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Impact Of Stress Among Nursing Workers During Hajj Season Compared To Normal Working Days At Saudi Arabia 2024

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Abstract

Background: The annual pilgrimage of Hajj stress creates serious demand for the health sector in Saudi Arabia, Every year the Ministry of Health in Saudi Arabia announces the opening of applications to those who wish to work on Hajj. A certain number of applicants are nominated, yet many nurses continue to apply to participate during Hajj ever year. Although nurses are under great work stress pressure during Hajj, many nurses still apply for the approval to participate in Hajj. Because of the public health risks, healthcare workers must work even harder for longer hours undergoing mental stress. It is not easy to work in an environment that contains a large number of patients of different ethnicities, cultures, and languages. In this situation, nurses require correct and rapid nursing interventions to save patients' lives, and this is considered a difficult work environment. It is not easy to work in an environment that contains a large number of patients of different ethnicities, cultures, and languages. In this situation, nurses require correct and rapid nursing interventions to save patients' lives, and this is considered a difficult work environment. For example, Makkah and Medina hospitals receive thousands of patients in every Hajj season in certain places.
Aim of study: To determine the nursing workers during Hajj Season Compared to normal working days at Saudi Arabia 2024
Methods: A cross-sectional study was carried out with a sample size of 200 nursing design a randomly selected sample of nursing during Hajj duties in 2024 at two points in time: during Hajj season (June 2024) and post-Hajj (August 2024). Demographic and professional information obtained.
Results: Show during Hajj the majority of participants Very Low (27.69%) followed by low (22.31%) but average (17.69%) but high and very high respectively (16.15%, 16.15%) while after Hajj Very Low (38.57%) followed by high and very high respectively were (11.43% , 27.14%) but low and average respectively were (14.29%, 8.57%) and total were (100.0%) while heave a significant relation were P-value <0.049 and X^2 9.444 .
Conclusion: The stakeholder should consider would improve psychological resilience. Moreover, reinforce them to show to all nurses, nurse's experience elevated stress during the Hajj season. The Hajj season places psychological burdens on nurse's especially female staff and those with postgraduate qualifications. During mass gatherings of pilgrimage,

Keywords: Impact, Stress, nursing, Hajj, Season, Compared, normal days, Saudi Arabia.

Introduction

Over two million Muslims from more than 140 countries gather each year at Al-Masha'aer, Saudi Arabia's holy areas, to perform Hajj. Hajj commences on the eighth to thirteenth day of Dhul Hijjah, the Islamic lunar calendar's 12th month [1]. Since the Islamic lunar calendar is 11 days shorter than the Gregorian calendar, the dates of Hajj vary from year to year. However, Hajj is not limited to these days because pilgrims arrive weeks before Hajj and depart days or even weeks after the end of hajj rituals. [2] In Hajj, there are always a large number of pilgrims gathering in a relatively small space for a short period, which pose specific health and epidemiological risks [3]. Hajj is a ritual that requires physical fitness as pilgrims may be obligated to walk for several kilometers in a crowd. [4] In addition, there is always a change in their normal sleeping patterns, which can be physically exhausting. The climate is very hot. Sometimes, temperature exceeds 40 degrees Celsius, which may result in heat exhaustion among pilgrims. Outdoor Hajj rituals related to an increased risk of heatstroke, heat exhaustion, dehydration, and sunburn among pilgrims during the hot summer months. The Kingdom of Saudi Arabia's government,[5] in collaboration with the Ministry of Hajj, the Ministry of Health (MOH), and others, seek to prevent health problems through a variety of measures, services, and interventions. Previous studies have shown that pilgrims who visit primary and secondary medical centers during hajj suffer from a variety of communicable and non-communicable diseases including cardiovascular disease, respiratory disease, and heat stroke [6].

