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# Exploring Work-Related Stress and Coping Strategies among Omani Nurses Working in Tertiary Governmental Hospitals at Muscat: A Cross-Sectional Study

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## Abstract

**Introduction**: Work-related stress has become a global issue in the nursing workplace, with about 9.20% - 68.0% of nurses globally experiencing stress. Conversely, work-related stress ranges between 20% and 40% in nursing. Other researchers noted that 35.1% of nurses globally experienced elevated stress levels. Stress can damage well-being and lead to coping, which can, directly and indirectly, improve well-being through a perceived state. Nurses need coping mechanisms to manage their stress levels and maintain stability. Coping mechanisms can vary greatly depending on a nurse's culture and background. Numerous findings indicate that managing stress is more critical than the cause of stress and that the more successful a stress-management approach, the less damage stress brings. **Objective**: In response to this, it is necessary to explore Omani nurses' stress level and their coping strategies working in tertiary governmental hospitals in Muscat. **Methods**: The sample size for this study was 383 Omani nurses, with a 100% response rate. This study used a descriptive cross-sectional design from 15 October 2020 to 30 November 2020. Samples were selected through proportionate population sampling (PPS) from the five selected tertiary hospitals. Data were collected by self-administered questionnaires using a perceived stress scale and Ways of Coping. A simple random sample within a stratum (each hospital admitting ward) was done to identify the study participants. The sample size for this study was 383 Omani nurses, with a 100% response rate. **Results**: About 83.3% of participants had a moderate perceived level of stress with an overall mean perceived stress level of 18.46 ± 4.52. The most common sources of perceived stress are feeling nervous and "stressed" in the last month (2.30 ± 0.95). According to the ways of coping strategies, nurses seemed to be resort-

ing to more "planful problem" (mean = 11.04) and least was seeking social support (mean = 9.67). **Conclusion:** This study highlighted the work-related stress level of staff nurses, explored their ways of coping and determined the relationship between work-related stress levels and methods of coping. The key finding of this study was that the frequency of stress reported by nurses was high enough to suggest that their stress levels were significant, given the demanding nature of their profession that requires maximum attention. Additionally, nurses seemed to resort to more planful problem-solving mechanisms to deal with their stressful situations than other coping strategies.

## Keywords

Stress Level, Work-Related Stress, Coping Strategies

# 1. Introduction

## 1.1. Background

Stress has a different meaning for different individuals, depending on the situation. Hans Selye proposed the first and most common definition of stress as "a non-specific response to the challenge". He classified stress into two groups, each with two subtypes: distress (dangerous or disease-producing stress) and eustress (beneficial or health-promoting stress). Selye's work on stress found three stages to a person's reaction to stress: alarm, resistance, and exhaustion. This model highlights the short-term and long-term stress consequences on the body. "It is not anything to prevent." Other definitions of "stress" include those by Dr. Hans Selye in his book "The Stress of Life" (1977) [1]. There is no clear definition of stress without considering the ever-changing environment in which humans exist. Since the individual's environment influences stress the most, the concept of stress in the twenty-first century can be reassessed. Furthermore, the rapid influx and fleeting nature of technology and information dramatically add to the complexity of stress in the modern world. Stress is viewed as a good or harmful aspect of life, but its effect varies according to individual experience and circumstances [2].

Stress has four primary sources: environment, social stress, physiological and thought. The working environment is one of the critical causes of work-related stress [3]. The most recent stress studies focus on how work can create stress. In the meantime, the terms "work stress", "job stress", and "occupational stress" have been used interchangeably. Occupational stress and stress at work can serve as an objective and measurable aspect of the workplace. Additionally, Work stress, according to the National Institute for Occupational Safety and Health, is "the adverse physical and emotional reactions that arise when job conditions do not meet the worker's skills, resources, or desires" [2].

In recent years, work-related stress has been getting more attention from public health researchers. Evidence showed that Work-related stress is a significant

problem affecting a third of workers in any given year. On the other hand, Organization loses millions of pounds because workers are sick due to work-related stress [4]. Furthermore, work-related stressors have been linked to an elevated incidence of depression and suicide, intrapersonal tension and aggression, and decreased employee efficiency and morale [5]. Work-related stress, depression and anxiety significantly affected about 828,000 employees in Great Britain in 2020, with an incidence of 2.440 out of every 100,000 employees. This increase was statistically significant compared to the preceding period [6].

