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Original Article

Lifestyle Impacts of Extended Nursing Shifts Among Nurses: A Study in Tertiary Care Hospitals in Karachi, Pakistan

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ABSTRACT

A significant concern in healthcare settings is extended hours' effect on nurses' health. **Objective**: To explore the lifestyle impacts of extended nursing shifts among nurses at tertiary care hospitals in Karachi, Pakistan. **Methods:** This cross-sectional study was conducted in three tertiary care hospitals in Karachi, Pakistan, among 100 nurses. **Results:** Study findings reveal that majority, 87%, believe it hinders decision-making, while 88% see sleep deficits and 88% note time constraints for exercise. Communication quality is a concern for 76%. 78% see knowledge transfer issues when nurses hand over responsibilities, and 58% think religious activities are impacted. Opinions vary on patient care quality (50% positive). Stress levels concern 80%, social lives are disrupted for 91%, and physical health effects concern 93%. Additional worries include inadequate diet (39%), nurses working long shifts are exhausted (91%), child care neglect (89%), altered eliminatory patterns (84%), life expectancy (32%), memory problems (69%), hormonal disruptions (76%), workplace conflicts (88%), and infection risk (88%). Finally, 76% perceive high absenteeism. **Conclusions:** The findings underscore significant concerns about the negative impact of long working hours on nurses' health and performance. To address these issues, it is recommended that healthcare institutions prioritize implementing structured shift rotations and providing adequate breaks to mitigate the adverse effects of extended shifts on nurses' wellbeing and patient care quality.

INTRODUCTION

A workplace is described as a setting where management and employees work together to advance each person's health and well-being. Given that employees may spend up to 60% of their waking hours at work, the workplace is also widely acknowledged as an acceptable environment for health promotion and illness prevention. Non-communicable diseases (NCDs) like diabetes, hypertension, and coronary heart disease (CHD) are more common among workers, including nurses. The primary causes of non-communicable diseases (NCDs) include obesity, improper diet, smoking, and alcohol misuse [1]. According to scientific literature, exhaustion is a working hazard that seriously puts at risk the health of nurses and their patients. Fatigue distorts one's perception, logic,

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judgment, and decision-making capacity. These distortions show up as generalized slower brain functioning, which results in delayed reaction times, memory problems, and a decline in cognitive skills like attention and logical reasoning—qualities that are critical to the nursing profession [2]. Twelve-hour shifts or longer are becoming increasingly popular in nursing due to the claimed efficiency gains from minimizing the overlap between shorter periods that come with a three-shift schedule [3]. As the nursing profession is based on providing care 24 hours a day, the organization makes various shift schedules according to their convenience. Common work shifts 24 hours a day are divided into two (12-hour) or three (8-hour) shifts. The staff must be flexible and adaptable to various work schedules according to these shifts. Considering the impacts of shift work on staff health, it is a negative impact as fatigue and sleepiness are the most common issues among staff working long duty hours. Long shift schedules also affect nurses' physical and mental health, and their sleep and social life are distorted [4]. In healthcare settings, overtime is commonly used to address staffing needs brought on by either an increase in patients or a personnel shortage. Because there has been a reported lack of nurses and other healthcare workers for more than ten years, working overtime has become a crucial management strategy to guarantee that patients' demands are met [5]. It has been discovered that getting too little sleep affects motivation, mood, job performance, safety, and cognitive abilities [6]. Although several studies have been conducted on various outcomes in 12-hour shift patterns, these studies are generally of variable quality and result in a complex nature. It isn't easy to control extraneous variables, which include shift sequence, overtime, and break patterns. The nurse's age, grade, and experience might also affect the study findings [7]. Winwood described the potential effects of work-related factors as a loss of personal productivity and risk of compromised occupational health and safety. For nurses, the effects include patient-care errors, missed care, nurse injuries, social distortion, and drowsy driving[8]. According to Bankar (2017), systematic reviews have examined how working hours affect health. Still, it's interesting to note that none have looked at how 12-hour shifts, as opposed to 8-hour shifts, affect nurses' health, happiness, and job satisfaction [4]. Another analysis was conducted to examine how residents' working hours affected patient safety factors like death rates, prescription errors, and adverse events [9]. However, a further analysis looked at the distinctions between 8 and 12-hour shifts in the context of industrial worker outcomes and safety [10]. The researchers have selected this topic because they have observed that nurses working longer shifts affect their health. Therefore, by observing this, they preferred this topic and wanted to collect data from different professionals. The researchers want to explore how much nurses' health is affected due to long hours of shift. Excessive duty hours produce safety hazards for registered nurses (RNs) and their patients. Nurses experience increased workload and complexity in patient care, and the consequences of excessive work hours can potentially decline performance and fitness to practice [11]. Extended-hour shifts can affect nurses' health, not only for the nurses but also for the Hospital and patients' care. A study of over 22,000 nursing professionals in the United States reported that more than 80% of nurses were satisfied with hospital scheduling practices. However, nurses' percentage reporting exhaustion and intention to leave the job increased gradually as shift length increased, up to two and a half times higher for nurses who worked long shifts than for nurses who worked for 8 to 9 hours [12]. The study found that excessive duty and unsocial working hours, strict hospital policies regarding working hours, and the inability to leave duty on time were the main factors associated with long duty hours in another study on the detrimental effects of long working hours among nurses. The most common adverse effects of long duty hours were health problems, terrible behaviour at work, an inability to balance work and family obligations, discontent in a relationship, and a failure to meet demands [13].. Another study shows the negative impacts of shift work and long working hours and reported that shift work and long working hours elevate the possibility of compromised performance, obesity, injuries, and a broad range of chronic diseases. The study concluded that sleeplessness was a severe consequence of working long hours duty. Fatigue can directly affect the physical health of nurses by elevating their risk of injuries, specifically musculoskeletal and "needle-stick" injuries [14]. Therefore, this study aims to explore the lifestyle impacts of extended nursing shifts among nurses at tertiary care hospitals in Karachi, Pakistan