There are many studies on stress among nurses related to their job. Work stress is the second prevailing problem related to health. In addition, countries annual budget for stress related work increased to 20 billion Euros, making it a solid business case. In addition, this data directs that further work need to be conducted in all these aspects to lessen or handle the magnitude of job stress for individual, society and organization.[7] It is not easy to work in an environment that contains a large number of patients of different ethnicities, cultures, and languages.[8]

In this situation, nurses require correct and rapid nursing interventions to save patients' lives, and this considered a difficult work environment. For example, Makkah and Madinah hospitals receive thousands of patients in every Hajj season in certain places. Hajj is the fifth pillar of Islam and it is obligatory for every capable adult Muslim once in their lifetime.[9] Therefore, the Ministry of Health in the Kingdom of Saudi Arabia is keen to organize the nomination of workers in Hajj healthcare sectors.[10] However, every year, many registered nurses request to participate in the Hajj. Therefore, it is important to explore the reasons for nurses claiming annually to work as staff nurse during the Hajj season. [11]

Saudi Arabia hosts one of the largest mass gathering events in the world, an annual Hajj pilgrimage in Mecca, gathering more than two million pilgrims annually [12]. This vast migration puts significant pressure on the already existing medical system, especially in these important points of entries. All these stress factors combine in the case of healthcare workers (HCWs) who have to work under these challenging conditions and face a massive rise.[13]

Recently, Job stress mainly in the nursing career has become a significant problem. Nurses working in the hospital settings tend to exposed to the greatest level of job stressors; study had shown in comparison to other health care professionals that nurses are facing utmost stress, highest physical and psychological tension [14]. Researcher also concludes its negative effects on nurses' job satisfaction [15] and increasing number of turnover and absenteeism [16]. More theoretical study is desired on stress and problems related to it. Job stress has become a major problem in recent period particularly in nursing profession [17].

Rationale

Chronic stress is a condition that should be managed and alleviated to maintain or improve staff retention in the medical field . Under controlled or chronic work, stress often leads to the phenomenon of professional burnout, which subsequently increases the turnover occurrence in HCWs dramatically. As an example, a COVID ICU healthcare worker during Hajj showed 56, 82, and 72 percent of emotional exhaustion,

depersonalization, and impaired personal achievement all are a sign of burnout. Due to the nature of the work of Hajj operations, experienced people are essential to keep the knowledge of the institution and the fluidity of operations. Finally, the lessons learned on the role of particular stressful factors among HCWs during Hajj can have a tremendous impact on refining public health preparedness plans to support mass event planning in the future in the form of creating more effective training routines, better resource distribution, and support structures .

Methods

Study Design and Setting

The cross-sectional study design was carried out with a sample size of 200 nurses health care workers who completed the 10- item Perceived Stress Scale at two points in time: during Hajj season (June 2024) and post-Hajj (August 2024). Demographic and professional information obtained. Such design was strong to compare the stress levels of the same people concerning two separate periods of time .This method considerably decreased the inter-individual variability. This gave more evidence of the effects of the Hajj season on stress. Stress scores compared, or their associations explored using non-

Participants

Total of (200) healthcare workers (HCWs) partook in the study and filled in the questionnaires in both of data collection. The sample size was sufficient to allow the statistical power that will result to the identification of meaningful differences. The inclusion criteria enabled inclusion of all the employees of the whether working on full time basis or as external support from other health institutions outside the health surveillance center. This ensured that a diverse mix of staff with different workload stresses could represented in the study. Participants were selected using convenience sampling from HCWs stationed at the hajj season at the grounds only. Enhancing the repressiveness of the study population and supporting the generalizability of the results to the overall population of HCW during mass gatherings.

Data Collection

The research subjects asked to complete the PSS-10 questionnaire and the demographic questionnaire. Through this collection plan, it was possible to capture crucial demographic and occupational variables such as age, gender, education, occupation, experience and work assignment and prior participation in Hajj. This all-inclusive form of data gathering is important to subgroup analyses, which can point out the vulnerable HCW populations that can be more vulnerable to stress, as in the case of the burnout-

Ethical Considerations

Ethical approval obtained from the Institutional Review Board of Health Affairs, Kingdom of Saudi Arabia. Participation was voluntary, and informed consent obtained from all healthcare workers prior to data collection. The purpose of the study, the anonymity of responses, and the confidentiality of data explained clearly to participants. No identifying information collected, and all data were stored securely and used solely for research purposes.

