

The Relation Between Job Demands and Safety Attitudes among staff Nurses



1Lamees Elsayed El-zohery, 2Nehad Saad El-wkeel, 3Ahlam Mahmoud El-shaer

1B.Sc.in Nursing, 2Lecturer of Nursing Administration-Faculty of Nursing, Mansoura University,

3Professor of Nursing Administration-Faculty of Nursing, Mansoura University- Egypt

1-ABSTRACT

Background: Nursing is the backbone of the healthcare sector. They work hard inspite of job demands that cause tension and stress. These demands effect on nurses performance and on their safety. The management should treat staff nurses as a human, give them rest as possible and provide appropriate assignments according to their abilities to help them cope with job demands and achieve safety attitudes. So, the study aimed to investigate the relation between job demands and safety attitudes among staff nurses. **Method:** descriptive correlational design was used and a convenient sample of (319) staff nurses was included, whom working at Dikirnis General Hospital by using two tools as: job demands and safety attitudes questionnaire. **Results:** the majority of staff nurses reported moderate level of job demands, more than half of staff nurses had negative perception to safety attitudes, and there was highly statistically significant negative relation between total job demands and total safety attitudes as perceived by staff nurses. **Recommendation:** Applying of training program for staff nurses continuously on safety issues, how to deal in critical situation, cultural difference and on their area of practice. Development of a favorable work environment by providing sufficient nursing staff and resources to enhance nurses' ability to deal with work demands and decrease safety risks on nurses

Key words: Job demands, Safety attitudes, Staff Nurses

2.Introduction:

The health care sectors undergo a lot of changes. Governmental measures, system reforms, and lower budget have had a tremendous impact on the day-to-day work of staff nurses in health care delivery system. Nursing ranks 12 among the top 20 stressful occupations. Staff nurses often find themselves constricted by direct and continuous contact with clients, disruptive patients, mounting desk work, excessive workload, and shift work (Kar & Suar, 2014). Shortage of staff nurses, increasing job demands, increasing patients' health needs and demands, and the industrial health issues are among the main concerns that staff nurses are challenged with nowadays and for the next few decades (Bani-Hani, Hamdan-Mansour, Atiyeh & Alslman, 2016)

Job demands are the mental and physical requirements that cause staff nurses exhaustion, increase the risk of health problems, and contribute to poor work outcomes (Castner, 2019). The job demands are unwanted environmental factors which have a negative effect on the working performance of staff nurses by causing the physical and psychological symptoms of burnout, so the type of job demands determines the type of burnout symptoms. (Khan, Yusoff & Anwar, 2014).

The complex nature of staff nurses work requires them to cope with a higher level of emotional, sensorial, and cognitive demands as types of job demands that deal with different nature and condition of patients. Emotional demands are associated with strong internal experiences such as frustration. While sensorial demands are associated with physical exertion such as hand movements and cognitive demands associated with mental exertion in performing tasks such as remembering each patient's information (Tahir, Hussein& Rahim, 2020).

High job demands create a constant physical and mental stress on staff nurses to gather extra energy to meet demands. Such stress causes fatigue and emotional excitement. There are ten dimensions for job demands: work related travel, on call, rural healthcare ethics, preparedness/extended scope of practice, cultural issues, equipment and supplies, isolation, workload, scheduling and safety (Penz, Kosteniuk, Stewart, MacLeod, Kulig & Karunanayake, 2018). Persistent job demands deplete staff nurses physical and mental resources, leading to poor organizational outcomes such as

low organizational performance or high turnover. (Xian, Zhai, Xiong & Han, 2019).

These job demands impact on professionals' well-being and performance as well as the presence of stressors are associated with self-reported inadequate practices. There is a link between job demand and reduced productivity, work stress, increased medical errors, and mental health problems (Costa, Passos, Silva, Sacadura-Leite, Tavares & Spanu, 2014). Exposure to job demands such as job insecurity, disclosure of job requirements and work family conflict lead to insecure treatment and pose a serious threat to the health of staff nurses and patients (Bronkhorst, 2015).