Additionally, research has revealed that occupations can significantly cause stress in employees. Stress may be endemic and an occupational hazard in certain professions, such as the caring professions [4]. For example, in health occupations, work-related stress is a highly current problem [7]. Healthcare workers, especially medical practitioners, are vulnerable to stress and other occupational health risks [8]. Several studies indicate that work-related stress is particularly prominent among nurses [9]. Work-related stress is described as the physical and emotional reactions from encounters between nurses and their work environment when job demand exceeds the nurse's expertise and resources [10]. Nursing is a profession that is constantly under stress due to its nature. Although work-related stress occurs in all sectors, the nursing career is more likely to face it than most healthcare professionals. All are aware that nursing staff plays a critical position and constitutes the most extensive worker of any healthcare facility; they serve a hospital 24 hours a day, seven days a week [3].

Usually, the nursing profession follows a holistic approach that considers the individual as a whole. Patients with isolation, discomfort, disability, illness and even death are provided with accommodation, warmth, aid and support by nurses. Therefore, no surprise that nursing has been well and unfailingly known globally as stressful work [11]. About 9.20% - 68.0% of nurses worldwide suffer from stress. On the other hand, the prevalence of WRS in nursing varies by 20% to 40% [12]. Other researchers found that 35.1% of nurses are experiencing high rates of stress in hospitals worldwide [13]. 74.8% of nurses in China suffer from work-related stress [14].

Furthermore, an Australian study highlighted almost three-quarters of the private and public sector nurses reported their stress levels to be "extremely high" or "quite high" [15]. Also, a study among one hundred nurses was conducted in Gaza/Palestine. The results showed 79.28% of those nurses had stress [16]. In another study in Dubai, 95% experienced different amounts of stress due to their work. Besides, 86% of those nurses reported severe stress in their jobs, and were under less than 36 years [17].

When faced with a problem, individuals may use coping strategies to control or modify the situation or regulate their emotional reactions (Lazarus & Folkman, 1984). Problem-focused coping includes problem-solving activities and seeking information. In contrast, emotion-focused coping may have behaviours seeking others' company and cognitive activities such as denying facts to distort

reality and looking on the bright side of things. According to Lazarus and Folkman (1984), coping requires a cognitive appraisal and is context-dependent. According to the transactional perspective, coping is a process determined by cognitive assessment; examining the context within which it occurs is crucial. However, traditional models emphasize traits or styles that provide an adaptive coping method regardless of the situation. However, the studies of stressors by Folkman & Lazarus (1988) and stressors by Parkes (1986) found that coping varies the types of stressors and the situation [16].

Certain studies have differentiated between problem-focused strategies and emotion-focused strategies. Problem-focused techniques are mainly used with organizational work-related stressors in dealing with the situation. Because at work, stressors often lead us to think about how we can change what is happening. Yet, an intense period of organizational change can make some people feel out of control and powerless, so some degree of emotion-focused coping might be uncommon for some employees. Emotion-focused coping allows people to maintain an effective equilibrium as they regulate their feelings about changes. The person's coping resources often shape the coping strategies chosen by an individual [16]. Also, coping mechanisms can vary greatly depending on a nurse's culture and background [18]. Positive coping mechanisms, it is self-evident, will reduce or mitigate the detrimental impact of work stress on job performance.

It is well established that passive work is harmful to health. Consequently, negative coping strategies increase the adverse effects [19]. It only leads to a need for more autonomy, decision-making, and social support. If all these got accumulated, a reduced ability to solve problems faced in daily work routine is prominent [20].

Moreover, in the aspect of coping with stress, one of the essential nursing skills is developing coping strategies among nurses. It is vital in stressful situations since chronic and persistent stress is detrimental to the well-being of nurses [21].

### 1.2. Aim of the Study

1) Determine the stress level perceived by Omani staff nurses working in Muscat governmental hospitals;

2) Explore the Omani nurses coping strategies for their stress;

3) Assess the association between the perceived work-related stress of Omani staff nurses and their coping strategies.

## 2. Materials and Methods

### 2.1. Study Design

This study used a descriptive cross-sectional design.

### 2.2. Setting

The study was conducted in Sultan Qaboos University Hospital (SQUH), Royal Hospital (RH), Armed Forces Hospital (AFH), Khoula Hospital (KH) and Al-Nadha

Hospital, Muscat, Sultanate of Oman. All these five hospitals were tertiary care public hospitals extending health care services to people from various governorates of Oman. The number of Omani nurses working in SQUH was 490, AFH (484), RH (787), KH (486) and Al-Nadha Hospital (258) respectively.

## 2.3. Sample Size

The sample size for this study was estimated using the preceding sample size formula as 383. n = (nf * N in a health facility)/N total, where n = number of potential participants in a given public hospital, nf = final sample size obtained using the Cochrane formula. N = the total number of potential participants in the government tertiary hospitals (2505). Therefore, the proportion for SQUH was calculated as; n = (nf * N in a health facilities)/N total n = (490 * 380)/2505, making n = 75; RH had 787 nurses, contributed to 120 nurses; KH had 486 nurses, contributed to 74 nurses; Al-Nahdha hospital had 258 nurses, contributed to 39 nurses; and lastly AFH had 484 nurses, contributed to 75 nurses. The total sample size for this study was therefore 383 nurses.

