Häggström, Wadensten, & Skytt, 2015; Hewko, Brown, Fraser, Wong, & Cummings, 2015;Kath et al., 2013a; 2013b; Kelly, Lankshear, & Jones, 2016; Luan, Wang, Hou, Chen, & Lou, 2017; Miyata, Arai, & Suga, 2015; Shirey, McDaniel, Ebright, Fisher, & Doebbeling, 2010; Van Bogaert et al., 2014b; Xianyu & Lambert, 2006). Out these studies, five utilized a cross-sectional design using validated scales. For instance, in two separate studies conducted in China, NMs identified several factors that caused significant stress; workload problems were rated highest among the different stressors followed by time allocation, and dealing with physicians (Luan et al., 2017; Xianyu & Lambert, 2006). Kath et al., (2013a, 2013b) examined individual and work environment factors that contributed to stress experience in NMs in the US using the Job Stress Scale (JSS). Work overload explained for 13% of the variance in the JSS. Other factors that predicted stress in NMs were organizational constraints, role conflict, and role ambiguity. Using a researcher-designed scale, Hewko et al., (2015) surveyed 95 NMs from different healthcare facilities in Canada to assess factors that contributed to their turnover intentions and psychological distress, finding work overload, imbalance in work-life, lack of resources, and lack of recognition as main contributors.

Similarly, 'heavy workloads' as the main source of stress in NMs were also observed in three (3) studies utilizing a qualitative approach. For example, Akkela & Leca (2015) explored work-related stress in Romanian NMs working in selected hospitals in United Arab Emirates using a hermeneutic phenomenological approach. Nurse Managers reported being stressed mainly from heavy workloads followed by the organizational environment, dealing with staff, and the country itself. In Japan, Miyata et al., (2015) conducted a semi-structured interview in 15 NMs to determine their sources of stress and coping strategies. Three common sources of stress were identified: work overload that accompanied their position, the responsibility of managing of unit related issues and problems, and dealing with organizational and staff expectations and demands. Similar finding was noted in one study in the United Kingdom (Kelly et al., 2016). Stress originated mainly from workloads along with dealing with patient complaints, managing crisis situations, and service relocation.

In a study, including 21 NMs from US acute care hospitals, NMs reported a significant amount of stress as a consequence of higher responsibilities relative to their role and other issues and concerns that arise in the performance of this role (Shirey et al., 2010). In two separate studies in Belgium, an increase in job demands inherent from their role as NMs along with significant workloads, time pressures and lower decision authorities explained significant variances in the psychological stress levels in NMs (Adriaenssens et al., 2017; Van Bogaert et al. 2014b). In addition, not being able to handle organizational responsibilities and heavy administrative workloads caused significant stress in NMs as it significantly affected their core work responsibilities in the nursing unit (Hagerman et al. 2015). A similar finding was found in

Thai nurses where job demands contributed to their high stress perceptions (Admi & Eilon-Moshe, 2016).

Resources Management

Five studies reported a lack of or inadequate resources as the main source of stress in NMs (Admi & Eilon-Moshe, 2016; Hewko et al., 2015; Udod & Dean Care, 2012; Udod et al., 2017; Udod, Cummings, Care, & Jenkins, 2017). For instance, Udod & Dean Care (2012) identified a lack of qualified staff to meet quality patient care as one of the top stressors among NMs. In a cross-country, comparative study, US and Israeli NMs rated a 'lack of resources' as the top leading stressor with means of 2.92 and 2.77 respectively (Admi & Eilon-Moshe, 2016). Three qualitative studies yielded similar findings. A web survey in Canada reported higher turnover intention, lower job satisfaction, and higher stress levels in NMs as a consequence of frequent exposure to stress-inducing situations such as inadequate human/fiscal resources, heavy workloads, and an insufficient ability to ensure providing of quality care (Hewko et al., 2015). In two recent studies in Canada, the majority of sampled NMs identified working with inadequate financial and human resources in their daily unit operation to manage patient care as their top source of stress (Udod et al., 2017a; Udod et al., (2017b).