Moreover, job demands affect all aspects of staff nurse's health: cognitive, psychological, physiological, and behavioral. In addition, in highly stressful situations, concentration decreases and human error increases, leading to accidents, and this affects the attitude of staff nurses towards safety (Yari, Normohammadi, Khosravizadeh & Asadi, 2018). Workplace safety is important to any organization, as accidents can cause damage, nurses' injuries, or both, resulting in the loss of staff nurses and the financial costs of the organization. (He, Payne, Yao, & Smallman, 2020).

Nursing safety is the minimum acceptable value to reduce the risk of unnecessary health care related harm (Lee, Scott, Dahinten, Vincent, Lopez & Park, 2019). Safety culture refers to the holistic behavior of staff nurses and organizations based on shared beliefs and values that aim to minimize the potential for harm. (Nie, Mao, Cui, He, Li & Zhang, 2013).

The attitude can be defined as a situation in which one learns to think, feel, and behave in a certain way with a particular object. (Laukkanen, Vehviläinen-Julkunen, Louheranta & Kuosmanen, 2019). Safety attitudes are defined as the characteristics of staff nurses related to the tendency to respond to safety situations or to the relative beliefs, feelings, and behaviors of staff nurses toward safety in the workplace (Al Faqeeh, Khalid & Osman, 2019).

Safety attitudes includes many dimensions as teamwork climate which is a perceived quality of collaboration among nurses, job satisfaction which measures the positivity of work experience, safety climate which ascertains a strong and proactive commitment of the organization to safety, stress recognition is the recognition of the impact of stress on performance, working conditions that

reveal the quality of the work environment and logistics support, finally perceptions of management is consent to management actions (Haerkens, van Leeuwen, Sexton, et al., 2016).

The safety attitudes help in assessing the safety culture for healthcare organizations, to measure the staff nurses perceptions toward safety and improve patient safety as well as to reduce medical errors (Lee, Huang & Wu, 2016). Understanding the safety attitude among staff nurses can help to increase the awareness and practice of them and prevent patient safety errors (Al- Mugheed & Bayraktar, 2020). Also, the improvement of safety attitudes, help in maintaining safe patient environment and safe practices among health care professionals (Brasaite, Kaunonen, Martinkenas, et al., 2016).

Significant of the study

Job demands and safety attitudes are important factors that have a direct effect on the staff nurse work in any health organization. The workplace demands put the staff nurses on work stress, which influence on her performance in the work. These demands lead to a lot of errors and reduce staff nurse's safety in workplace, which in turn increase absenteeism of staff nurses and increase their intention to leave the work.

Many staff nurses are unable to cope with job demands as they think of her children, when she goes home for her family, the length of her road to go to her work and the workload of her job, therefor, the level of errors and risks increase. Staff nurses psychological wellbeing are affected by these demands, which has a direct effect on productivity and safety attitudes of the staff nurses. The staff nurse's cooperation with job colleagues are decreased, job conflicts increased because of workplace stressors, so that they can't achieve positive attitude of safety.

The health organization able to retain the staff nurses, if they help them to be comfortable at their work, help them to be safe and treating them as human and they are the most important for this work, so the aim of the study is to investigate the relation between job demands and safety attitudes among staff nurses.

Aim of the study:

The study aims to investigate the relation between job demands and safety attitudes among staff nurses.

Research questions:

Q1: What are the job demands perceived by staff nurses?

Q2: What are the safety attitudes among staff nurses?

Q3: What is the relation between job demands and safety attitudes among staff nurses?

3. Method

3.1 Research design:

Descriptive correlational design was used to achieve the goal of this study which assess job demands and safety attitudes among staff nurses.

3.2. The study setting:

The study was conducted at Dikiris General Hospital that provide health services to seven centers in Dakahlia governorate, is located in the North Eastern region of Delta, Egypt. It consists of four building. It provides inpatient care to approximately 912 patient and Outpatient care to approximately 3000 patients monthly.