## 2.4. Sampling Method

Samples were selected through proportionate population sampling (PPS) from the selected five hospitals. Thereafter, a random number table was used to select the required number of participants from each setting.

## 2.5. Sample Characteristics

Omani registered nurses, working in tertiary governmental hospitals in Muscat City, with at least one year of clinical nursing experience, and who were able to speak, write, and read English language were included. If the nurses were suffering from psychological problems like depression, and anxiety-related diseases, and the nurses who were working in COVID-19 departments during the time of data collection or one month before data collection were excluded. Additionally, nurses having less than one year of experience were excluded as they were considered to be on probation as per the Ministry of Health policy. During this period, they complete the orientation to the unit and formal training program in the hospital. The inclusion and exclusion criteria were mentioned in the first page of the Google form, which allowed the nurses to decide whether they are eligible to participate in answering the Google form.

## 2.6. Instruments Used for Data Collection

A self-administered questionnaire was used in data gathering. The questionnaire had two sections, namely, Perceived Stress Scale (PSS) and the Ways of Coping.

### Perceived Stress Scale (PSS):

This consisted of ten questions asking about participant's Perceived Stress Scale (PSS). PSS was a classic stress instrument created in 1983. It's one of the popular choices for understanding how different situations affect feelings and

perceived stress for an individual. It consists of ten questions. The items were evaluated on a 5-point Likert scale (from 0 1/4 never to 4 1/4 Very often). For total score determination, scores for questions 4, 5, 7, & 8 were reversed. On these 4 questions, changed the scores like this: 0 = 4, 1 = 3, 2 = 2, 3 = 1, 4 = 0. Scores ranging from (0 - 13) considered low stress scores ranging from (14 - 26) considered moderate stress and scores ranging from (27 - 40) high perceived stress

**Ways of Coping Checklist:**

(WCCL) was based on Lazarus' transactional model of stress and coping (Lazarus & Folkman, 1984). This model viewed stress as a relationship between the person and the environment that taxes or exceeds the person's resources and endangers their well-being. Two basics categorized of coping include efforts to alter the troubling person-environment relationship (*i.e.*, problem-focused coping) and efforts to regulate emotional distress (*i.e.*, emotion-focused coping). Problem-focused coping included defining the problem, generating, evaluating, and selecting potential solutions, and attempting to cognitively reappraise the situation by shifting level of aspiration, reducing ego involvement, finding alternative channels of gratification, or developing new standards of distancing, self-deception, positive comparisons and reality distortion. A four-point response scale was used from 0 "Not used" to 3 "Used a great deal".

The sub-scales: The researcher in this study used only three subscales with a total of twenty questions as follows:

1) Seeking social support questions (1 - 6);
2) Planful problem-solving questions (7 - 12);
3) Escape-Avoidance questions (13 - 20).

## 2.7. Ethical Considerations

Ethical approval was sought from the Medical Research Ethics Committee (MREC) of Sultan Qaboos University (SQU-EC/263/2020 dated 08/11/2020), Ministry of Health (MOH/CSR/20/23891 dated 13/10/2020) and Armed Forces Hospital, Sultanate of Oman (AFMS-MREC 024/2020 dated 10/11/2020). The investigator provided sufficient information to the nurses about the purpose of the study and was given the privilege of clarifying their doubts. After assuring the confidentiality, implied consent was obtained. All the study participants were encouraged to participate in the study and were also told that they have the right not to participate. The collected data was stored in a password-protected computer and only the investigators had the access to the data.

## 2.8. Data Collection

Data were collected from 15 October 2020 to 30 November 2020. Data were collected using a Google form prepared by the investigators of the study. Data were transferred to Statistical Package for the Social Sciences (SPSS) version 25.

## 2.9. Data Analysis

Data analysis was conducted using Statistical Package for the Social Sciences

(SPSS) software program version 25. Descriptive and inferential statistics were employed in the analysis. Categorical sample characteristics were summarized using counts and percentages, whereas continuous sample variables were summarized using descriptive statistics such as mean and corresponding standard deviation. The association between the perceived work-related stress of Omani staff nurses and their coping strategies using the Chi-square for categorical outcome variables. Independent samples t-test and one-way analysis of variance (ANOVA) were also used to determine the mean difference in the PSS variables and Ways of Coping, across categories of the demographic variables. All statistical tests were two-tailed and the significance level was set at the 5% or 0.05.