Statistical Analysis

Data analysis conducted using SPSS. Given the typical non-normal distribution of psychological scale scores like the PSS-10, non-parametric tests chosen. This approach is consistent with rigorous statistical practices in similar studies, for instance, non-parametric analyses to explore compassion fatigue among nurses during Hajj.

Results

Table 1: distribution of participant according to socio demographic

	N	%
Age		
<30	26	13.00%
30-40	80	40.00%
40-50	64	32.00%
50-60	30	15.00%
Gender		
Female	74	37.00%
Male	126	63.00%
Educational Level		
Diploma or less	102	51.00%
Bachelor's	76	38.00%
Master's or higher	22	11.00%
Occupation		
Nurse	68	34.00%
Physician	42	21.00%
Public Health Officer	56	28.00%
Other	34	17.00%
Years of Experience		
<5	24	12.00%
5-10.	50	25.00%
10-15.	44	22.00%
15-20.	34	17.00%
>20	48	24.00%
Work Assignment		
Airport-based	150	75.00%
External support	50	25.00%
Previous Hajj Participation		
First time	24	12.00%
1–3 times	76	38.00%
More than 3 times	100	50.00%
work place		
Pilgrims' Terminal	100	50.00%
North Terminal	24	12.00%
Pilgrims' Terminal and North Terminal	6	3.00%
Terminal 1	38	19.00%
Other	32	16.00%
Increased financial incentives		
No	56	28.00%
Yes	144	72.00%
One day off every 7 days		
No	116	58.00%
Yes	84	42.00%
Reduced working hours		
No	132	66.00%
Yes	68	34.00%

Regarding socio demographic characteristics, this table shows that the highest proportion of participants age 30-40 years (40.00%) followed by 40-50 years of age (32.0%), while 50-60 were (15.00%) . Regarding the gender the majority of participant male were (63.00%), but female were (37.00%). Regarding the level of education the majority of participant diploma or less and bachelor's during Hajj (45.2%), after Hajj the majority of participant diploma or less were (51.00%) while bachelors were (38.00%) while master were (11.00%). Regarding the Occupation the majority of participant nurse were (34.00%), while Public Health Officer were (28.00%) but other were (17.00%). Regarding the years of experience the majority of participant from 5 to 10 were (25.00%) but the >20 were (24.00%). Regarding the Work Assignment the majority of participant Airport-based were (75.00%), but External support were (25.00%). Regarding the Previous Hajj Participation the majority of participant More than 3 times were (50.00%) followed by 1–3 times were (38.00%). Regarding the work place the majority of participant Pilgrims' Terminal were (50.00%), but Terminal 1were (19.00%).Regarding the Increased financial incentives the majority of participant Yes were (72.00%) followed by No were (28.00%), Regarding the One day off every 7 days the majority of participant No were (58.00%), but Yes (42.00%). Regarding the Reduced working hours the majority of participant No (66.00%) followed by Yes were (34.00%),

Table 2 Distribution of the relation of participant during and after Hajj with demographic data