3.3 Subjects of the study:

It includes a convenient sample of (319) staff nurses aged from (20-25) years, majority of them were female having a technical nursing degree with (1-5) years of experience, who choosing to participate in the study at time of data collection in the previously mentioned study setting over the period of two months from August 2020 and completed by the end of October 2020. Data collected through daily meeting with staff nurses on different shifts and explain the aim of the study to them. The time needed to fill the sheets is 20 minutes.

3.4 Tools of data collection:

Two tools were used for data collection as follow:

Tool I : Job Demands Questionnaire

It includes two parts as follow:

Part I : Personal characteristics of staff nurses as age, gender, educational level and years of experience.

Part II : Job Demands: This part was developed by **Penz, et al, (2018)**. It is aimed to assess staff nurses job demands. It consists of 10 dimensions each dimension contain 6 items includes: work-related travel, on-call, rural healthcare ethics,

preparedness/extended scope of practice, cultural issues, equipment and supplies, isolation, workload, scheduling and safety.

Each statement response will be measured based on five-point Liker scale ranging from 1(Strongly Disagree), to 5 (Strongly Agree). The scores of negative direction statements were reversed before computing the total score of nurses' job demands items. Scores were classified

into three levels based on cut of point high >75%, moderate 50-75%, and low <50%.

Tool II: Safety Attitudes Questionnaire (SAQ):

This tool was developed by **Sexton, et al, (2006)**. It is aimed to assess staff nurses safety attitudes. It includes 30 items, categorized into 6 subscales include, the teamwork climate (6 items), the safety climate (7 items), job satisfaction (5 items), perceptions of management (4 items), stress recognition (4 items) and working conditions (4 items).

Each statement response will be measured based on five-point Liker scale ranging from 1(Strongly Disagree), to 5 (Strongly Agree). To calculate the total score of safety attitudes, the items of stress recognition domain were reversed due to its negative direction with the other items of the scale. The scores of the statement of each component were summed up, converted into percent score, before computing the total score of nurses safety attitudes. The total score were divided into two levels negative safety attitudes (<60%) and positive safety attitudes (≥60%).

3.5 Validity and reliability:

It was done via a panel of five experts of academic nursing administration staff from Faculty of Nursing Mansoura University, they are three professor, one assistant professor and one lecturer, who reviewed the tools for clarity, relevancy, applicability, comprehensiveness, understanding and ease for measurement and according to their opinions modification were applied. The reliability is tested via the pilot participants by using Cranach's Alpha test, for two tools job demands and safety attitudes questionnaire, which was 0.92 and 0.91 respectively.

3.6 Pilot study:

A pilot study was conducted with 10 % (35) staff nurses that randomly selected and were excluded from the total sample to evaluate the clarity, applicability and feasibility of the tools and any necessary changes were made based on their responses.

3.7 Ethical consideration:

Ethical approval was obtained from research ethics committee of the Faculty of Nursing Mansoura University. An official permission to conduct the study had obtained from the responsible administrators of the hospital. Privacy and confidentiality of the collected data were assured. Participation in research is voluntary and participation had assured that withdrawing from the study had assured at any stage without responsibility.

3.8. Statistical analyzing:

The collected data were organized, tabulated and statistically analyzed using SPSS software V 22. The categorical variables were represented as frequency and percentage. Continuous variables were represented as mean, and standard deviation. Pearson correlation coefficient test was conducted to test the association between continuous variables. Statistically significant was considered as (p-value ≤ 0.01 & 0.05).

4. Results:

Table (1): Illustrate the mean scores of studied staff nurses' job demands items. This table shows that the total job demands mean score were (187.77±17.84). The highest mean of job demands were (21.76±3.78) with rank (1) toward work related travel item, followed by safety item with mean score (20.16±3.01). But the lowest mean of job demands were (16.94±2.63) with rank(10) to isolation item, followed by cultural issues item with mean score (17.36±3.06).