## 3. Results

A total of 383 participants responded to the self-administered questionnaire with a 100% response rate. The results showed that 31.3% (120) of the participants were working at the Royal Hospital followed by Sultan Qaboos University Hospital, 19.6 (75%) and Armed Forces Hospital AL-Khoudh, 75 (19.6%). Also, the majority of the sample was from the Medical and Surgical Department (29.8%). Majority (43.3%) had 1 - 5 years of work experience followed by 6 - 10 year (25.8%). Bachelor's degree in nursing (59%) was followed by diploma (36.6%). Many participants are between the ages 30 - 40 years (49.1%) and more than half of the participants (77.5%) were female. 61.9% were staff nurses, 66.3% married, 73.9% working in night shifts and 58% thought of changing their profession. However, 62.1% of the participants were satisfied with their current job. The overall mean perceived stress level was 18.46 ± 4.52. Table 1 shows the detailed results.

The results showed average perceived stress score among nurses was 18.46 ± 4.52 and the minimum total stress score was 4 and maximum 33. The perceived stress was categorized into three domains (low, moderate and high perceived stress) based on the mean score. The frequency analysis showed that 83.3% had moderate perceived stress, 13.3% had low perceived stress and only 3.4% had high perceived stress (Figure 1).
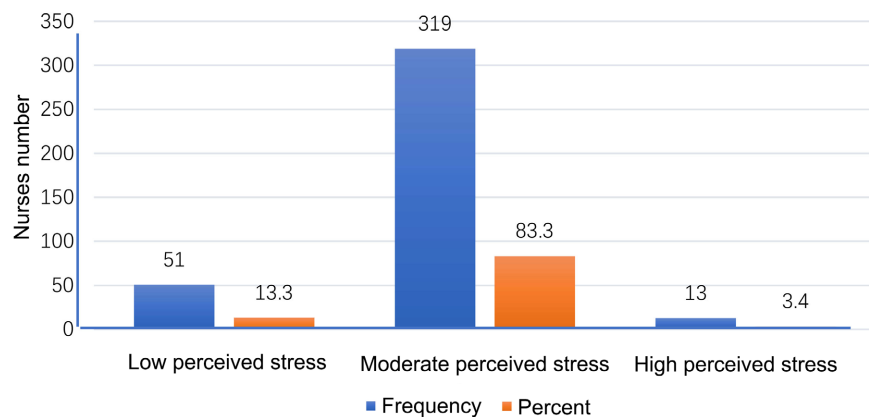


**Figure 1.** A bar graph showing the perceived stress level among nurses (n = 383).

**Table 1.** Socio-demographic characteristics and mean perceived stress level (n = 383).

| Variable | Frequency (%) | Mean PS | SD (±) |
|---|---|---|---|
| Perceived Stress | | 18.46 | 4.52 |
| **Institution** | | | |
| Sultan Qaboos University Hospital | 75 (19.6) | 17.97 | 4.565 |
| Alnahdha Hospital | 39 (10.2) | 19.21 | 3.621 |
| Armed Forces Hospital AL-Khoudh | 75 (19.6) | 18.60 | 3.824 |
| Khoula Hospital | 74 (19.3) | 18.64 | 5.119 |
| Royal Hospital (RH) | 120 (31.3) | 18.32 | 4.784 |
| **Department** | | | |
| Critical Care Department | 84 (21.9) | 19.46 | 4.408 |
| Clinical Departments | 20 (5.2) | 17.3 | 5.192 |
| Male Medical Ward | 5 (1.3) | 20.4 | 2.191 |
| Maternity and Child Department | 70 (18.3) | 18.61 | 4.915 |
| Medical and Surgical Department | 114 (29.8) | 18.77 | 4.075 |
| Nursing Administration | 15 (3.9) | 18.07 | 4.496 |
| Oncology Department | 39 (10.2) | 17.26 | 4.327 |
| Outpatient Department | 24 (6.3) | 17.42 | 5.132 |
| Psychiatry Department | 12 (3.1) | 15.08 | 3.728 |
| **Educational Level** | | | |
| Bachelors | 226 (59.0) | 18.48 | 4.501 |
| Diploma | 140 (36.6) | 18.55 | 4.393 |
| Masters | 17 (4.4) | 17.41 | 5.832 |
| **Age Range** | | | |
| <30 years | 185 (48.3) | 18.53 | 4.309 |
| >40 years | 10 (2.6) | 18.1 | 3.695 |
| 30 - 40 years | 188 (49.1) | 18.4 | 4.775 |
| **Gender** | | | |
| Male | 86 (22.5) | 18.28 | 3.978 |
| Female | 297 (77.5) | 18.51 | 4.67 |
| **Marital Status** | | | |
| Single | 124 (32.4) | 18.43 | 4.226 |
| Divorced | 5 (1.3) | 16.2 | 5.357 |
| Married | 254 (66.3) | 18.52 | 4.649 |