		Groups				Total		Chi-square	
		During Hajj=130		After Hajj=70					
		N	%	N	%	N	%	X^2	P-value
Age	<30	19	14.62%	7	10.00%	26	13.00%	35.433	<0.001*
	30-40	51	39.23%	29	41.43%	80	40.00%		
	40-50	32	24.62%	32	45.71%	64	32.00%		
	50-60	28	21.54%	2	2.86%	30	15.00%		
Gender	Female	29	22.31%	45	64.29%	74	37.00%	68.793	<0.001*
	Male	101	77.69%	25	35.71%	126	63.00%		
Educational Level	Diploma or less	55	42.31%	47	67.14%	102	51.00%	28.428	<0.001*
	Bachelor's	60	46.15%	16	22.86%	76	38.00%		
	Master's or higher	15	11.54%	7	10.00%	22	11.00%		
Occupation	Nurse	53	40.77%	15	21.43%	68	34.00%	15.971	0.001*
	Physician	30	23.08%	12	17.14%	42	21.00%		
	Public Health Officer	25	19.23%	31	44.29%	56	28.00%		
	Other	22	16.92%	12	17.14%	34	17.00%		
Years of Experience	<5	13	10.00%	11	15.71%	24	12.00%	30.461	<0.001*
	5-10.	27	20.77%	23	32.86%	50	25.00%		
	10-15.	23	17.69%	21	30.00%	44	22.00%		
	15-20.	20	15.38%	14	20.00%	34	17.00%		
	>20	47	36.15%	1	1.43%	48	24.00%		
Work Assignment	Airport-based	87	66.92%	63	90.00%	150	75.00%	12.923	<0.001*
	External support	43	33.08%	7	10.00%	50	25.00%		
	First time	16	12.31%	8	11.43%	24	12.00%	5.350	0.069

Previous Hajj Participation	**1–3 times**	42	32.31%	34	48.57%	76	38.00%		
	More than 3 times	72	55.38%	28	40.00%	100	50.00%		
work place	**Pilgrims' Terminal**	59	45.38%	41	58.57%	100	50.00%	6.339	0.175
	North Terminal	20	15.38%	4	5.71%	24	12.00%		
	Pilgrims' Terminal and North Terminal	3	2.31%	3	4.29%	6	3.00%		
	Terminal 1	27	20.77%	11	15.71%	38	19.00%		
	Other	21	16.15%	11	15.71%	32	16.00%		
Increased financial incentives	**No**	53	40.77%	3	4.29%	56	28.00%	30.041	<0.001*
	Yes	*77*	*59.23%*	*67*	*95.71%*	*144*	*72.00%*		
One day off every 7 days	***No***	*81*	*62.31%*	*35*	*50.00%*	*116*	*58.00%*	2.829	0.093
	Yes	*49*	*37.69%*	*35*	*50.00%*	*84*	*42.00%*		
Reduced working hours	***No***	*70*	*53.85%*	*62*	*88.57%*	*132*	*66.00%*	24.450	<0.001*
	Yes	*60*	*46.15%*	*8*	*11.43%*	*68*	*34.00%*		

Table (2) Distribution of the relation of participant during and after Hajj with demographic data show regarding the age heave a significant relation were P-value= 0.001 while X^2 were 35.433 increase in 30-40 years during Hajj and after Hajj respectively were (39.23%,41.43%) while total 13.00% follow by 40-50 age were (24.62% , 45.71%) while total 32.00%. Regarding gender a significant relation between increase in male during and after Hajj respectively were (77.69, 35.71%) follow female were (22.31%, 64.29%) X^2 were 68.793 while P-value=0.001. Regarding educational Level a significant relation during and after Hajj increase in Bachelors respectively were (46.15, 22.86%), follow Diploma or less were (42.31% , 67.14%) were X^2 8.428 while P-value=0.001. Regarding Occupation a significant relation during and after Hajj increase in nurse were respectively were (40.77, 21.43%), follow Physician respectively were (23.08 %, 44.29%) were X^2 15.971 while P-value=0.001. Regarding Work Assignment a significant relation during and after Hajj increase in Airport-based were respectively were (66.92%, 90.00%), follow External support respectively were (33.08 %, 10.00%) were X^2 12.923 while P-value=0.001. Regarding Previous Hajj Participation a significant relation during and after Hajj increase in More than 3 times were respectively were (55.38% , 40.00%), follow 1–3 times respectively were (32.31 %, 48.57%) were $X^2$5.350 while P-value=0.001. Regarding work place a significant relation during and after Hajj increase in Pilgrims' Terminal were respectively were (45.38% , 58.57%), follow Terminal 1 respectively were (20.77 %, 15.71%) were X^2 6.339 while P-value=0.001. Regarding Increased financial incentives a significant relation during and after Hajj increase in Yes were respectively were (59.23%, 95.71%), follow No respectively were (40.77 %, 4.29%) were X^2 30.041 while P-value=0.001

