Intention to immigration and its relationship with workload and healthy work environment in nurses

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Abstract

Background The immigration of nurses in Iran is increasing day by day, and it seems work-related factors such as workload and healthy work environment are associated with the intention to immigration.

Objectives this study was conducted to determine the intention to immigration in nurses and its relationship with workload and healthy work environment.

Methods This cross-sectional, descriptive-correlational study was conducted in 2020 by simple random sampling method of 360 nurses working in hospitals in Iran. The study instruments were questionnaires of demographics, Intention to immigration (Lee, 2016), Workload (NASA-TLX) and healthy work environment (AACN, 2005). Data were analyzed by SPSS software and descriptive tests. p value < 0.05 was considered statistically significant.

Results The score of intention to immigration was 65.59%, which indicated a high level of intention to immigration in nurses. There was a significant but weak correlation between intention to immigrate, with workload ($r = 0.166$, $p = 0.002$) and healthy work environment ($r = 0.16$, $p = 0.002$).

Conclusion there was a weak but important relationship between the intention to immigration, workload and healthy work environment. More studies on factors related to the intention to immigration are required.

Introduction

Human resources are important for the development of any country, and the issue of human resource retention is an issue that organizations are always faced with. This is especially important in the health system as it deals with human life and health. Meanwhile, nurses are one of the main healthcare professional's workforce, and about 62% (Fuqua et al., 2018) of the nurses in Iran have problems, such as high workload, large number of patients, low salaries and benefits, neglected dignity and the real status of nursing, inter-disciplines conflict and lack of manpower (Gorgich et al., 2017). According to the latest announcement of the Iranian Nursing Organization, there is a shortage of about 100,000 nurses in the country (Dalvandi, 2018). One of the factors that has caused the shortage of nursing staff is immigration (Valizadeh et al., 2016). The immigration of nurses from developing countries to developed countries has become a global concern (Zolot, 2019). Because each organization prepares its employees to the stage of productivity, which costs a lot of money, so 60% of hospital budgets are spent on hiring and training staff. On the other hand, by losing valuable and experienced personnel, they are forced to hire new and unskilled nurses. The lack of skills of new employees leads to a decrease in the quality of services provided to patients (Roche et al., 2015). One study found that, 54.77% of health professionals in Iran have intention to immigrate (Asadi et al., 2017), and statistics from the Iranian Nursing Organization in 2018 show that about 1,000 nurses immigrate annually from Iran (Sharifimoghaddam, 2018). Perhaps the most important reasons for nursing immigration are dissatisfaction with working conditions, comparison of living standards with destination countries (Valizadeh et al., 2016), economic factors

(Zolot, 2019) and the unavailability of support networks (Li, 2014). High workload is an effective factor in changing jobs, and standard workload can be one of the reasons for the intention to stay among nurses (Ross, 2017). A study in Philippines also showed that one of the main reasons for nurses' intention to leave the job is high workload (Labrague et al., 2018). Nurses are among those who face high workloads in performing their duties, which are influenced by factors such as nurse/patient ratio and hours of care per patient (Li et al., 2014). Numerous studies indicate a high workload of nurses in Iran (Bakhshi et al., 2017; Ghasemi et al., 2019). Research shows that high workload increase patient mortality and medical errors (Fagerstrom et al., 2018), reduce patient care quality and job satisfaction, increase burnout (Asgari et al., 2016) and costs, and ultimately reduce effectiveness (Tubbs-Cooley et al., 2019). Given that leaving the service is one of the factors causing the shortage of nursing staff and the lack of nursing staff is one of the factors affecting the increase of nurses' workload (Mudihanselage and Chamaru, 2015), it can be said that high workload is associated with unwillingness to stay and intention to immigration. On the other hand, high workload reduces health standards in the work environment, because having power to make decision leads to effective communication and collaboration (Kelly and Todd, 2017). the work environment and its health is one of the important factors in maintaining the qualified and competent nursing staff (Scruth et al., 2018) Appropriate work environment improves the relationship and cooperation between nurses and physicians, increases job satisfaction and attractiveness, reduces burnout (Kelly and Todd, 2017), increases patient satisfaction, improves treatment outcomes (Bai, 2016) and leads to nurses' retention (Hall et al., 2019). In this regard, studies show that, the health of Iranian nurses' work environment is poor (Hoseini Esfidarjani et al., 2018; Salehi et al., 2020). Given that improving workload (Ross, 2017) and providing a healthy work environment (Freeman, 2012) can keep nurses in the treatment system and improve health care and ultimately, promote patient satisfaction, and also taking into account the financial and human costs of nursing immigration, paying attention to this issue seems to be very important (Lee, 2016). Numerous factors are associated with the phenomenon of nurses' immigration and according to studies it seems that work-related factors such as workload and health work environment are two important factors in this regard. On the other hand, the working conditions of nurses in Iran are significantly different from developed countries, including high workload, lack of manpower, low salaries and benefits, and poor health of the work environment. Therefore, it was necessary to conduct a study to show the relationship between nurses' intention to immigration, workload and healthy work environment to provide evidence for nursing policymakers and managers to be aware of the relationship between these variables and their adjustment in order to reduce nurses' immigration.