Figure (1): Illustrate the levels of job demands among the studied staff nurses. This figure shows that majority (96.2%) of the staff

nurses were moderate level toward job demands, while (0.9%) were low level of it.

Figure (2): Illustrate the mean scores of safety attitudes items among the studied staff nurses. This figure shows that the total safety attitudes mean score were (85.57±18.02). The highest mean were 66.95% (13.39±3.40) with rank (1) to stress recognition item followed by teamwork climate item 61.13% (18.34±3.73) , while the lowest mean were 52.1% (10.42±3.90) with rank (6) to perception of management item followed by working condition item 54.8% (10.96±3.81).

Figure (3): Illustrate the safety attitudes items level among studied staff nurses. This figure shows that more than half (53%) of studied nurse had negative level toward safety attitudes, while (46%) had positive level toward it.

Figure (4): Illustrate the relationship between total job demands and safety attitudes. This figure show that there is highly statistically significant negative relation between total job demands and total safety attitudes as perceived by the studied staff nurses.

Table (1): Mean scores of studied staff nurses' job demands items (n=319)

1. Work related travel	6	12.0-30.0	21.76±3.78	1
2. On-call	6	9.0-29.0	18.19±3.22	7
3. Rural healthcare ethics	6	10.0-27.0	18.74±2.81	5
4. Preparedness/extended scope of practice	6	6.0-29.0	18.70±2.69	6
5. Cultural issues	6	9.0-26.0	17.36±3.06	9
6. Equipment and supplies	6	11.0-26.0	18.78±2.87	4
7. Isolation	6	10.0-26.0	16.94±2.63	10
8. Workload	6	6.0-30.0	18.81±4.14	3
9. Scheduling	6	8.0-30.0	17.96±3.48	8
10. Safety	6	13.0-30.0	20.16±3.01	2
Total job demands	60	141.0-244.0	187.77±17.84	

Figure (1): Levels of job demands among the studied staff nurses (n=319).

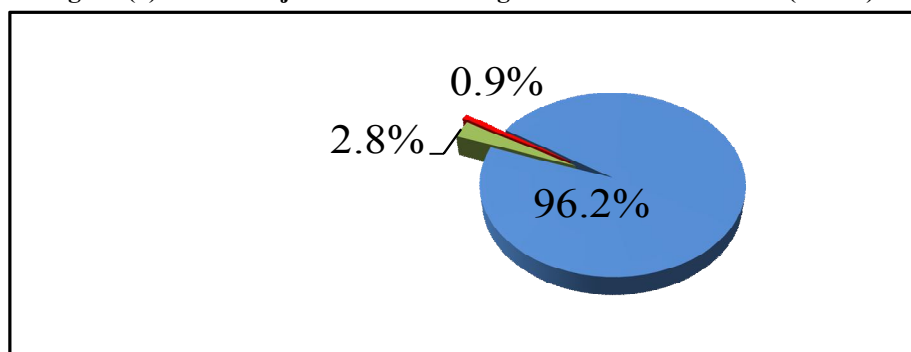


Figure (2): Mean percentage & ranking of Safety attitudes subscale among the studied staff nurses (n= 319)

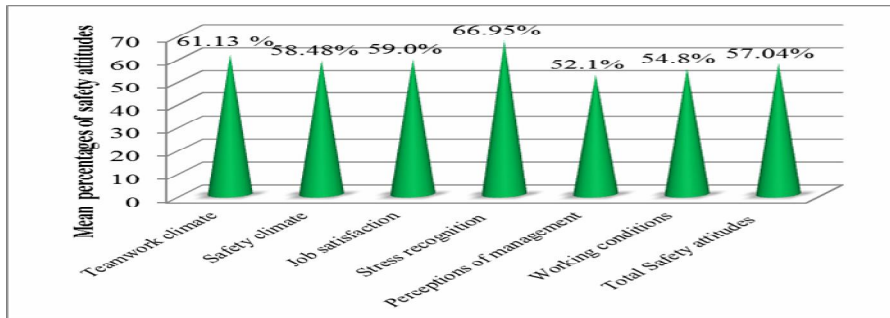


Figure (3): Safety attitudes items level among studied staff nurses (n= 319).