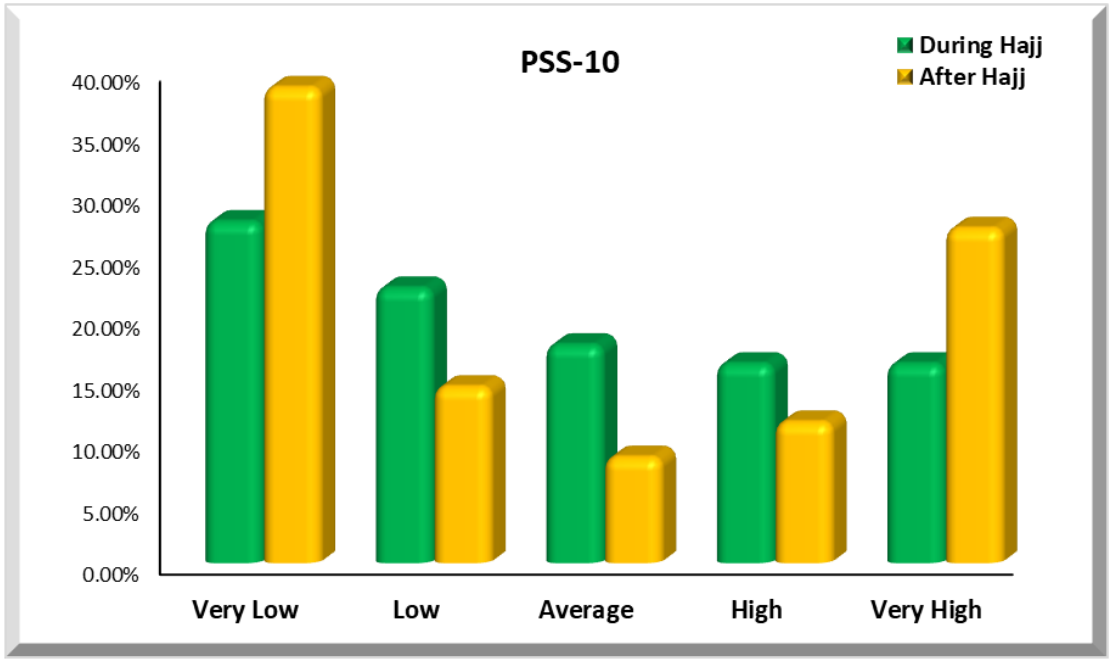
Table 3 Distribution of the participant to Perceived Stress Scale -10 (PSS-10) about groups during and after Hajj

	Groups		**Total**
	During Hajj	**After Hajj**	

		N	%	N	%	N	%
PSS-10	Very Low	36	27.69%	27	38.57%	63	31.50%
	Low	29	22.31%	10	14.29%	39	19.50%
	Average	23	17.69%	6	8.57%	29	14.50%
	High	21	16.15%	8	11.43%	29	14.50%
	Very High	21	16.15%	19	27.14%	40	20.00%
Total		130	100.00%	70	100.00%	200	100.00%
Chi-Square	X^2	9.444					
	P-value	0.049*					

Regarding during Hajj the majority of participants Very Low (27.69%) followed by low were (22.31%) but average were (17.69%) but high and very high respectively (16.15%, 16.15%) while after Hajj Very Low were (38.57%) followed by high and very high respectively were (11.43% , 27.14%) but low and average respectively were (14.29%, 8.57%) and total were (100.0%) while heave a significant relation were P-value <0.049 and X^2 9.444 .