METHODS

The study was conducted at Jinnah Medical College and Hospital (JMCH), Medicare Cardiac and General Hospital (MCGH), and The Indus Hospital in Karachi, Pakistan. This was a cross-sectional study among 100 nurses working in selected three Hospitals. Staff Nurses (RN, BSN(G)) currently working in the Hospital. This study took about four months, from September 2021 to December 2021. The respondents were selected by convenient sampling technique. The sample size was calculated through Open Epi with 95% confidence interval version 3.0. Data was collected through a self-developed questionnaire. (5-Likert Scale). Participants' selection was based on

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convenience as nurses are committed to fulfilling their duty tasks within duty time; however, with cooperation, participants were helpful and gave us time to take valid information from them through our self-developed questionnaire (20-question 5-Likert Scale). Three experts checked the tool, and the validity was assessed at 0.81. Participants respectfully returned their questionnaire papers. It shows that they were interested in the study and answered each question. A 100-participant sample was collected through division; 34 participants were selected from Jinnah Medical College Hospital (JMCH), 33 Medicare Cardiac and General Hospital (MCGH), and 33 The Indus Hospital participants. All the nursing students, aid nurses, and nurses on leave or absent were excluded from the study. Before the data collection, the relevant institute gives the study approval. After the study approval, data collection permission was taken from the HOD of the relevant department. Permission for the data collection was taken from the selected hospitals. The consent form was taken from each respondent before filling out the questionnaire. Ethical principles of beneficence (doing good) and non-maleficence (not harm) were followed to ensure that the study's design and procedures did not harm the participants in any way. The data was analyzed using the Statistical Package for Social Sciences (SPSS version 20.0).

RESULTS

Table 1 provides demographic information on the participants, showing that 60% of the respondents are male, while 40% are female. In terms of age distribution, the majority of respondents fall into the 25-29 age group (40%), followed by the 19-24 age group (37%), and a smaller proportion (23%) are above 30 years old. Regarding education, 64% of the respondents have a Diploma in Nursing, while 36% hold a BS in Nursing.

Table 1: Demographic characteristics of the participants n=100

Variables	Frequency (%)
Gender	
Male	60 (60%)
Female	40 (40%)
Age	
19-24	37 (37%)
25-29	40 (40%)
Above 30	23(23%)
Education	
Diploma Nursing	64 (64%)
BS Nursing	36 (36%)