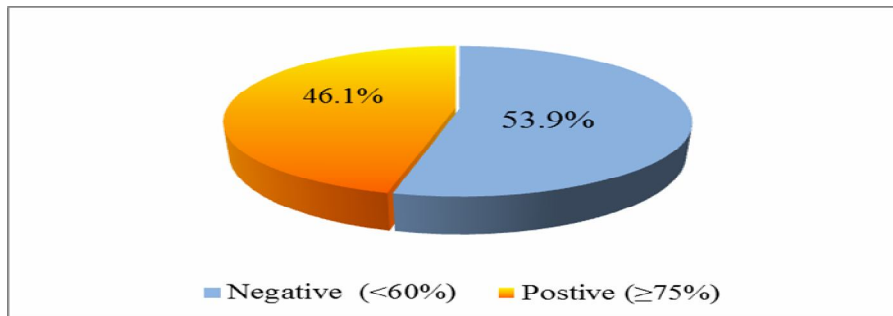
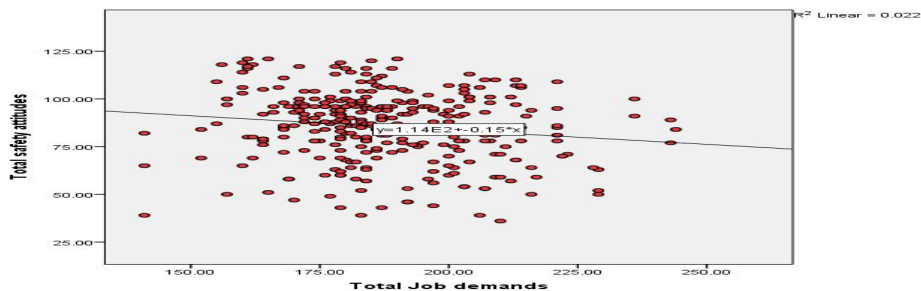


Figure (4): Relationship between total job demands and safety attitudes of the studied staff nurses (n=319)



5. Discussion:

Nurses are the largest sector of healthcare professionals and are at the heart of high-quality care. (Wu, Wang & Liu, 2020). The concept of job demands is useful to identify the challenges and barriers they face in their day-to-day work, allowing staff nurses to be safe with their work. (Wang, 2020). Job demands are those aspects of work that cost energy, such as workload, complex tasks, and conflicts (Bakker & Demerouti, 2018). Job demands are classified as some of the more complicated work aspects which could arise from a job or organization. Job demands have been related to organizational outcomes including staff nurse engagement and burnout performance citizenship and resistance to work behaviors and workplace safety (Downes, Reeves, McCormick, Boswell & Butts, 2020).

The present study aimed to investigate the relation between job demands and safety attitudes among staff nurses through assessing job demands as perceived by the staff nurses, identifying safety attitudes as perceived by staff nurses and investigating the relation between job demands and safety attitudes. The present study finding revealed that, the highest percent of staff nurses were agree and had the highest mean score to their job demands, especially to work related travel, safety items of job demand.

Work related travel which mean that its necessary for staff nurses to take a means of transportation to go to their work. Staff nurses at this study were agree and strongly agree that travelling had no effect on their families, effect on their health and is tiring for them. The finding is supported by a research conducted in Norwegian by (Bonsaksen, Thørrisen, Skogen & Aas, 2019),

they stated that a job requiring working away from the normal workplace had a high mean score. In opposite side, a study conducted in Iran by **(Jalilian, Shouroki, Azmoon, Rostamabadi & Choobineh, 2019)**, not support the present study, and asserted that psychological demand had a higher mean score.