Continued

| | | | |
|---|---|---|---|
| **Nursing Position** | | | |
| Deputy head nurse | 25 (6.5) | 18.84 | 4.356 |
| Head nurse | 19 (5.0) | 18.26 | 5.858 |
| Midwife | 7 (1.8) | 21.71 | 2.928 |
| Nursing supervisor | 10 (2.6) | 22.4 | 3.748 |
| Specialist nurse | 32 (8.4) | 16.69 | 4.922 |
| Staff nurse | 237 (61.9) | 18.54 | 4.274 |
| Team leader | 53 (13.8) | 17.87 | 4.678 |
| **Years of Experience** | | | |
| 1 - 5 years | 166 (43.3) | 18.19 | 4.346 |
| 11 - 15 years | 83 (21.7) | 18.88 | 4.581 |
| 16 years and above | 35 (9.1) | 18.89 | 4.77 |
| 6 - 10 years | 99 (25.8) | 18.39 | 4.697 |
| **Work Night Shift** | | 18.46 | 4.52 |
| No | 100 (26.1) | 18.1 | 4.89 |
| Yes | 283 (73.9) | 18.58 | 4.384 |
| **Job Satisfaction** | | | |
| Dissatisfied | 41 (10.7) | 20.76 | 4.235 |
| Neither dissatisfied or satisfied | 104 (27.2) | 19.35 | 4.487 |
| Satisfied | 213 (55.6) | 17.62 | 4.45 |
| Very dissatisfied | 25 (6.5) | 18.08 | 3.904 |
| **Thought of Changing Your Profession** | | | |
| No | 161 (42.0) | 17.91 | 4.464 |
| Yes | 222 (58.0) | 18.85 | 4.529 |

Note: PS = Perceived Stress and SD = Standard Deviation.

The most common sources of perceived stress are feeling nervous and "stressed" in the last month ($2.30 \pm 0.95$), been upset because of something that happened unexpectedly in last month ($2.17 \pm 0.90$) and been angered because of things that happened that were out of your control in last month ($2.03 \pm 0.92$) (Table 2).

About the coping ways among nurses. A total of three subscales were used to assess the coping mechanisms employed by nurses to manage stress related events. Mean category response score was calculated for each subscale, individual items under each subscale and the overall total mean. Descriptive analysis showed that nurses tend to employ planful problem solving mechanism more often (M = 11.04, SD = 3.661) followed by Escape-Avoidance (M = 10.12, SD = 5.23) and the least was seeking social support (M = 9.67, SD = 3.677) (Table 3).

Table 2. Frequency and percentage distribution of each item of perceived stress among nurses (n = 383).

| Items | Never | Almost Never | Sometimes | Fairly often | Very often | Mean (±SD) |
|---|---|---|---|---|---|---|
| 1) Been upset because of something that happened unexpectedly | 23 (6.0) | 25 (6.5) | 232 (60.6) | 69 (18.0) | 34 (8.9) | 2.17 (0.90) |
| 2) Felt that you were unable to control important things in your life | 45 (11.7) | 73 (19.1) | 195 (50.9) | 46 (12.0) | 24 (6.3) | 1.82 (1.00) |
| 3) Felt nervous and "stressed" | 12 (3.1) | 43 (11.2) | 197 (51.4) | 79 (20.6) | 52 (13.6) | 2.30 (0.95) |
| 4) Felt confident about your ability to handle your personal problems | 17 (4.4) | 24 (6.3) | 120 (31.3) | 120 (31.3) | 102 (26.6) | 1.31 (1.07) |
| 5) Felt that things were going your way | 17 (4.4) | 50 (13.1) | 201 (52.5) | 99 (25.8) | 16 (4.2) | 1.88 (0.85) |
| 6) Found that you could not cope with all things you had to do | 39 (10.2) | 102 (26.6) | 173 (45.2) | 50 (13.1) | 19 (5.0) | 1.76 (0.97) |
| 7) Been able to control irritations in your life | 10 (2.6) | 38 (9.9) | 161 (42.0) | 118 (30.8) | 56 (14.6) | 1.55 (0.95) |
| 8) Felt that you were on top of things | 16 (4.2) | 61 (15.9) | 197 (51.4) | 82 (21.4) | 27 (7.0) | 1.89 (0.90) |
| 9) Been angered because of things that happened that were out of your control | 23 (6.0) | 65 (17.0) | 193 (50.4) | 80 (20.9) | 22 (5.7) | 2.03 (0.92) |
| 10) Felt difficulties were piling up so high that you could not overcome them | 42 (11.0) | 99 (25.8) | 176 (46.0) | 46 (12.0) | 20 (5.2) | 1.75 (0.98) |

