The Relationship between Motivations and Nurses' Intention to Share Knowledge

Abstract

Background: This study intended to examine the association between the intrinsic and extrinsic motivation and knowledge sharing intentions among the nursing staff. **Materials and Methods:** It was a descriptive-correlational study, and the population included 860 nurses, working in Al-Zahra hospital, from whom a sample of 275 subjects were selected through convenience sampling method. The intrinsic motivation was composed of two sub-instruments, namely, the public recognition instrument (covering 3 items) and reciprocity instrument (covering 3 items), while extrinsic motivation included a knowledge self-efficacy instrument and an altruism instrument with 3 and 4 items, respectively. Moreover, knowledge sharing intention itself was evaluated a by 4-item inventory. Once the content validity, face validity, and construct validity (using confirmatory factor analysis), as well as the reliability (Cronbach's alpha) were confirmed, the model was analyzed through the partial least square technique. **Results:** There was a statistically significant association between both the intrinsic motivation and knowledge sharing intention ($t = 14.95$, $p < 0.01$,) and extrinsic motivation and knowledge sharing intention ($t = 3.07$, $p < 0.01$). Moreover, it was found that knowledge sharing intention was positively associated with public recognition ($t = 3.98$, $p < 0.01$), knowledge self-efficacy ($t = 3.17$, $p < 0.01$), and altruism ($t = 11.44$, $p < 0.01$). However, the association between the reciprocal benefits and intention to knowledge sharing was not supported ($t = 1.77$, $p < 0.05$). **Conclusions:** The results indicate that both intrinsic and extrinsic motivations, including public recognition, altruism, and knowledge self-efficacy perceptions can be used to encourage knowledge-sharing practices among the nurses.

Keywords: *Iran, knowledge, motivation, nurses*

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Introduction

The rate of changes and instabilities in the health domain, the complexity of the internal and external processes, rapid progress of technology and the complexity of the regulations, the discovery of modern sciences and techniques, and introduction of new services may increase the rate of changes and necessitate the field practitioners' knowledge to be updated.[1] The occurrence of errors, including adverse events, or mistakes in treating patients in nursing departments is an issue in hospitals' highly variable situations in which quick and critical decisions are to be made. The key factor, which contributes to the prevention of such errors, is nurses' past experiences and knowledge. However, the nurses who leave the profession take their knowledge and experience from the nursing workforce. This calls for knowledge management practices to cope with the negative consequences resulting from losing a part of the knowledge, exclusively possessed by those nurses who leave their jobs.[2] Knowledge management among the nurses has some benefits such as lowering the training costs, medical errors, and promoting the patient care quality.[3] All the foregoing reasons together with the teaching nature of the health centers provide strong evidence on the necessity of focusing on the Knowledge Sharing (KS) and identifying the effective factors for its implementation in the health domain.

According to motivation theory, extrinsic and intrinsic motivations are two main driving forces, identified in the knowledge management literature.[4] The extrinsically based KS mainly stems from the expected payoff of knowledge contribution.[5] The intrinsically based motivational forces stimulate a person to share knowledge out of interest or inherent enjoyment.[6] They

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How to cite this article: Rafieian-Isfahani H, Peikari HR, Rafieian-Isfahani M. The relationship between motivations and nurses' intention to share knowledge. Iranian J Nursing Midwifery Res 2020;25:53-7.

may interactionally be present in the KS as well.[7] Intrinsic motivation includes reciprocal benefits[8] and public recognition[9] factors, while extrinsic motivation includes knowledge self-efficacy[10] and altruism factors.[11,12]