Moreover, staff nurses reported agreement and high mean score to safety item of job demands. This may be due to staff nurses believe that their personal safety in the workplace is at risk. and they are concerned for the safety of the patient and their families. The study is agreeing with the study conducted in Canada by **(penz, et al., 2018)**, they stated that safety item demonstrated the highest level of agreement among studied staff nurse. The finding are inconsistent with **(Colombo & Zito, 2014)**, in Italy, because safety demands of patient are decreased due to lower job enjoyment of nurses.

Also, the present study revealed that, staff nurses reported disagreement and low mean score to isolation and cultural issues items of job demands. Isolation had the lowest mean score due to majority of nurses work on non-critical department, so they don't feel of isolation anymore. Also, they can't debrief with other after difficult experience because of workload and stress. A research conducted in Turkey by **(Amarat, Akbolat, Ünal & Güneş, 2019)**, support the present study finding, and found that the lowest mean score was related to workplace loneliness. On the other side, a study conducted in Shahroud and Urmia University of Medical Sciences, Iran by **(Bagheri, et al., 2019)**, reported that isolation as a result of irregular nursing schedule had a higher mean score.

Cultural issues items disagreement and low mean score may be due to some nurses are unable to accept cultural difference of other health care provider from peers and patients and can't deal with them. A research performed in Turkey by **(Yilmaz, Toksoy, Direk, Bezirgan & Boylu, 2017)**, support the present study, whom proved that nurses had problems with cultural issues and need training on it. While, a study done in Seoul, Korea by **(Lee & Jang, 2019)**, disagree with the present finding, whom reported that nurses accept cultural issues because it help in improving the quality of work life and their intention to stay.

Therefore, the present study finding revealed that the studied staff nurses had moderate level to total job demands. This may be related to travel to the work, excessive workload during COVID 19 which makes nurses feel stressed

because the hospital call her while on day off, the work environment not safe and there is lack of resources. The finding is supported with the study done in nursing homes in the Netherlands by **(Van Den Tooren & De Jonge, 2008)**, whom demonstrated that studied nurses had a moderate perception toward job demands. On the other hand, **(Lindfors & Hansen, 2018)**, in Stockholm county council, Sweden, not supported the present study, stated that studied nurses had significantly higher perception toward total job demands at the private hospitals.

Regarding to safety attitudes, staff nurses reported agreement and high mean score to stress recognition followed in order by teamwork climate items of safety attitudes. Stress recognition may be raised due to excessive workload and fatigue that impair their performance especially during COVID 19 pandemic where there is lack of resources, staff nurses feel stressed and fear from acquiring infection and transferring it to their families. This finding is supported by a research made in Italy by **(Nguyen, Gambashidze & Ilyas, et al., 2015)** whom proved that nurses perception to stress recognition were high. Also, **(Cui, Xi & Zhang, et al., 2017)**, in teaching hospitals in Beijing, disagree with the present study and showed that the studied nurses perception for stress recognition were low.

Moreover, teamwork climate item of safety attitudes is the second ordered high agreement and mean score. This may be due to staff nurses can ask question easily about any misunderstanding, they can take support from other nurses and physician and nurses work as a well coordinated team. This finding in agree with a research conducted in Slovenian out-of-hours primary care clinics by **(Klemenc-Ketis, Maletic & Stropnik, et al., 2017)**, who reported that nurses were agree with teamwork climate, because nurses input is well received in this clinics. In version, a research done in two acute-care teaching hospitals in Seoul, Korea, by **(Hwang & Ahn, 2015)**, not support the present finding. This may be due to the lack of significant effort for effective teamwork in most Korean hospitals, although the importance of teamwork is widely recognized.

While nurses reported disagreement and low mean score to perception of management and working condition items of safety attitudes. Perception of management had the lowest mean score may be due to nurses efforts not supported by the management, there is insufficient number of staff and they can't know adequate information about event that effect on their work. This result is agree with a study done in United States by

(Rigobello, et al., 2012), whom reported that nurses were completely and partially disagree to perception of management. While, a study conducted in western Turkey by (Bahar & Önlü, 2020), not supported the present finding, they proved that perception of management is better for nurses.