Table 3. Frequency and percentage distribution of Ways of coping among nurses among nurses.

| Coping Strategies Subscale | Mean (%) | SD | Min | Max |
|---|---|---|---|---|
| Seeking social support | 9.67 (31.4%) | 3.677 | 0 | 18 |
| Planful problem-solving | 11.04 (35.8%) | 3.661 | 0 | 18 |
| Escape-Avoidance | 10.12 (32.8%) | 5.23 | 0 | 24 |
| Total coping | 30.83 | 9.894 | 0 | 60 |

The most employed coping strategies were under the planful problem-solving subscale. Nurses seemed to resort more to knowing what had to be done, and doubled their efforts to make things work (M = 1.95, SD = 0.792) followed by "just concentrated on what I had to do next—the next step" (m = 1.90, SD = 0.796) and "I made a plan of action and followed it" (M = 1.88, SD = 0.878) (Table 4).

Additionally, "talked to someone to find out more about the situation" (M = 1.78, SD = 0.808) was the highest employed coping strategy under the *seeking social support* subscale followed by "talked to someone who could do something concrete about the problem" (M = 1.77, SD = 0.815). The least used under this subscale was "I got professional help" (M = 1.35, SD = 0.911) (Table 5).

Table 4. Descriptive analysis of items on planful problem solving (n = 383).

| Items | Mean | SD | Min | Max |
|---|---|---|---|---|
| *Planful problem-solving* | 11.04 | 3.661 | 0 | 18 |
| I know what had to be done, so I doubled my efforts to make things work | 1.95 | 0.792 | 0 | 3 |
| I made a plan of action and followed it | 1.88 | 0.878 | 0 | 3 |
| Just concentrated on what I had to do next—the next step | 1.90 | 0.796 | 0 | 3 |
| Changed something so things would turn out all right | 1.82 | 0.777 | 0 | 3 |
| Drew on my past experiences; I was in a similar situation before | 1.78 | 0.767 | 0 | 3 |
| Came up with a couple of different solutions to the problem. | 1.73 | 0.749 | 0 | 3 |

Table 5. Descriptive analysis of items on seeking social support subscale (n = 383).

| Items | Mean | SD | Min | Max |
|---|---|---|---|---|
| *Seeking Social Support* | 9.67 | 3.677 | 0 | 18 |
| Talked to someone to find out more about the situation. | 1.78 | 0.808 | 0 | 3 |
| Talked to someone who could do something concrete about the problem. | 1.77 | 0.815 | 0 | 3 |
| I asked a relative or friend I respected for advice. | 1.55 | 0.887 | 0 | 3 |
| Talked to someone about how I was feeling | 1.63 | 0.852 | 0 | 3 |
| Accepted sympathy and understanding from someone | 1.58 | 0.785 | 0 | 3 |
| I got professional help | 1.35 | 0.911 | 0 | 3 |

Besides, under the escape-avoidance subscale, the most used coping strategies were "wished that the situation would go away or somehow be over with" (M = 1.68, SD = 0.836) and "had fantasies or wishes about how things might turn out" (M = 1.44, SD = 0.86). The least used coping strategy was "refused to believe that it had happened (stressful event)" (M = 0.93, SD = 0.862) (Table 6).

Finally, the bivariate analysis showed no significant correlation between perceived stress level and coping strategy (r = 0.033, $p$ = 0.519) (Table 7).

## 4. Discussion

Our study showed nurses' average perceived stress score was 18.46 ± 4.52, while the minimum total stress score was 4 and 33 was the maximum. Upon categorizing perceived stress as low, moderate and high perceived stress while referring to the mean score, a significant merging fall under moderate perceived stress (83.3%), then low perceived stress (13.3%), and only a few had high perceived

Table 6. Descriptive analysis of items on escape-avoidance (n = 383).

| Items | Mean | SD | Min | Max |
|---|---|---|---|---|
| *Escape-Avoidance* | 10.12 | 5.23 | 0 | 24 |
| Wished that the situation would go away or somehow be over with | 1.68 | 0.836 | 0 | 3 |
| Hoped a miracle would happen | 1.43 | 1.023 | 0 | 3 |
| Had fantasies or wishes about how things might turn out | 1.44 | 0.86 | 0 | 3 |
| Tried to make myself feel better by eating, drinking, smoking, using | 1.36 | 0.994 | 0 | 3 |
| drugs or medication | 1.09 | 0.932 | 0 | 3 |
| Avoided being with people in general | 1.02 | 0.889 | 0 | 3 |
| Refused to believe that it had happened (stressful event) | 0.93 | 0.862 | 0 | 3 |
| Took it out on other people | 1.17 | 0.956 | 0 | 3 |