Financial Management

Few studies reported issues related to organizational budget or finances as the main source of their stress (Hagerman et al., 2015; Kelly et al., 2016; Udod & Dean Care, 2012). For example, in Sweden, NMs reported having full responsibility of their unit's budget yet they were excluded

in the budgeting process. In addition, NMs were often pressured to remain within the allocated budget despite the increase in the number of patient care needs (Hagerman et al., 2015). A major stressor identified in a qualitative study by Udod & Dean Care (2012) were concerned mainly with the financial management. All NMs reported having trouble understanding the budgeting process and financial management which often lead to difficulty in formulating financial decisions for the unit. In one study in the UK, NMs had to deal with staffing problems and limited resources which undermined the quality of patient care due to fiscal austerity as a consequence of long standing financial crisis in the country (Kelly et al., 2016).

Ways of Coping

Decision Latitude or Control

In four studies, higher job control or decision authorities were associated with lesser occupational stress and higher occupational well-being in NMs (Adriaenssens et al., 2017; Johansson, Sandahl, & Hasson, 2013; Kath, Stichler, & Ehrhart, 2012; Van Bogaert et al., 2014b). Adriaenssens et al., (2017) examined predictors of work-related stress and occupational well-being in four hundred eighty one (481) Belgian NMs. Decision authority explained 9% of the variance in psychosomatic distress indicating lesser occupational stress in NMs who had adequate decision making authority. A study by Van Bogaert et al., (2014b) yielded similar findings. Work-related characteristics such as lower work/time pressure and higher perceptions of decision authority were associated with lesser work stress and turnover intention, higher work engagement, and higher job satisfactions in NMs. In a study, including 64 first line NMs at

a university hospital in Sweden, 81% reported having control over the tasks they were performing. Such higher levels of job control led to significant reduction in the effects of the stressful work environment in NMs (Johansson et al., 2013). In the US, decision authority moderated the negative effects of subjective stress on job satisfaction, turnover intention, and mental health in NMs. Nurse Managers who had high stress and high levels of decision authority demonstrated positive outcomes. These findings suggest that it is important to encouraged hospital administrators to develop empirically tested strategies to increase decision authority in NMs (Kath et al., 2013a).

Organizational Support

A number of returned papers examined coping strategies employed by NM to mitigate and manage stress effectively. Of the twenty two studies reviewed, seven reported the use of 'intra-organizational support' as the most frequently utilized coping method in NMs (Adriaenssens et al., 2017; Kelly et al., 2016; Miyata et al., 2015; Udod & Dean Care, 2012; Udod et al., 2017a; 2017b; Van Bogaert et al. 2014b). In a study involving 318 first line nurse managers, a perception of social support from other staff contributed to their lower levels of occupational stress and the intent to leave the organization (Adriaenssens et al., 2017). In one study, increased social support from supervisors and staff were strongly linked with increased job engagement, job satisfaction, lower turnover intentions, and work stress (Van Bogaert et al., 2014b).

Similar findings were observed in the qualitative studies that were reviewed. In a semi-structured interview in 15 NMs from five hospitals in Japan, three coping strategies were identified by the respondents. Sufficient support from other staff, from their administrators, and nursing directors were cited as critical to mitigate and manage stress at work followed by taking mental breaks and implementing individual coping strategies (Miyata et al., 2015). In a grounded constructivist study by Kelly et al., (2016), involving 40 NMs from different healthcare settings, intra-organizational support, that is support from the chief executive and medical director, and access or support from a trusted colleague were cited as important sources of support to cope and maintain resilience against stress. Qualitative inquiries in Canada yielded similar findings where support from top and lower management were cited as one of the top coping strategies employed to deal with stressors (Udod & Dean Care, 2012; Udod et al., 2017a; 2017b).

Impact of nurses' characteristics on stress

Few studies examined the relations of NM's stress experience with their demographics and other constructs such as work satisfaction, organizational commitment, health status, and job burnout. In a multi-country study by Admi and Eilon-Moshe (2016), younger Israeli nurses with fewer years of work experience as charge nurses had significantly higher stress than those with experienced nurses ($p<0.01$) with longer experience as charge nurses ($p<0.01$). In Thai and the US samples, higher stress levels were found in nurses with 6 to 10 years of charge nurse experience. In addition, Thai charge nurses having Diploma degrees experienced significantly higher stress levels than those with Bachelor of Science (BS) or Master's degree ($p<0.0001$).