Methods

This is a cross-sectional and descriptive-correlational study that was carried out in 2020 by appropriate allocation and simple random sampling methods with the participation of 360 nurses working in teaching hospitals of Iran University of Medical Sciences. In order to determine the minimum sample size required to estimate the intention to immigration at the 95% confidence level, an accuracy estimate of $d=3$ and standard deviation of 29, a total of 360 nurses were estimated. Criteria for entering the study included; having at least a bachelor's degree in nursing, not having a managerial position, and having at

least one year of full-time clinical work experience in the selected hospitals. The exclusion criterion was partial completion of the questionnaires. Data collection tools consisted of following four:

1. A researcher-made demographic information form, which included personal information such as: age, gender, marital status, education, employment status, work experience, type of ward, nurse/patient ratio and shift work.
2. Intention to immigration scale designed by Lee (2016), which has been graded from zero to 100 and is divided into four levels of less than 25, 26-50, 51-75, and above 76. Lower scores indicate lower intention and higher scores indicate higher intention to immigration. The reliability of this scale in the present study was confirmed by calculating the correlation coefficient (0.986).
3. NASA-TLX workload tool: This tool was first designed in 1988 by Sandra Hart at NASA. This tool gives an overall score of mental load, physical load, time load, performance, effort and frustration. It consists of three parts: 1.Determining the degree of loading (Rating) that the samples mark each of the axes (dimensions) with a scale of 0 to 100 on a 10 cm line. 2.Determining the weighting, in which the dimensions are compared in pairs (in 15 cards) and research samples identify the axes that have the most impact on them. 3.The resulting number from weighting X rating÷15, which is a number between 0 and 100. Average scores below 50 are considered acceptable workload and scores above 50 are considered high workload. The reliability of this scale was also confirmed in this study with a correlation coefficient (0.91).
4. Healthy work environment questionnaire: This standard questionnaire was designed by the American Association of Critical Care Nursing (AACN, 2005). This tool includes 18 questions and six dimensions, including communication skills, proper collaboration, effective decision-making, human resource and appropriate recruitment, meaningful acceptance and recognition, and reliable leadership. Each dimension has three questions, and participants are asked to answer each question by choosing 5 options of "I complete disagree (1) to I completely agree (5)". The sum of scores is a number between 18 and 90, which is then divided by 18 and the final score would be between 1 and 5. A score of 1-2.99 is indicative of an inappropriate healthy work environment status, 3-3.99 indicates a good healthy work environment status, and 4-5 indicates a Highly appropriate healthy work environment status. The reliability of this questionnaire with Cronbach's alpha was 0.846 (r=0.961).

