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Research Article

Magnitude and Determinants of Nurses' Perceived Stress and Burnout in a Tertiary Eye Hospital

Wadha Al Shaibani[2], Maha Al-Qahtani[2], Enas AlAmri[2], Rajiv Khandekar[1*]

[1]Department of Research, King Khaled Eye Specialist Hospital, Saudi Arabia

[2]Department of Nursing, King Khaled Eye Specialist Hospital, Saudi Arabia

[*]**Corresponding Author:** Rajiv Khandekar, Department of Research, King Khaled Eye Specialist Hospital, POB: 7191. Aruba road, Riyadh, Pin: 11462, Saudi Arabia, Tel: +966118401131; Email: Rajiv.khandekar@gmail.com

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Abstract

Purpose: To assess the prevalence and determinants of stress among nurses of a tertiary eye hospital.

Methods: This cross sectional survey was held in 2019. Nursing staff of our eye hospital provided feedback about ten possible causes of stress in their profession and ten effects of stress on mental health of nurses. Five graded Liker scale was used to generate stress score. It was graded as none, mild, moderate and severe and correlated to the determinants.

Results: We surveyed 212 participants. Less than 4% of participants were Saudi nurses and 7% were male nurses. More than two thirds of nurses were in the profession for more than 10 years. The median stress score was -3.0 (IQR -9.0 ; +3.0) The stress was absent in 46 [21% (95% CI 16.1 ; 27.2)]. The stress was none in (46; 22%), mild (88; 22%), moderate (43; 20%) and severe (35; 16%). The occupation related stress was not associated significantly to gender (P = 0.5), nationality (P = 0.9) and rotation duties (P = 0.1). However it was more among nurses working in Inpatient units than other work station (P = 0.02). Overload of work, poor cooperation of eye patients, criticism of work, negligent coworkers and difficulty in interacting with eye doctors were leading causes of stress in more than two third of participating nurses.

Conclusions: One in four nurses of tertiary eye hospital expressed severe grade of stress. Measures to reduce the stress could improve mental health of nurses and patient care.

Keywords: Stress; Mental health; Nursing staff; Eye hospital

1. Introduction

Health care providers face work related stress to a large extent and it is likely to increase in coming years. It also affects mental health of nurses, patient care negatively. It also indirectly has financial impact on the organization [1]. Therefore estimating the magnitude of stress, stressors and impact of intervention strategies to reduce stress and burnout among nursing staff are crucial [2, 3, 4]. A number of studies revealing amount of stress especially burnout (severe grades of stress) among nursing staff of different workplace. Nurses of oncology department, Intensive care units, hemodialysis units and old age care centers have experienced stress and burnout and even suggested remedial measures to reduce the negative effects of stress [5, 6, 7, 8]. Professionals related to eye care in Canada reported 35% stress and burnout [9]. Nearly 70% to 80% Ophthalmologists of USA and European continent felt occupational stress mainly due to patient care and hospital administrative issues [10]. As many as 53% Optometrists expressed stress during their work mainly due to work overload and clinical tasks [11]. Physical symptoms of stress include chronic headache, neck and back pain. Among 50% of eye care professionals, neck and back pain was work related [12]. To the best of our knowledge, stress and burnout among nursing staff working for eye care has not been studied. Ours is a tertiary eye care hospital catering services to cases referred and with advanced complicated eye diseases in Saudi Arabia. We present the magnitude and determinants of work related stress among nursing staff of an eye hospital of central Saudi Arabia.

2. Methods

The institution research board (IRB) approved of this survey. All nurses working in the institution were invited to participate in this survey in 2019. Written consent was obtained from each participant. The nursing staff on annual leave during 2 weeks of survey were excluded. We assumed that among 400 nursing staff in eye hospital the stress of moderate to severe grade is prevalent in 30% nurses as noted among oncology nurses [4]. To achieve 95% confidence interval, 5% acceptable error margin and 1.2 factor of clustering by work station, we need to recruit randomly selected at least 215 nurses need to be surveyed. We used Open epi software to calculate the sample size for this study [13]. Two nursing staff and one clinical coordinator were the field staff. The pretested data collection form was used. The demographic information included age, nationality and gender. Work related information included number of years in institution and in nursing profession, current workstation and rotation in duties. Participants were asked about their perception of possible component of nursing work that can cause stress. Participants were asked to tick all stressors. There were ten possible perceived effects of stress on working of nursing staff. Participants were given one of the five option using Likert scale. The fully agree was given +2 score. Agree; +1 score, fully disagree of -2, disagree -1 and 'Cannot say' was awarded '0' the sum total of all ten responses was done to conclude each nurses perception. The total score was then classified as: none (<-10 score), mild (-1 to -10), moderate (0 to +9) and severe (>11). The grades of stress were then associated to demographic and work related

factors. The data was collected on pretested data collection form. It was then transferred in spreadsheet of Microsoft Access®. After cleaning the data using frequency and consistency checks, it was transferred into spreadsheet of Statistical Package for Social studies (SPSS 26) (IMB, Chicago, USA). The qualitative variables were presented as frequency and percentage proportion. The quantitative variable of normal distribution were presented as mean and standard deviation. Those not normally distributed were presented as median and inter quartile range. To compare the outcomes in two subgroups we presented difference of mean, 95% Confidence interval and two sided P value. A P value of <0.005 was considered as statistically significant.