Both Xianyu and Lambert (2006) and Admi and Eilon-Moshe (2016) found that an increase in nurses' ages decreased stress levels, while Jamal and Baba (2000) found higher stress levels in female nurses when compared to male nurses. Conversely, in some studies, personal variables such as monthly income, number in the household, years or experience as NMs (Kath et al., 2013a; Xianyu & Lambert, 2006), and gender (Admi &Eilon-Moshe, 2016) did not yield significant contributions to their stress experiences.

DISCUSSION

Future Research Directions

This systematic review appraised and synthesized available evidence examining sources of occupational stress and ways of coping utilized in NMs. A total of 22 studies consisting of 12 quantitative studies and 10 qualitative studies informed our findings. While we found some evidence demonstrating considerable stress levels in NMs, caution should be observed when interpreting the review findings due to absence of high quality evidence for review. Methodological limitations such as lack of statistical power, inadequacy of variance estimates in the outcomes, presence of confounding factors, lack of philosophical underpinning, and lack of reflexivity in the study report some studies reviewed may threaten the credibility, reliability, and trustworthiness of the review findings.

Although most studies were conducted from different countries, the majority of the studies were conducted in western countries and all but one (Admi & Eilon-Moshe 2016) considered the cultural background of each study when interpreting the findings. Few studies suggested

that the meaning of job control and social support varied according to countries and cultures (Ibrahim & Ohtsuka, 2014; Verhoeven, Maes, Kraaij, & Joekes, 2003) therefore, more research is needed to further validate how culture influences stress experiences and coping mechanisms in NMs.

Several gaps in the research methodology were identified in this review that may affect the generalization, comparison, validity, and reliability of findings. An important aspect that warrants attention in this review was the utilization of diverse scales used for data collection across the studies. In addition, some instruments used, although validated, were not specific assessing stress and coping in NMs. Psychometric properties of the instruments used were seldom reported in many studies appraised. Since, reliability and validity of the scales are critical issues in the use of measurements as it reflect the extent to which an instrument measures the construct of interest (Bennett, 1993), this may have had an effect on the reliability and generalization of the review findings. Further, among quantitative studies, only one study (Luan et al., 2017) conducted power analysis to determine the sample size, and in the remaining studies, convenience samplings were employed. These factors, when considered may give a different perspective about the subjects (stress and coping) being studied and may affect the review outcomes.

Of great concern was that all of the studies reviewed utilized a cross-sectional research design. Folkman and Lazarus, (1988) argued that stress and coping evolved overtime as a consequence of individual adaptation. The fact that 50% of the studies in the review were

cross-sectional warrants further research using a longitudinal design to track changes in the stress and coping across time.

Stress and coping are profoundly affected by the number of factors such as individual characteristics, individual resources, value system, personality, support system, and environmental or organizational context (Edwards, 1989; Persike & Seiffge-Krenke, 2016). These factors may guide in the selection of appropriate strategies to help reduce stress and enhance coping among NMs; however, in the current review, only very few studies considered these factors. Moreover, findings of this review showed that only one study (Luan et al., 2017) was conducted examining how coping skills reduced stress in NMs.

Review Findings

Despite the varying scales used to identify stress and coping in NMs, a common finding among articles reviewed is the perceptions of moderate levels of stress among NMs. Specifically, NMs experienced higher job demands mainly from heavy workloads, low decision authority, inadequate resources, and financial responsibilities. Further, a higher job control in terms of decision authority was associated with lower psychological distress. Nurse Managers play a pivotal role in the healthcare organization in the provision of high quality care and in the achievement of organization outcomes (McSherry et al., 2012). In addition, NMs are directly involved in a wide range of activities in the units from directing nursing activities of staff nurses to complex administrative functions (McSherry et al., 2012; Shirey, 2006). Nurse Managers are also actively engaged in dealing with higher and lower management managers (McSherry et al., 2012; Pegram et al., 2014). These tasks are daunting and could be potential sources of stress.