Data collection and analysis

After receiving the code of ethics from the University's Ethics Committee (IR.IUMS.REC.1398.374), based on the share of each hospital, qualified nurses who were selected by simple random method were given explanation about the objectives of study and how to complete the tools. They were asked to answer the questionnaires in their own time. It should be noted that completing the questionnaire meant that the samples were interested to participate in the study. They were also informed that the participation in the study is completely optional. The participants were given one week to complete the questionnaire. Data

were analyzed by SPSS-16 software using independent tests, ANOVA test and Pearson correlation coefficient at a significance level of $P < 0.05$.

Results

The average age of the participants was 32.04 ± 5.9 years and their average work experience was 7.79 ± 5.57 years. The demographic and occupational characteristics of the participants are shown in table1. The mean score of nurses' intention to immigration was 65.59% (33.51), while half of the nurses (50%) had intention to immigration higher than 76%. The mean score of workload was at the top level 82.79 (10.99) and the vast majority of nurses (99.2%) had a high workload. The mean score of healthy work environment was inappropriate 2.40 (0.54) and the majority of nurses (88.9%) reported the health of their work environment was inappropriate (Table2).

The results of present study showed that, the nurses' intention to immigration had a significant, positive and weak relationship with their workload ($p = 0.002$, $r = 0.166$), meaning that with increasing workload, the nurses' intention to immigration increases. The nurses' intention to immigration also had a significant, negative and weak relationship with their healthy work environment ($p = 0.002$, $r = 0.16$), indicating that with increasing healthy work environment, the intention to immigration decreases (Table3).

The results of ANOVA test showed a significant relationship between intention to immigration and work experience ($p = 0.048$). The Tuki's pairs comparison indicated that, the intention to immigration in nurses with a work experience of 10-14 years was significantly higher than nurses with a work experience of less than 5 years ($p = 0.033$), and 5-9 years ($p = 0.011$). The independent t-test showed a significant relationship between intention to immigration and employment status, so that intention to immigration in nurses with permanent employment was significantly lower than in nurses with non-permanent employment ($p = 0.001$), (Table 4). The results of ANOVA test showed that workload was significantly correlated to the nurse/patient ratio ($p = 0.001$). The Tuki's pairs comparison showed that the mean score of workload in nurses who had 1-2 patients was significantly lower than nurses who had 2-5 patients ($p = 0.015$) and 12-17 patients ($p = 0.001$). Also, the mean workload score in nurses who had 7-12 patients was significantly lower than nurses who had 12-17 patients ($p = 0.004$). The results of ANOVA test showed that healthy work environment had a significant relationship with the type of ward and work shift ($p < 0.05$). The Tuki's pairs comparison showed that, the mean score of healthy work environment in the surgical ward was significantly higher than the score of healthy work environment in the pediatric ward ($p = 0.002$). The mean score of healthy work environment in nurses with morning and evening shift was significantly higher than in nurses with rotational shift ($p = 0.003$), (Table4).

Discussion

This study examined the Iranian nurses' intention to immigration, and its relationship with their workload and healthy work environment. The results of present study showed that, the mean score of intention to immigration in nurses was 65.59%. Results reported by numerous studies in other countries indicate that,

the nurses' intention to immigration is high, and a large percentage of nurses in developing countries wish to immigrate to developed countries (Santric-Milicevic et al., 2015; Gea - Caballero et al., 2019). The study of intention to immigration in nursing students in South Korea showed similar results (Lee and Moon, 2013; Lee, 2016). Asadi et al found similar results in determining the intention to immigration and its reasons among Iranian healthcare professionals (Asadi et al., 2017). While the Freeman's study (2012) showed that 85% of nursing graduates in a city in Canada preferred to work in Canada, and only 15% of them intended to immigrate to other countries (Freeman et al., 2012). This difference can be due to the type of management, working conditions, salaries and benefits, the independence and different work responsibilities of nurses in developed and developing countries. In most cases, immigration is a personal decision that a person makes because of a problem at work or in the society. Since one of the most important factors associated with the immigration of nurses is dissatisfaction with the work condition and environment as well as comparing their lives with the lives of nurses in destination countries (Valizadeh et al., 2016), addressing the problem of nursing shortages, improving the working conditions and promoting the healthy work environment in the health care system seem to be a suitable solution to this problem. Meanwhile, the experiences of researchers show that such conditions do not exist in public and educational hospitals in our country.