Table 2 shows the results of participant's responses to every statement in which 87% of respondents either agree or strongly agree that nurses cannot make effective patient-related decisions due to long working hours. Sleeping deficits appear to be a common concern, with 88% of respondents agreeing or strongly agreeing that nurses working longer shifts experience this issue. 88% of respondents also agree or strongly agree that nurses struggle to find time for exercise and leisure activities due to their extended work hours. There is a notable concern about the therapeutic and professional quality of communication among nurses working longer shifts, with 76% of respondents either agreeing or strongly agreeing that it is not up to the mark. Regarding handing over responsibilities to other staff, 78% of respondents either disagree or strongly disagree that nurses provide adequate knowledge, indicating a potential knowledge transfer issue. Surprisingly, 58% of respondents disagree or strongly disagree that nurses who perform long duty hours can perform their religious activities on time. Opinions are divided regarding the quality of patient care provided by nurses working long shifts, with only 50% agreeing or strongly agreeing that they give the best care. Stress levels are a significant concern, with 80% of respondents agreeing or strongly agreeing that nurses experience high stress levels during long shifts. According to 91% of respondents who agree or strongly agree with this statement, nurses' social lives seem to be disrupted. Physical health effects are evident, as 93% of respondents agree or strongly agree that nurses experience adverse effects such as dark circles, weight loss, or gain due to long duty hours. Diet intake is seen as inadequate by 39% of respondents, reflecting concerns about nutritional well-being. Surprisingly, only 91% of respondents agree or strongly agree that nurses working long shifts are exhausted, indicating some variability in perceptions of fatigue. Concerns about neglecting children's care are evident, with 89% of respondents agreeing or strongly agreeing that this is an issue. Eliminatory patterns are altered according to 84% of respondents, suggesting a potential health impact of long shifts. 64% of respondents believe that nurses' life expectancy is affected due to long duty hours. Memory problems are acknowledged by 69% of respondents, who agree or strongly agree that nurses' memory is adversely affected. Hormonal disruptions concern 76% of respondents, indicating perceived health risks associated with extended work hours. Regarding workplace conflicts, 88% of respondents either agree or strongly agree that nurses working long hours face more conflicts than those working shorter shifts. Infection risk is a concern, with 88% of respondents agreeing or strongly agreeing that nurses working longer shifts are more prone to nosocomial infections. Finally, absenteeism is perceived as high, with 76% of respondents agreeing or strongly agreeing that the absenteeism ratio is elevated among nurses working longer shifts.

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Table 2: Statements Related to The Impact of Long Duty Hours on Nurses

Statements	Strongly Disagree	Disagree	Neutral	Agree	Strongly Agree
Nurses are unable to make effective decisions due to extended hours of duty. (Patient-related decision)	6%	6%	1%	44%	43%
Sleeping deficit is common among nurses working for longer shifts	8%	3%	1%	35%	53%
Nurses are unable to find time for exercise and leisure activities.	5%	5%	2%	44%	44%
Communication is not therapeutic or professional for nurses working longer shifts	11%	12%	1%	38%	38%
While handing over, nurses provide inadequate knowledge to other staff	6%	15%	1%	38%	40%
Nurses who perform long duty hours can perform their religious activities on time	36%	22%	1%	23%	18%
Nurses who work for 12 hours or more provide the best care to the patient	24%	19%	7%	27%	23%
The stress level of nurses is high during long shifts.	5%	7%	8%	48%	32%
The social life of nurses is disrupted due to long shifts	7%	1%	1%	43%	48%
Due to long duty hours, nurses have harmful body effects such as dark circles, weight loss, or gain	6%	0%	1%	33%	60%
Diet intake is adequate, according to the body needs of nurses	18%	21%	1%	30%	30%
Nurses working long shifts are exhausted	1%	1%	7%	34%	57%
Children care is neglected by parent nurses who work for extended duty hours	6%	2%	3%	33%	56%
The eliminatory pattern is altered due to long duty hours	8%	2%	6%	46%	38%
Life expectancy is affected due to long duty hours	22%	10%	4%	44%	20%
The memory of nurses is badly affected by performing longer shifts	10%	14%	7%	41%	28%
Hormonal levels are disrupted due to long duty hours	`10%	5%	9%	43%	33%
Nurses who work long duty hours face more conflicts as compared to nurses working eight duty hours or less	7%	2%	3%	39%	49%
Nurses working longer shifts are more prone to nosocomial infections.	6%	3%	3%	36%	52%
The absenteeism ratio is high for nurses working longer shifts.	12%	8%	4%	36%	40%