The findings corroborated with those in the previous studies and have theoretical implications. First the findings of this review are in agreement with previous studies associating the lack of manpower and material resources, heavy workloads, performance expectations, higher work/time pressure, low job control, low perceptions of social support, role conflict, and role meaningfulness to NMs perceptions of stress (Kath et al., 2012; Shirey et al., 2010; Van Bogaert et al., 2014a). Secondly, evidence linking to decision authority and occupational stress was thus confirmed and supports the Demand-Control Support (DCS) Model.

Based on the DCS Model, persistent exposure to high job demands such heavy workloads, inadequate resources, and financial responsibilities could potentially harm the health and well-being of an individual and the organization; however, adequate job resources such as job control (decision authority) can serve as a buffer to counter the negative effects of high demand (Aronsson et al., 2017; Hessels, Rietveld, & van der Zwan, 2017; Schaufeli, Bakker, & Van Rhenen, 2009). Hospital administrators may consider this model in formulating interventions aimed at preventing occupational stress by strengthening and enhancing job control among NMs.

It can be gleaned from this review that NMs utilized positive coping strategy mainly from social support (from staff and superiors). According to Folkman & Lazarus (1988), the use of social support as a way of coping with stress is an effective means of dealing with stress as it targets the cause of stress thus offering long-term stress relief. It is strongly linked with positive health outcomes in an individual. Additionally, in the DCS Model, adequate social support is considered to be an important job resource along with job control as it moderates

the negative impact of high job demands on stress reactions by interacting with job stressors (Karasek & Theorell, 1990). Mounting evidence showed that social support from supervisors and co-workers are good predictors of occupational stress in the nursing population (Blanco-Donoso, Garrosa, Demerouti, & Moreno-Jiménez, 2017; Schaufeli et al., 2009). Adequate social support is also linked to lower depressive symptoms, lower turnover intentions and has the potential to enhance employee competence and professional growth (Saijo et al., 2016). Interventions aimed at reducing work related stress in NMs should be directed towards strengthening social support, thus reducing stress and enhancing their overall health (Schaufeli et al., 2009).

CONCLUSION

Findings of this integrative review added new knowledge on the current psychological states in NMs which could potentially guide hospital administrators in the formulation and implementation of interventions to address this important nursing management issue. It can be inferred from this review that NMs experience moderate levels of stress mainly from heavy workloads, lack of resources, and financial responsibilities. Enhancing social support and promoting job control were seen as important in light of the various stressors that confronts NMs. However, further studies, preferably in multi-cultural settings, using a more rigorous method and larger sample size would shed more lights on this topic. The need for the development of a unified survey tool that can adequately evaluate stress and coping in NMs may be necessary.

RELEVANCE TO CLINICAL PRACTICE

Measures to manage stress and enhance coping in NMs are of paramount importance in light with the tremendous role NMs play in fostering the work environment that enables nurses to work efficiently in order to achieve positive outcomes in patients and the organization. The suggested taxonomy of stressors and coping styles in this review may guide hospital and nursing administrators in formulating empirically tested strategies to reduce and prevents stress and enhance coping in NMs.

As heavy workloads were cited as the leading cause of stress, workloads of NMs needs to be revisited and possibly reduced. For instance, core functions of the NMs such as direct clinical supervision of their staff and provision of staff support may be enhanced by reducing administrative functions. The addition of "charge nurses" on each shift with managerial responsibilities for the day to day running of the unit for the shift assigned, may be helpful. This could also include such areas as personnel evaluations, mentoring of staff members, and assisting with financial measures. In addition, assigning of staff nurses to such areas as quality improvement data collection, follow-up phone calls post discharge, placing of staff nurses and other ancillary staff on various committees such as new products, performance improvement, and a safety committee, may not only assist with lessening the workloads of both the NMs and charge nurses, but also allow those who participate in these committees or tasks, become "valued for their contributions" to the unit and overall the healthcare facility.