The results of this study and numerous studies in Iran show that, the workload of Iranian nurses is high (Bakhshi et al., 2017; Ghasemi et al., 2019). A study by Carlesi et al (2017) in Chile using the TISS-28 tool showed a high workload of nurses (Carlesi et al., 2017), which is similar to the results of present study. This is while a study by Tubbs-Cooly et al (2019) at a medical center in Ohio State reported the workload of NICU nurses as acceptable (Tubbs-Cooly et al., 2019). The reason for the difference in workload in different countries and wards can be related to the nurse/patient ratio, patient profile, rules governing the provision of health care services and the tool used to measure workload. However, according to the results, all studies have expressed the importance of paying attention to the workload of nurses. Therefore, adjusting working hours, abolishing forced overtime and increasing nursing staff are necessary, because insufficient human resource is an effective factors that influence workload (Bakhshi et al., 2017) and a sufficient number of nurses is a necessary factor to prevent adverse effects and reduce patient mortality (Needleman et al., 2011).

Another finding of this study was the Inappropriate of nurses' healthy work environment. Other studies have shown that the healthy work environment of Iranian nurses is Inappropriate (Hoseini Esfidarjani et al., 2018; Salehi et al., 2020). A study by Kim et al (2020) reported a Inappropriate healthy work environment in nurses in Southern California (Kim et al., 2020), while studies in other countries show a appropriate healthy work environment (Huddleston et al., 2017; Kelly and Todd, 2017; Monroe et al., 2020). Studies show that, this difference can be due to the type of management, work culture, authority and different independence of nurses in Iran and abroad. Hospitals that have good working environment have characteristics such as independence of action, permission to comment, good working communication, rewards system, and participation in treatment planning and patient care (Joolaei et al., 2012). To improve health, the components of healthy work environment must coexist. In order to create a healthy work environment, several committees should be established in the hospital, and each committee

should be responsible for one of the components of healthy work environment and monitor the proper implementation of it by educating the staff (AACN, 2005).

The results of present study showed that with increasing workload and reducing healthy work environment, the intention to immigration increases among nurses. Our study is consistent with similar studies in other countries that have identified high workload as one of the factors associated with nurses' intention to immigration (Lee and Moon, 2013; Li, 2014; Kizito et al., 2015; Garner et al., 2015). In addition, an inappropriate healthy work environment is one of the effective factors in maintaining nurses, and an inappropriate healthy work environment is one of the reasons related to the migration of nurses (Freeman et al., 2012; Dywili et al., 2013; Scruth et al., 2018; Hall et al., 2019;). Reducing workload (Ross, 2017) and improving the healthy work environment (Scruth et al., 2018) can help maintain nurses in the treatment system and improve health care and ultimately, promote patient satisfaction. Given the financial and human costs of nurses' migration for health care organizations, it is important to pay attention to this issue before it occurs (Lee, 2016).

Among other results of this study was the link between work experience, employment status and nurses' intention to immigration, so that nurses with low work experience and non-permanent employment status had more intention to immigration. The results of this study are consistent with the study of Asadi et al (2017) that was conducted on healthcare professionals in Iran (Asadi et al., 2017). This result may be related to job security, which is higher in permanently employed nurses. However, similar studies conducted in other countries suggest that one of the reasons for nurses' immigration to other countries is the lack of job security (Gea-Caballero et al., 2019), and achieving better job opportunities in the destination country (Dywili et al., 2013). Therefore, it seems that people with less experience and non-permanent employment are less dependent on their job and organization and are looking for a more stable situation and higher job security. On the other hand, this issue is probably related to the immigration policy in the destination country, because migrant hosting countries have policies that take into account variables such as age and amount of work experience in their laws. Therefore, in order to prevent the immigration of nurses, necessary measures should be taken to ensure job security, increase salaries and benefits, and job independence for graduates.