3. Results

We surveyed 212 nursing of a tertiary eye hospital to inquire about stress and burnout felt by them as part of their profession. The demographic profile of the participants is given in Table 1. Less than 4% of participants were Saudi nurses and 7% were male nurses. More than two thirds of nurses were in the profession for more than 10 years. The median stress score was -3.0 (IQR -9.0 ; +3.0) The stress was absent in 46 [21% (95% CI 16.1 ; 27.2)], the grades of stress perceived by nurses is given in Figure 1. We grouped moderate and severe grade of nurse perceived stress as 'worth noting' while none and mild stress was grouped as 'negligent'. We associated different demographic and nurse working related variables to stress grade. Table 2. None of the demographic and duration of nursing work were associated to stress of statistically significant level. Nurses perceived causes of stress & burnout among ophthalmic nurses is given in Table 3. Overload of work, poor cooperation of eye patients, criticism of work, negligent coworkers and difficulty in interacting with eye doctors were leading causes of stress in more than two third of participating nurses. We reviewed work station by four grades of stress score. Among five type of work station the stress level variation was statistically significant. (χ^2 = 17.6, DF= 9, P = 0.04). The level of stress among nursing staff of different health sector in published literature is given in Table 4.

Age (years)	Median Inter quartile rage (IQR)	36 32 :43	
Number of years in KKESH	Median IQR	7 3.25 :12	
Number of years in nursing	Median IQR	12.5 8 : 20	
		Number	Percentage
Nationality	Saudi Non-Saudi	8 204	3.8 96.2
Gender	Male Female	14 198	6.6 93.4
Rotation duties	Yes	75	35.4

	No	137	64.6
Work station	Out-patient	46	21.7
	In-patient	80	37.7
	Short stay unit	13	6.1
	Operation theater	19	9.0
	Administration	2	0.9
	Recovery room unit	16	7.5
	Anesthesia	6	2.8
	Emergency	27	12.7
	Employee health	3	1.4

Table 1: Nurses perceived occupational stress and burnout at eye hospital.

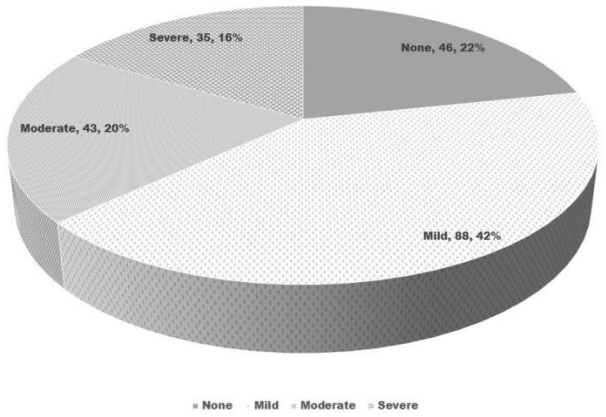

Figure 1: distribution of stress among nurses of eye hospital by grades.

		Significant stress & burnout (N = 78)		**Insignificant stress & burnout (N = 134)**		**Validation**
		Number	Percentage	Number	Percentage	
Gender	Male	4	5.1	10	7.5	OR = 0.7 (0.2 ; 2.2) P = 0.5
	Female	74	94.9	124	92.5	
Nationality	Saudi	3	3.8	5	3.7	OR = 1.2 (95% CI 0.2 ; 4.4) P = 0.9
	Non Saudi	75	96.2	129	96.3	
Rotation	Yes	56	71.8	82	61.2	OR = 1.6 (95% CI 0.9

duties	No	22	28.2	52	38.8	; 3.0) P = 0.1
Work station	Out-patient In-patient Short stay unit Operation theater Other	21 35 2 6 14	26.9 44.9 2.6 7.7 17.9	25 45 14 13 37	18.7 33.6 10.4 9.7 27.6	$\chi 2 = 5.5$ Df = 5 P = 0.02
Age	Mean SDV	37.5 9.1		38.6 9.9		0.96 (95% CI -1.3 ; 3.2) P = 0.4
Years in nursing	Mean SDV	14.2 7.1		14.3 9.1		0.1 (-2.2 ; +2.3) P = 0.96

Table 2: Factors associated to stress and burnout among nurses working in a tertiary eye hospital.

S no	Cause	Number	Percentage
1	Work overload	186	87.7
2	Uncooperative patients	164	77.4
3	Criticism of work performed	136	64.2
4	Negligent co-workers	139	65.6
5	Lack of support of supervisors	127	59.9
6	Difficulties with doctors	137	64.6
7	Newer tasks allotted without proper practical training	122	57.5
8	Tasks related to electronic health records	114	53.8
9	Lack of time for creative thinking	114	53.8
10	Family & personal problems brought to work station	71	33.5

Table 3: Nurses perceived causes of stress & burnout among ophthalmic nurses.