Provision of relevant trainings for NMs to enhance career planning skills, leadership skills, financial and budgeting skills, and decisions making skills may better prepared them for

their role and deal effectively with various organizational stressors in the workplace. Involving NMs in budgeting and strategic planning processes in the unit may promote culture of shared accountability and decision making. The NMs should be specifically involved in the day to day staffing of the unit, purchases, and future budgetary needs of the unit must be considered.

The reviewed findings also highlight the need for interventions aimed at developing job resources in NMs particularly in terms of job control and social support. This can be achieved through positive working relationships, staffing adequacy, higher job autonomy, and adequate organizational support services (Aiken et al., 2011; Laschinger, Nosko, Wilk, & Finegan, 2014; Purdy, Spence, Finegan, Kerr, & Olivera. 2010). Critical in creating a work environment for NMs is a strong nursing and hospital leadership that supports daily professional practice and well-being in NMs (Von Bogaert et al., 2014a; Van Bogaert et al., 2014b). In addition, hospital and nurse leaders play an important role in promoting supportive structures for daily professional practice in NMs. Stress management programs are critical to prevent the physiological and psychological consequences of stress in an individual and will ultimately improve the quality of patient outcomes.

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Figure 1. PRISMA flow diagram utilized in identifying references for the review

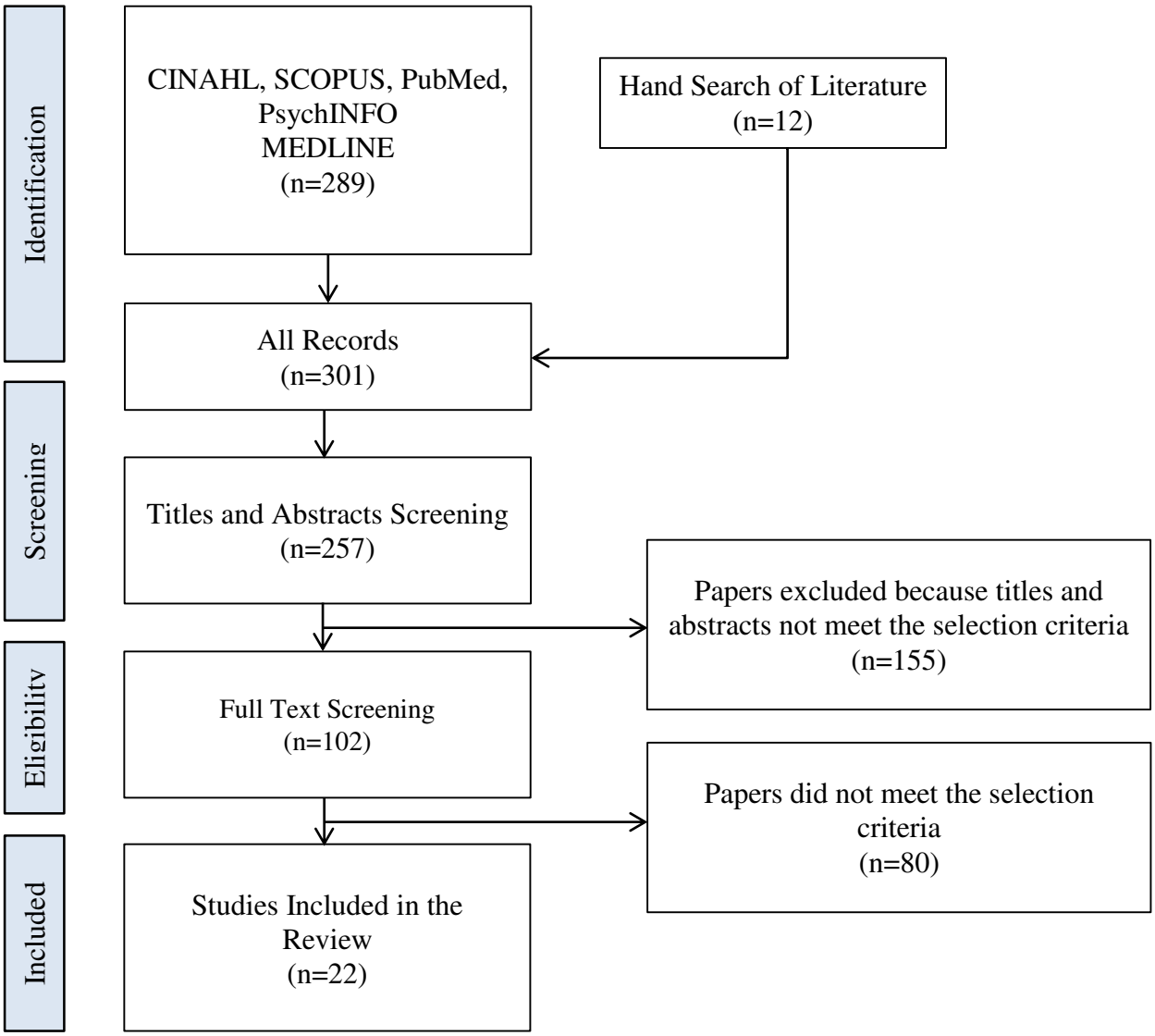

Table 1. Summary of quantitative studies on NMs Stress and Coping

Authors	Research Design	Samples/Response Rate	Instruments	Key Findings	Country	Quality Score/Level of Evidence