DISCUSSIONS

The safety and quality of healthcare can be influenced by the atmosphere of health organizations. Workplace stress, a lack of employees, and time constraints are among the features of work environments that are barriers to providing quality nursing care. Despite the expanding capacities of healthcare systems, there is growing global concern regarding the effects of nurses' extended work hours in guaranteeing patient safety and nurses' health [15]. Longer working hours may result in shorter breaks between shifts, negatively affecting nurses' health and raising their risk of burnout and other workplace risks [16]. Therefore, this study aims to identify the lifestyle impacts of extended nursing shifts among nurses at Tertiary Care Hospitals in Karachi, Pakistan. Present findings show that 43% disagree or strongly disagree that nurses who work 12 hours or more provide the best care to the patient. Another study also found that long duty hours were linked with patient best and quality care [15]. Best and quality care is very important for the patient because high-quality, person-centred care successfully preserves or enhances health and is "respectful of and responsive to individual preferences, needs, and values [17]. Present findings show that 60% strongly agree that long duty hours can cause obesity. In this regard, another study found that 73% reported obesity [18]. Additionally, compared to those with an average body mass index (BMI), those who were overweight had a higher occurrence of illnesses and health issues [1]. Additionally, shift and rotating night shift workers have been found to have a high prevalence of health-related disorders and risk factors, including obesity, overweight, physical inactivity, and unhealthy eating habits [19, 20]. Moreover, the present study found that 44% reported poor physical activity. Additional research showing that nurses do not achieve the recommended physical exercise necessary for health benefits corroborates these findings [21, 22]. In our study, 57% felt exhausted by working long hours duty. In other research, it was found that 80% of nurses experienced fatigue [23]. Present findings show that 44% agreed we don't have time for leisure activities. According to Banakhar (2017), only 9% of nurses found time for leisure activities and worked longer shifts, while our data showed that 88% of nurses did not find time for leisure activities [4]. Current findings revealed that 56% strongly agreed that their children's care was neglected due to long duty hours. According to another study, 75% to 81% of nurses preferred to work 8 hours rather than 12 hours duty for their children's care [7]. Present findings show that 91% of respondents agree or strongly agree that nurses working long shifts are exhausted. Similarly, another study found a considerable correlation between work hours and exhaustion [24]. Comp compelling evidence links exhaustion from long work hours to unfavourable outcomes and mistakes in patients and healthcare professionals. The consequences of voluntary paid overtime on adverse effects for patients and

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healthcare workers are not addressed by proposed or passed laws restricting mandated overtime for nurses [5]. Another study found that exhausted Nursing staff may be more likely to make crucial safety errors when administering medications, using clinical judgment, caring for patients, or overlooking mistakes made by other members of the healthcare team, such as doctors or pharmacists [25]. Present findings show that 32% strongly agreed that long duty hour causes stress. In this regard, another study found that most participants agreed with stress that is caused by long duty hours [26]. Many workers consider extended work hours to be a cause of stress, suggesting there may be an issue in the workplace. To support the well-being of their employees, hospitals should reevaluate their working hour rules and scheduling procedures. Present findings show that sleeping deficits are a common concern, with 88% of respondents agreeing or strongly agreeing that nurses working longer shifts experience this issue. Another study found that Short sleep duration has been linked to adverse health effects for a long time [27]. Poor sleep quality and disruptions are frequent and related to several physical and mental health issues [28]. Present findings reveal that 48% agree that nurses' stress level is high during long shifts. Stress at work can harm a person's physical and mental well-being, which can lower productivity on the job by raising stress levels [29]. Another study also found that primary sources of stress in the profession are high expectations, long-hour duty, excessive responsibility, and minimal authority [30]. Stress at work can have a negative impact on a nurse's quality of life and, in turn, care quality. Given that nurses work with people, their quality of life is essential because when they are happier, they can deliver services more effectively [31].

CONCLUSIONS

The findings show that long-hour workers frequently experience sleep impairments, impairing their capacity to make wise patient decisions. Recreation, physical activity, and effective communication all decline, and knowledge transfer during handovers are insufficient. In addition to negative impacts on their physical health, such as stress, exhaustion, and changed elimination patterns, nurses often face disruptions in their social lives. Possible childcare neglect, memory issues, hormone imbalances, a rise in workplace conflicts, an increased risk of illness, and a greater absence rate are more concerns.

Authors Contribution

Conceptualization: TA
Methodology: NM, NK
Formal analysis: NM
Writing, review and editing: RAK, NR, UG, TR, AB, AN

All authors have read and agreed to the published version of the manuscript.

Conflicts of Interest

The authors declare no conflict of interest.

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