Working condition items disagreement and low mean score may be due to the hospital does not treat staff nurses problems constructively and not all diagnostic and therapeutic information about patient available for staff nurses. This result is agree with a study done in a large Irish university teaching hospital, by (Gleeson, Tobin & O'Brien, et al., 2020), due to the staff nurses were dissatisfied with their work environment, staffing levels and the quality of equipment and resources. In contrary, a research conducted in two of the major hospitals in the eastern province of Saudi Arabia by (Abdullah & Rachel, 2020), not support the study finding due to sufficient number of staff, lower bed capacity and low nurses' workload.

Therefore, the present study affirmed that more than half of staff nurse had negative perception level toward safety attitudes. This may be due to excessive workload that impair their performance, insufficient number of nurses to handle patient number and the nurses do not receive adequate training on safety attitudes. The finding is agree with a research conducted in Saudi Arabia by (Alzahrani, Jones & Abdel-Latif, 2019), they revealed that nurses had negative perception toward safety attitudes than doctors. In opposite side, a study conducted in America by (Dorigan, Mingato & Guirardello, 2020), whom reported that studied nurses had positive perception toward the safety attitudes.

Regarding to relation between job demands and safety attitudes. The present study revealed that there is highly statistically significant negative relation between total job demands and total safety attitudes as perceived by the staff nurses. This may be due to excessive workload, insufficient staff, insufficient training on how to use equipment and supplies and lack of support from management, all of these has a decrease effect on nurses to achieve safety attitudes effectively. The finding is agree with a study performed in southwestern Norway by (Seljemo, Viksveen & Ree, 2020), proved that job demands had negative effect on safety attitudes. Inversion with the present study, a study made in Taiwanese regional teaching hospitals by (Wang, Chou & Lai, 2019), they reported that there is positive effect of job demands on safety attitudes.

6. Conclusion

From the present study, it was concluded that:

Based on the study findings, it was concluded that staff nurses at Dikirmis General Hospital had moderate level of perception about job demands and had a negative level of perception about safety attitudes. Also, there is highly statistically significant negative relation between job demands and safety attitudes.

7. Recommendations

Based on the results of this study, it was recommended that:

Implication for the management:

- Assignment of qualified nurses with appropriate tasks, redistribute tasks on nurses every shift and apply some form of flexibility on overall schedule based on staff nurse's needs.
- Applying of training program for staff nurses continuously on safety issues, how to deal in critical situation, cultural difference and on their area of practice.
- Development of a favorable work environment by providing sufficient nursing staff and resources to enhance nurses' ability to deal with work demands and decrease safety risks on nurses.
- Provide a means of transportation to transport nurses to their residence to reduce the burden of travel on them.
- Provide sufficient number of staff nurses every shift to handle patient care and decrease stress on nurses.
- Specification of certain teams every shift alternately for any emergency condition to decrease the burden of on call on nurses.
- Provide break period during shifts especially night shift to help nurses to deal with their family obligations after work.
- Appreciate nurses effort psychologically and financially and listen carefully to their complain regarding safety issues.
- Concerning with staff nurses safety before anything to ensure continuity of nursing care.
- Solving the problems in hospital in satisfactory and constructive manner.

Implication for nurses:

- Involve themselves in continuous educational programs to increase their knowledge and improve their attitude to safety, achieve quality of work and creativity in problem solving.

- Increasing nurses awareness about organizational policies and job design practices to improve nurses' ability to balance between own life and work.
- Encourage nurses to share responsibility in multidisciplinary team that make it easy to discuss safety attitudes errors and ways of dealing with work demands that can effect on their safety.
- Encourage nurses to concern with their safety at first before anything.
- Encourage a good relationship between diploma and postgraduate nurses through regular meetings, solving conflicts and social events to help them cope with job demands and achieve safety attitudes.

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