Some previous studies explored the association between the motivation and KS intention in Boushehr Customs Office,[13] determined the costs and benefits of KS intention,[14] explored the effect of knowledge-based leadership on the perceived convenience of the knowledge management in Farrokh Shahr Imam Ali Hospital,[15] identified the factors affecting KS among the physicians in Tehran University of Medical Sciences,[16] explored the effect of motivation on KS in Gilan Real Estate organization,[17] investigated the requirements of KS in Islamic Azad University of Abhar,[18] and explored the effect of organizational incentives, confidence, and enjoyment on the attitudes to KS in Fars Agriculture Organization.[19] Only two similar studies worked on intrinsic and extrinsic motivations' impacts on the KS intention among Tehran Municipality's staff[20] and the employees of Isfahan's physical education offices.[21] Nevertheless, none of these studies were conducted in the nursing context, and hence, no similar studies focusing on the nursing community were found. Moreover, the components of intrinsic and extrinsic motivations, explored in these two studies, are different from those investigated in the present research, which reflect the novelty of this research. Various reasons such as the retirement of the practitioners, the necessity of the documentation of the medical projects, and using them in the future projects have driven Al-Zahra hospital toward the implementation of the knowledge management. Accordingly, one of the preliminary studies to be conducted is to examine the motivational forces influencing the implementation of knowledge management and determine their role in sharing nurses' knowledge in the studied hospital. Hence, this study intended to examine the association between intrinsic and extrinsic motivation and KS intention among the nursing staff.

Materials and Methods

This research was conducted through a descriptive-correlational applied study during July and August 2018. The study population included totally 860 nurses, working in one educational hospital, Isfahan, Iran. From this population, a sample of 290 nurses were selected with 95.00% of significance level and accuracy of 0.05 following Krejcie and Morgan's sample size table, and the data were collected by convenience sampling method. The inclusion criteria were the samples needed to be full-time nurses working in Al-Zahra Hospital Isfahan and have tendency to participate in this research. Exclusion criteria were either the lack of any of the inclusion criteria, mentioned earlier, or delivering incomplete responses. Although according to the Krejcie and Morgan's table, the sample size for this population was 265, with respect to

a probable non-response rate, 10.00% additional samples were added to the outlined initial sample size, and 290 questionnaires were distributed in person among the nurses resulting in 275 completed questionnaires after 2 months. After the approval of ethics committee (delivering the approval letter to Isfahan Al-Zahra hospital), researchers obtained the list of full-time nurses in the hospital and approached them during their rest or lunchtime, explaining the objectives of the research and inquiring if they had willingness to participate in this research. Once their oral consent was obtained, the questionnaire was given to them, and they were left for 15 minutes to fill the questionnaire in a self-administered method.

The first part of the questionnaire contained demographic characteristics including gender, age, education, and work experience. The second part was consisted of 17 items, divided into two main sub-categories, namely, the intrinsic and extrinsic motivation. The former was composed of two sub-instruments, namely, the public recognition instrument (covering 3 items) and reciprocity instrument (covering 3 items), developed by Wesko and Faraj[11] in 2005. While they reported values of 0.91 and 0.90 as the Composite Reliability (CR) values for these variables, respectively, the Average Variance Extracted (AVE) values were reported 0.77 and 0.81, respectively. The extrinsic motivation was consisted of knowledge self-efficacy, adopted from Chen and Hung[22] in 2010 with 3 items (Cronbach's alpha: 0.88, CR: 0.91) and altruism instrument by Chang and Chuang[23] in 2011 with 4 items (Cronbach's alpha: 0.91, CR: 0.91, AVE: 0.71), respectively. Moreover, knowledge sharing intention itself was evaluated by a 4-item inventory, proposed by Huang *et al*.[24] in 2008 (Cronbach's alpha: 0.96, CR: 0.91, AVE: 0.72). The self-report questionnaires were responded based on a 5-point Likert instrument ranging from 5 (strongly agree) to 1 (strongly disagree). The score range for each questionnaire was determined to be 3–15 for the public recognition, reciprocal benefits, and knowledge self-efficacy questionnaires and 4–20 for the altruism and KS intention questionnaires. It is noteworthy that the higher score was interpreted as the better status of the respondents in terms of the variable in question.