Limitations

Feeling tired, not having enough time to complete the questionnaires and the emotional state of samples could affect their responses and ultimately, the results of study. To reduce this problem, the samples were given a week time to complete the questionnaires, so that they could answer questions in a more appropriate situation. The potential conflict of samples with specific individuals in their workplace could also affect their response, which could not be controlled by the researcher. This research is limited to nurses working in teaching hospitals affiliated to Iran University of Medical Sciences and Iranian nurses, so caution should be taken in generalizing its results to other contexts.

Conclusions and suggestions

Results of this study showed that, the intention to immigration and workload was high in nurses and the health status of their work environment was inappropriate. However, the intention to immigration was weak significantly associated with workload and healthy work environment. However, improving the working and professional conditions of nurses and adjusting and reducing their workload seem necessary and require special attention from officials and managers. Given the importance of maintaining nursing workforce, further studies on this subject and other factors related to intention to immigration may be necessary.

Declarations

Conflict of interest:

No conflict of interest has been expressed by the authors.

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Conflict of Interest

All authors declared no conflict of interest concerning this manuscript

Ethical Approval

This study received ethics approval from Iran University of Medical Sciences (I.U.M.S) (IR.IUMS.REC.1398.374).

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Tables

Table 1: Demographic/occupational characteristics of participating nurses (n=360)

Demographic/ occupational characteristics	Classes	Frequency (percentage)
Gender	Male	88 (24.4)
	Female	272 (75.6)
Marital status	Single	171 (47.5)
	Married	186 (52.7)
	Divorced	3 (0.8)
Education	Bachelor's degree	312 (86.7)
	Master's degree	48 (13.3)
Type of ward	Emergency/Intensive care	122 (33.9)
	Surgical	105 (29.2)
	Medical	83 (23.1)
	Pediatric	50 (13.9)
Nurse/patient ration	1-2	12 (3.3)
	2-5	31 (8.6)
	5-7	84 (23.3)
	7-12	174 (48.3)
	12-17	59 (16.8)
Employment type	Permanent	114 (31.7)
	Non-permanent	246 (78.3)
Work shift	Morning	24 (6.7)
	Night	34 (9.4)
	Morning and evening	55 (15.3)
	Evening and night	10 (2.8)
	Rotational	237 (65.8)

Table 2: frequency distribution of intention to immigration, workload and healthy work environment from the perspective of participating nurses (n=360)

Variables	Classes	Frequency (percentage)
Intention to immigration	Less than 25%	63 (17.5)
	26-50%	48 (13.1)
	51-75%	70 (17.4)
	Mean (SD)	65.59 (33.51)
Workload	Acceptable	3 (0.8)
	High	357 (99.2)
	Mean (SD)	82.79 (10.99)
Healthy work environment	Inappropriate	320 (88.9)
	Appropriate	38 (10.6)
	Highly appropriate	2 (0.6)
	Mean (SD)	2.40 (0.52)

Table 3: The result of Pearson correlation test between intention to immigration, workload and healthy work environment (n=360)

Variable	Intention to immigration				Pearson correlation
	Less than 25%	26-50%	51-75%	Above 76%	
	Mean (SD)	Mean (SD)	Mean (SD)	Mean (SD)	
Workload	81.82(12.15)	77.28(10.68)	80.23(11.07)	85.50(9.8)	r=0.166 p=0.002
Healthy work environment	2.52(0.49)	2.57(0.38)	2.36(0.51)	2.34(0.55)	r=-0.16, p=0.002

Table 4: Relationship between demographic and occupational characteristics, the intention to immigration, workload and healthy work environment

	Intention to immigration	Workload	healthy work environment
Demographic/occupational characteristics	p-value	p-value	p-value
Work experience	0.048	0.051	0.777
Employment status	0.001*	0.317*	0.542*
Nurse/patient ratio	0.250	0.001	0.774
Type of ward	0.562	0.054	0.003
Work shift	0.065	0.210	0.014
*: Reviewed by independent t-test. The relationship of other variables has been calculated by ANOVA test.			