1. Adriaenssens et al. (2017)	Cross-sectional Design	N = 318 nurse managers Response Rate = 66.1%	Brief Symptom Inventory (De Beurs & Zitman, 2005) Cronbach's alpha = 0.85	▪ Job demands explained 8% of variance with better-perceived work/time pressure related to lower levels of psychosomatic distress. ▪ A more positive perception of decision authority was related to less psychosomatic distress. ▪ A positive perception of social support from the staff members was found to be predictive of lower levels of psychosomatic distress.	Belgium	100%/Level VI
2. Admi & Eilon-Moshe (2016)	Cross-sectional Design	N = 2616 charge nurses Response Rate = 26% to 83%	Charge Nurse Stress Questionnaire (Admi & Moshe-Eilon 2010) Cronbach's alpha = 0.46 to 0.84	▪ Mean stress level of the total sample was 2.84 implying moderate level of stress. Thai charge nurses had higher stress levels and the Israelis had lower stress. ▪ Responsibility burden contributed to higher stress in Thai nurses, while lack of resources was the leading stressor in US and Israeli samples. ▪ Stress levels decrease with age and experience in Israel and Thailand. ▪ Higher stress was found among nurses with 6 to 10 years of experience in US samples. ▪ Higher stress was found among younger nurses with 6 to 10 years of experience in Thailand.	Israel, USA, Thailand	95%/Level VI
3. Jamal & Baba (2000)	Cross sectional Design	N = 67 nurse manager,/173 nurses Response rate=89%	Job Stress Scale (Parker and De Cotiis 1983) Cronbach's alpha = 0.85	▪ Job stress correlated with overall burnout and its three dimensions among managers and nurses. ▪ Female nurses with high job stress experienced more health problems than male nurses in similar situations. ▪ Job stress significantly negatively correlated with job satisfaction organizational commitment in the nursing samples. ▪ Job stress was significantly positively correlated with	Canada	90%/Level VI