No	Authors	Category	Year	Sample	Highlight	Reference
1	Canadas-De et al	Oncology nurses	2018	9,959	Emotional exhaustion: 30% (95% CI 26 ; 33) Depersonalization 15% (95% CI 9 ; 23)	7
2	Parola V et al	Palliative care nurses	2017	1,406	Burnout: 17.3%, Emotional exhaustion (19.5%), Depersonalization (8.2%)	11
3	Nla RG	Emergency nurses	2015	150 60 nurses	Stress 11% , intense anxiety 17%	14
4	Heishamn	Critical ward	2015	3,043	46.2% had significant stress score	15

	et al	nurses			Male, unmarried, time of shift and years of nursing were associated with stress level	
5	Mosadeghrad AM	Hospital nurses	2013	296	33% had high grade of stress in Iran Job leaving 35%	16
6	Bhatia et al	Hospital nurses	2010	87	87% had stress in North India	17
7	Wang IL et al	Public health nurses	2002	167	Occupational Stressors Scale: 159.4 ±29.2. Workload, personal responsibility stressors	18
8	Present study	Eye hospital nurses	2019	212		-

Table 4: Stress and burnout among health care providers.

4. Discussion

One fourth of nurses working in eye hospital perceived that they do not face stress while nearly one in six nurse faces severe grade of stress. The variation of perceived stress among nurses working in different work station was significant. Workload, poor cooperation of patients and criticism of higher authorities were main causes of stress among nurses of eye hospital. This is perhaps first such survey of nurses of a tertiary eye hospital. The magnitude of stress suggest that nurses of eye hospital face similar extent of stress and stressors. Giving opportunity to express about their problems and stress is in one way of addressing this mental health issue. This also gives area that need more focus. Eye care services in a tertiary hospital has undergone dramatic transition in last few decades. Majority of patients except ocular trauma, pediatric surgical cases and chronic retinal conditions that need postoperative supervised care, are managed as day care patients. Nursing care also has changed accordingly. Advent of electronic health record in 21st century resulted in additional job responsibilities which nurses adopted very well. While comparing the stress level of nurses of eye hospital to the other published studies showing prevalence of stress and burnout, it is noted that those providing terminal illness related patient care like oncology units, intensive care unit and palliative care unit, the stress level was lower in our cohort [4, 7, 11, 14-19]. We did not find gender difference in stress level among nurses. This could be due to small sample of males in our study. Female gender have been shown higher level of occupational stress compared to male nurses [15]. Coping up with stress could be better among males compared to Iranian nurses. In our study nurses of inpatient department expressed higher risk of stress compared to nurses of outpatient unit, administration and anesthetic nurses. Most of the eye care in our institute is through 'Day Care' but patients with ocular trauma and patients with chronic eye diseases needing constant monitoring are admitted. Thus nurses who are facing more workload, patient and their relatives interaction for a longer time and strict administrative protocols the ward nurses have to face compared to nurses of other work station could explain this variation. Usually nurses of operation theatre experience more stress and even blamed for errors

[20]. But anesthetic nurses in our institute work under constant supervision of consultant anesthetist and are not liable to patient's condition during surgery. In our ophthalmology hospital, intensive care unit does not exist. Patients with high mortality risks after surgery are shifted to other hospital for management in ICU. The nurses in such ICU have very high emotional exhaustion (70%) and 7% rate of burnout [21]. The workload was the leading cause of stress among nursing staff of eye hospital. This was a confirmed stressor in a study from USA. Researcher sin this study noted that an increase in patient nurse ratio increases the risk of stress and dissatisfaction among nurses [22]. Non appreciation and criticism by higher authorities was perceived stressor among nurses in our study. This was also noted and appreciating outstanding performance of nurses was recommended strategy to reduce stress in a study from Jordan [23]. Poor cooperation of patient was reported stressor by a large number of nurses in our study. Limited number of native nurses, inability to speak local language fluently could be the reason for poor communication with patients resulting in this observed stressor. There were few limitations in present study. Male nurses and Saudi nurses were very few and therefore their influence on stress level could not be established conclusively. This being a cross sectional study, occupation related factors could not have special relationship with stress level as perceived by the nurses. In a study where perceived burnout and causes are collected, possible solution should have been also inquired. This being a part of a larger study with primary focus on Electronic Health Record related stress, solutions were inquired for this issue only. Nursing staff in an eye hospital are special manpower as part of mid-level eye care professionals. In absence of large scale training centers for ophthalmic nursing, huge efforts are made to train general nurses in eye care of tertiary level. Minimizing attrition of such trained staff is crucial. Negative effects on mental health of such nurses which could cause rapid turnover, dissatisfaction and even quality of care must be minimized.

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Conflict of Interest

None

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