Table 7. Relationship between perceived stress and coping strategy (n = 383).

| | Perceived Stress Score | | Coping Score |
|---|---|---|---|
| Total perceived stress score | 1 | 0.223** | 0.033 |
| | Sig. (2-tailed) | 0.000 | 0.519 |

** Significant at $p < 0.05$.

stress (3.4%). This finding is similar to the results of two studies conducted in Saudi Arabia with the same type of traditional and cultural setting and revealed that moderate stress was the most common among staff nurses [13] [22]. Our study finding was also aligned with the results of a study conducted in India among nurses working in tertiary care hospitals. The result of the study showed that 152 (85.39%) of the participants were under moderate stress [23]. The moderate stress level among Omani nurses working in tertiary hospitals could be related to the type of patient or condition of the patient and complexity. Also, Omani nurses in tertiary hospitals usually worked more extended hours than primary health centre nurses, making them more vulnerable to work-related stress.

Furthermore, the Oman Ministry of Health's 2019 annual report highlighted some tertiary hospital care facts. Those hospitals providing tertiary care are overcrowded. Also, tertiary care hospitals cannot accommodate specialized expansions, necessitating high-technological ancillary services. Besides, Modifications to existing tertiary services could be better from a logistical and technological standpoint. Those facts can add more stress among nurses working in tertiary hospitals.

A good number of participants sometimes go through stress unexpectedly. Taking our basis as the last month before the survey, at least one-third of the participants rarely undergo stress when they feel confident handling individual or personal issues. However, over half of the participants must be more stressed when overwhelmed with pertinent livelihood issues. Moreover, being upset and angered by unexpected events and circumstances beyond human control achieved an equal ratio from our study. Feeling nervous and "stressed" was the most common perceived source of stress for our study participants, with a mean of (2.30 ± 0.95). This finding was similar to a previous study conducted in KSA [6]. Many reasons can be explained why nurses feel nervous and "stressed" during our data collection time. It was the period of the COVID-19 second wave. However, the nurses in this study were not working in the COVID-19 departments during our data collection. But we think they were affected by that period. The Omani government took many measures to reduce the effect of the rapid increase in cases of patients. One measurement was partial lockdown from 7 pm to 5 am and total closure of all entertainment such as parks, beaches, etc. They were also not allowing seating at cafes and restaurants. This decision harms the psychological well-being of all Omani citizens included. Since nurses' stress significantly impacted their ability to provide high-quality patient care. It is essential to understand the level of stress experienced by nurses to implement appropriate interventions.

Stress and burnout among nurses are apparent to impact the quality of care provided and absenteeism rates. In addition to potential stress factors in the hospital, such as working conditions, personal and domestic factors should be considered when assessing burnout risk profiles [23]. Stress intervention measures could focus on stress prevention for individuals and tackling organizational issues. It is necessary to look at risk factors causing job stress, effects of work-related stress and coping strategies to overcome stress risks at the workplace [24]. Based on the three-subscale analysis we used, finding from our study showed that nurses often tend to employ a planful problem-solving mechanism more than the Escape-Avoidance mechanism, and the least utilized was the "seeking for social support" problem-solving mechanism.

Most of the coping strategies employed by our study participants are under the planful problem-solving subscale. Playful problem-solving is problem-focused strategies. It is based on an attempt to change the person-environment realities behind negative emotions or stress.

Playful problem-solving was the most frequently identified way of coping among nurses who work in the Admission and Emergency Departments of Hospitals related to Shiraz University of Medical Sciences [25], which is very similar to our study findings. However, in contrast to our findings, results from a study that selected hospitals in Udupi and Mangalore districts of Karnataka showed that seeking social support was the most frequently employed mechanism to deal with stress, followed by Planned problem-solving [26]. It is interesting to know

that knowing what had to be done and double their efforts to make things work seemed to be the last resort of nurses. To minimize the potential stress along the line of duty, a chunk of nurses will also concentrate on "what I had to do next—the next step". Finally, with an organized form of "I made a plan of action. I followed it", a good number tend to employ this strategy from our study.

Moreover, the most used coping strategies under the escape-avoidance subscale were "wished that the situation would go away or somehow be over with" and "had fantasies or wishes about how things might turn out". The least used coping strategy was "refusing to believe it had happened (stressful event)". Obviously, our study setting is conducted in a highly religious community, and Muslims do have this fate that, whatever happens, is the will of Allah. And in so doing, they can see stress induce factors as black and white in living situations.