				psychosomatic health problems in the nursing sample,		
4. Johansson et al. (2013)	Cross-sectional Design	N= 64 first line managers/908 nurses	Webb-Questionnaire for Psychological and Social Factors at Work (Hasson et al. 2006) Cronbach's alpha = 0.73 to 0.84	▪ Approximately 10–15% of first line managers and nurses reported signs of being at risk for stress-related ill health. ▪ 6% of the first line manager reported that they felt sad or distressed about their job most or all of the time. ▪ First line managers reported being able to cope with these demands without a greater risk of stress-related symptoms. ▪ Both samples reported that they could handle job stress effectively.	Sweden	95%/Level VI
5. Judkins et al. (2006)	Cross-sectional Design	N = 16 nurse managers	Perceived Stress Scale (PSS) (Cohen et al. 1983) Cronbach's alpha = 0.53	▪ NMs reported moderate to high stress levels. ▪ NMs Managers reporting low stress used 35% fewer sick hours than their low-hardiness, low stress counterparts. ▪ NMs reporting high hardiness and high stress used 57% fewer sick hours than those reporting low hardiness and low stress. ▪ NMs reporting high hardiness and high stress used 33% fewer sick hours than the high hardiness and low stress group.	USA	85%/Level VI
6. Hewko et al. (2015)	Cross-sectional Design	N = 95 nurse managers Response rate=33%	Researcher designed-tool	▪ Common stressors were: work overload or work–life balance inability to ensure quality patient care, insufficient resources, and lack of empowerment and recognition.	Canada	90%/Level VI
7. Kath et al. (2013a)	Cross-sectional Design/Online survey	N = 392 nurse managers	Stress in General Scale (Stanton et al. 2001) Subjective Stress Scale (Motowidlo et al.1986) Cronbach's alpha not reported	▪ Mean score was 3.66 indicating moderate levels of subjective stress ▪ Role overload, organizational constraints, and role ambiguity were the best predictors of stress. ▪ Personal variables did not predict stress. ▪ Nurse leaders who were stressed but reported higher autonomy experienced higher job satisfaction, higher organizational commitment, and fewer mental health symptoms.	USA	95%/Level VI
8. Kath et al. (2013b)	Cross-sectional Design	N= 480 nurse managers	Subjective Stress Scale (Motowidlo et al.	▪ Job stress mean was 3.66 suggesting moderate stress levels. ▪ Role overload, organizational constraints, and role conflict	USA	95%/Level VI

		Response rate= 75.5%	1986). Cronbach's alpha = 0.75	predicted job stress in NMs. ▪ Organizational constraint and role conflict accounted 7% and 6% of the variance in stress scale.		
9. Kath et al. (2012)	Cross-sectional Design	N = 393 nurse managers Response rate = 9.8%	Stress in General (SIG) Scale (Stanton et al. 2001) Cronbach's alpha = not reported	▪ NMs reported high levels of stress, although stress decreased with age. ▪ Autonomy was the most effective buffer, followed by social support and predictability.	USA	95%Level VI
10. Luan et al. (2017)	Comparative design Cross-sectional Design	N = 79 head nurses and 145 senior nurses Response Rate = 97.4%	Nurse Job Stressors Inventory Scale (Li & Liu 2000) Cronbach's alpha = 0.98	▪ Job stress rate for senior nurses was higher than for head nurses. ▪ Time allocation and workload problems rated highest for both groups among the subscales. ▪ Job stress correlated positively with burnout.	China	85%/Level VI
11. Van Bogaert et al. (2014)	Cross-sectional Design	N=540 nurse managers Response Rate = 68%	Brief Symptom Inventory (De Beurs & Zitman 2005). Cronbach's alpha = 0.89	▪ Job characteristics were related to work stress in nursing unit managers. ▪ Work/time pressure, decision authority and social support were found to nursing unit managers' work related stress and well-being as hypothesized.	Belgium	100%/Level VI
12. Xianyu & Lambert (2006)	Cross-sectional Design	▪ N = 92 nurse managers	Nursing Stress Scale (Gray-Toft & Anderson 1981) Cronbach's alpha = 0.843	▪ Sources of stress were from workload, death/dying and conflict with physician. ▪ Coping strategies were from positive reappraisal, planful problem solving, and self-control. ▪ Age correlated negatively with workplace stress.	China	90%/Level VI