Figure (1) Distribution of the participant to Perceived Stress Scale -10 (PSS-10) about groups during and after Hajj



Discussion

In short, our study clearly revealed dissatisfaction and discontentment regarding the management among nursing in Hajj pilgrims from countries. [18] Stress leads to behavioral and physical changes, which affect the nurse, as well as the nurse-patient relationship. The consequences of Stress are not limited to the personal well-being of nurses but are also associated with poorer patient outcomes, increased thoughts of quitting among nurses, and higher job turnover rates In particular Hajj pilgrims. [19]

Hajj is the largest and the most diverse mass gathering of people in the world. This mass gathering entails some of the world's most important public health. Many of these infections can avoided or averted by adopting appropriate preventive measures. Prevention of these infections needs effort to raise awareness on the health hazards during Hajj among HCWs, especially those working with pilgrims to be able to conduct effectively preventive measures, immunization and health education. [20]

This study revealed that all study participant socio demographic characteristics, this table shows that the highest proportion of participants age 30-40 years (40.00%) , the gender the majority of participant male were (63.00%), the level of education the majority of participant diploma or less , the Previous Hajj Participation the majority of participant More than 3 times were (50.00%) followed by 1–3 times were (38.00%) , the Reduced working hours the majority of participant No (66.00%) followed by Yes were (34.00%), (See table 1)

This study contributes to the existing knowledge of Stress by describing Stress in a large multinational nursing sample from different units. With an understanding of the negative consequences of Stress on patients, nurses, and organizations, the effect of Mass Pilgrim Nursing Assignment on the participating nurses' levels of Stress, the relationship of Stress with demographic and professional nurses' characteristics also examined.[21]

This study rigorously demonstrates that healthcare workers (HCWs) at experience significantly elevated stress during the Hajj season. The findings strongly support that increased patient load during Hajj causes higher stress among nurses workers. The Hajj pilgrimage draws over two million pilgrims annually [22], creating an immense operational burden. Such findings also supported by other studies suggesting that large numbers of patients accompanied by regular emergencies also lead to high pressure among medical personnel. [23]

In our study also In our study also Regarding Work Assignment a significant relation during and after Hajj increase in Airport-based were respectively were (66.92%, 90.00%), follow External support respectively were (33.08 %, 10.00%) were X2 12.923 while P-value=0.001. Regarding Previous Hajj Participation a significant relation during and after Hajj increase in More than 3 times were respectively were (55.38% , 40.00%), follow 1–3 times respectively were (32.31 %, 48.57%) were X25.350 while P-value=0.001. Regarding work place a significant relation during and after Hajj increase in Pilgrims' Terminal were respectively were (45.38% , 58.57%), follow Terminal 1 respectively were (20.77 %, 15.71%) were X2 6.339 while P-value=0.001. (See table 2)

This study presents strong evidence that longer working shifts during the Hajj contribute to the increased level of stress among healthcare staff. The stressful Hajj season could require back-to-back long shifts since it observed that nurses worked 12-hour shifts during Hajj [24]. The findings report that the whereas the overall stress is significantly greater during Hajj, [25]

In our study Regarding during Hajj the majority of participants Very Low (27.69%) followed by low were (22.31%) but average were (17.69%) but high and very high respectively (16.15%, 16.15%) while after Hajj Very Low were (38.57%) followed by high and very high respectively were (11.43% , 27.14%) but low and average respectively were (14.29%, 8.57%) and total were (100.0%) while heave a significant relation were P-value <0.049 and X2 9.444 . (See table 3)

Conclusion

This study unequivocally demonstrates that nurses at experience significantly higher perceived stress during the demanding Hajj season compared to normal working days. The psychological demand of the nurses during the Hajj season, especially at the major transit points, has been highlighted in this study. The results show that although stress increases during Hajj, this effect seems to be generally homogeneous across professions and levels of professional experience. Stress levels did not significantly differ according to the study findings for other variables such as job, workplace and previous Hajj. As such, the stress burden appears to be systemic at mass gatherings. The authors suggest that workload redistribution, structured rest periods, and other possible interventional components at the level of institutions are often more essential than individual-level traits, previous experiences, and the previous workplace. This study

adds to an ever-increasing body of literature that emphasizes the unique healthcare delivery challenges in the context of mass gatherings through Hajj specific data. Understanding this information is essential to determine what could be done in the future and help in public health preparedness by implementing tailored intervention in the future Hajj seasons.

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