To cope with the stress from, oncology nurses, support groups and specific training are proven to keep them away from the related stress. On the other hand, under the Seeking Social support subscale, "talked to someone to learn more about the situation" emerged as the joint strategic principle to level the stress at work. Obviously, "talked to someone who could do something concrete about the problem" was also a common strategy, and the least employed from our study was "I got professional help". An intervention called the compassion fatigue program was a helpful strategy for managing stress at work and home among oncology nurses [27].

Preventive monitoring strategies, and measures such as being on standby, following up on the position and standards related to the patient's conditions and regaining control are used by nurses. Nurses using these methods try to stop the events and situations that deprive them of their peace. Situational coping of nurses sometimes serves as a preventive function as well. Akbar *et al.* mentioned situational coping as a class characterizing nurses' dominant activities and responses after feeling stressed out during their jobs. Activities under situational coping include: "situational control of the conditions", "preventive monitoring of the situation", "seeking help from others", "self-control", "avoidance and evasion of position ", and "spiritual coping" [28].

Evidence suggests that no single intervention can work in isolation. Therefore, it is recommended to have a package of interventions at the organizational level which could be accessed by those in need [27]. For instance, an on-site massage as a support mechanism effectively reduces emergency nurses' anxiety [29]. Two other coping mechanisms that could be used are Organizational Coping Strategies and Individual Coping Strategies [30] [31].

Some biological method studied to reduce general stress and can keep company is to possess a dog. A study where a 5-minute therapy dog interacted with nurses while on shift reduced stress in the emergency department (ED) for physicians and nurses. In emergency rooms, a violence coping program (VCP) is predicted to be an effective strategy for improving resilience, reducing burnout, nursing competency and active coping behavior [32].

Limitation of the Study

Limitations should be acknowledged and considered when utilizing the findings of this study. First, the study design was cross-sectional and only provided a snapshot within the study period and with a different time frame; hence, different results may be reported. Second, another limitation of self-reported questionnaires about stress is that; they provide subjective measures representing individuals' perceptions. Objective assessments should be applied in future. Also, to use longitudinal research to examine whether there is evidence of changes over time. Third, since the study's context was in the tertiary hospital of Muscat city, it would be helpful to investigate the possibility of replicating this study in other different hospitals (secondary or primary, urban or rural, private hospitals etc.) of the sultanate of Oman. Also, this study was limited to Omani nurses only. It is based on archival data such as sick leave and biological measurements.

Further research is needed to include all nurses from different nationalities. Nurses who are foreign experts could also be joined to give a broader view of the working conditions regardless of race. Also, further studies are required using other coping strategies.

## 5. Conclusions

This study highlighted the work-related stress level of staff nurses, explored their ways of coping and determined the relationship between work-related stress levels and methods of coping. The crucial finding of this study was that the frequency of stress reported by nurses was adequate to consider the stress level seriously, judging by the nature of their profession that warrants maximum concentration. Additionally, nurses seemed to resort to more planful problem-solving mechanisms to deal with their stressful situations than other coping strategies.

Based on the study's findings, the following guidelines were created with particular reference to nursing research, education, and practice:

The levels of stress and related concepts were moderate among Omani nurses, indicating the need for additional studies on the consequences of stress management. Stress may be addressed in primary (prevention), secondary (timely reaction), or tertiary (rehabilitation) stages, according to transactional theory. Primary strategies seek to reduce causes of stress in organizations by adapting the physical or sociopolitical atmosphere to an individual's needs and providing them with more autonomy over their job condition. Though it is often challenging to eliminate such stressors, compromises may sometimes be created. Primary-level interventions can be beneficial if communication systems are enhanced, roles are redesigned, or staff nurses are included in decision-making. Other strategies can assist nurses in stress management without attempting to remove or alter occupational stressors through educational programs. These programs help nurses recognize signs of stress in themselves and others and develop coping skills. These intervention measures are intended to assist nurses facing difficulties in their work environment or personal lives. These programs

aim to adapt nurses' behavior and lifestyles without significant hospital procedure changes. Various work-based stress relief programs neglect issues beyond the work environment, which is ironic given how often individuals' private lives infiltrate their professional lives. Counselling procedures are recommended to include family and friends since they are considered the primary emotional help sources.

Additionally, managers may help nurses cope with stress by establishing effective two-way communication systems, clarifying role and performance expectations, resolving conflicts practically, developing policies that minimize the stress associated with shift work, establishing support groups for nursing personnel, making psychological counselling accessible and available to affected nurses, and enhancing observational skills to detect increased stress and burnout levels. Finally, more studies are needed relating to stress, burnout, depression and other mental disorders among Omani nurses.

## Acknowledgements

## Conflicts of Interest

The author has no conflict of interest to declare.

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