Table 2. Summary of qualitative studies on NMs Stress and Coping

Authors	Research Design	Samples/Response Rate	Instruments	Key Findings	Country	Quality Score/Level of Evidence
13. Akkela & Leca (2015)	Hermeneutic Phenomenological Approach	N = 10 nurse managers	In-depth, semi structured, face to face interview	▪ Sources of stress originate from: organizational environment, heavy workload, interpersonal relationships, and the place itself.	UAE	85%/Level VI
14. Hagerman et al. (2015)	Qualitative Design	N =14 nurse managers	Content Analysis	▪ Sources of stress were: not having a balance between their perceived responsibilities, structural conditions and the organizational demands, budget responsibility and conflicts of interest, and organizational politics.	Sweden	90%/Level VI
15. Miyata et al. (2015)	Qualitative Exploratory Descriptive Design	N = 15 nurse managers	Semi-structured interviews	▪ Three descriptive themes related to nurse managers' stressors were identified: (1) role overload, (2) loneliness, and (3) role conflict. ▪ Ways of coping with stress included: sufficient support and advice, taking mental breaks when off duty (awareness of the importance of taking time off recognizing physical symptoms such as fatigue, and use of individual coping strategies.	Japan	85%/Level VI
16. Kelly et al. (2016)	Grounded Constructivist Study	N = 40 nurse managers	Semi-structured telephone interviews	▪ Chronic stressors included workload, financial pressures, unclear role boundaries, lack of corporateness and feelings of vulnerability. Acute stressors listed by respondents included patient complaints or unexpected evidence of sub-optimal care, crisis situations and service relocation. ▪ Strategies to maintain resilience included: personal factors, intra-organizational support systems, and external relationships.	UK	95%/Level VI
17. Keys (2014)	Qualitative Design	N = 16 generation x nurse managers	Semi-structured interviews	▪ Stress were from inflexible organizational cultures, a lack of opportunities for upward mobility, the need to be available at all times and feeling stereotyped or undervalued.	USA	90%/Level VI
18. Shirey et al. (2010)	Qualitative Descriptive Design	N= 21 nurse managers	Content Analysis	▪ Sources of stress fell into 2 categories: issues related to actual nurse manager work (specific responsibilities related to the role)	USA	95%/Level VI

				and issues surrounding nurse manager work (peripheral issues that arise in the role). ▪ NMs used a combination of both emotion-focused (those strategies dealing with negative emotions) and problem-focused (those strategies for solving specific stress-related problems) strategies. ▪ Health related outcomes of stress were: feeling overwhelmed, heightened sense of awareness		
19. Udod & Dean Care (2011)	Qualitative Design	N = 5 nurse managers	In-depth Questioning	▪ Common stressors were: financial responsibilities, inadequate human resources, managing others, interpersonal distress, middle management roles, and competing priorities. ▪ Main coping ways were: peer and supervisor support, cognitive coping strategies, and social and personal strategies.	Canada	90%/Level VI
20. Udod & Dean Care (2013)	Qualitative Design	N = 5 nurse managers	Content Analysis	▪ Six descriptive themes emerged from identified stressors: fiscal responsibilities, inadequate human resources, managing others, intrapersonal distress, middle management role and competing priorities. ▪ Three descriptive themes emerged from coping strategies: peer and superior support, cognitive coping strategies and social and personal strategies.	Canada	90%/Level VI
21. Udod et al. (2017a)	Qualitative Exploratory Inquiry	N= 17 nurse managers	Semi-Structured Interview, FGD	▪ Common stressors reported were categorized into themes: working with limited resources, responding to organizational change, putting out fires, senior management's disconnection, adhering to regulations and standards, and being pulled in different directions. ▪ Coping strategies utilized were: planful problem solving, reframing situations, and having social support from all directions.	Canada	95%/Level VI
22. Udod et al. (2017b)	Qualitative Exploratory Inquiry	N= 23 nurse managers	Individual Interviews, FGD	▪ Sources of stress were from working with limited resources, responding to continuous change within organizational work complexities, and senior management's disconnection from practice.	Canada	85%/Level VI

				▪ Ways of coping included: planful problem solving, reframing situations, and having social support.		

Table 3. Taxonomy of stressors and coping styles among NMs

Constructs	Dimension	Concepts
Determinants of Stress	Job Demand	High professional requirements due to leadership position and administrative workload; management of unit demands and challenges; and pressure from balancing organizational and staff demands and expectations
	Resource challenges	Lack of qualified or competent healthcare providers; fiscal or financial limitations and structural inadequacies
	Financial competence and management	Poor financial decisions due to non-exposure; non-training and/or limitations in understanding financial management; and pressure to function within financial limitations despite further healthcare requirements
Coping Strategies	Decision latitude or control	Positive perceptions of authority; ability to control situations; and independent-decision making
	Organizational support	Professional (formal, mostly from administrators and direct supervisors) and personal support (informal, colleagues, staff nurses and mentors) within organizations which increases the coping mechanism of NM