The face and content validities of the whole questionnaire were assessed by pooling the ideas of 6 subjects present in the statistical population as well as 3 faculty members in the field of management and 2 faculty members in nursing. The construct validity of the questionnaires was assessed by factor analysis, while the reliability was evaluated by estimating Cronbach's alpha. To evaluate the construct validity, three indexes of CR, AVE, and factor loading were used. The results illustrated that the CR values ranged between 0.70 and 0.94 for all the variables, while the AVE values ranged between 0.58 and 0.80, meeting the cut-off values for these indexes. In addition, the factor loading of all the items was higher than 0.5. Besides,

the square root of AVE for all the variables exceeded the correlation between those variables and other variables, and hence, Fornell and Larcker criterion was met. Hence, it was concluded that construct validity was established and admissible. Moreover, Cronbach's alpha for all the variables ranged between 0.69 and 0.94, reflecting the reliability of the used instrument. Finally, it should be noted that descriptive analyses were executed by SPSS 21 and to test the hypotheses, partial least squares method and SmartPLS2.0.M3 software were used.

Ethical considerations

The study received the approval of ethics committee no. IR.IAU.KHUISF.REC.1397.068. After approval, the permission was issued to the management of an educational hospital. The researcher provided some oral information to the participants including the goals and objectives of the study. The confidentiality and anonymity of the data were maintained, and the respondents were free to withdraw from the study at any stage.

Results

According to Table 1, out of 275 participants, 29.80% were male and 70.20% were female. Furthermore, the majority of the participants (40%) were in the age group of 40–49, while the age group of less than 30 years had the least frequency (13.10%). As for the level of education, the majority of participants (72.70%) had a bachelor's degree, while a Ph.D. degree had the least frequency (3.30%). In general, it can be concluded that 93% of the participants had a bachelor's degree or higher. As for work experience, 25.80% of the participants had a work experience of less

Table 1: Descriptive statistics for the population's demographic characteristics

Variables	Frequency (Percentage)
Gender	
Male	82 (29.80)
Female	193 (70.20)
Age	
<30 years	36 (13.10)
30-39 years	91 (33.10)
40-49 years	110 (40.00)
>50 years	38 (13.80)
Work Experience	
<5 years	25 (9.10)
6-10 years	55 (20.00)
11-15 years	58 (21.10)
16-20 years	71 (25.80)
>21 years	66 (24.00)
Education	
Below B.S.	19 (6.90)
B.S.	200 (72.70)
M.S.	47 (17.10)
Ph.D.	9 (3.30)

than 16 to 20 years, while 9.10% had a work experience of less than 5 years, which is the lowest frequency. In sum, 90% of the participants had a work experience of over 9 years.

As shown in Table 2, the analyses indicated that in the medical center under study, there was a significant association between the intrinsic and extrinsic motivations and KS intention ($t = 3.07$, $p < 0.01$) as well as extrinsic motivation and KS intention ($t = 14.95$, $p < 0.01$). Furthermore, it was found that KS intention was positively associated with the variables of public recognition ($t = 3.98$, $p < 0.01$), knowledge self-efficacy ($t = 3.17$, $p < 0.01$), and altruism ($t = 11.44$, $p < 0.01$). Hence, their respective hypotheses were confirmed. In contrast, the relationship between the reciprocal benefits and KS intention was rejected ($t = 1.77$).

Discussion

While nurses need to have sufficient knowledge and experience to make quick, error-free, and efficient decisions to handle the emergency and critical situations regarding patients' health, different factors lead to the loss of such valuable knowledge among them. One solution to solve this problem is knowledge management, which needs to be encouraged among nurses. This research aimed to address this issue and how to motivate nurses to share their knowledge with their colleagues. The results showed that both intrinsic and extrinsic motivations placed a positive effect on the intention to KS among the nurses. The R square value for the dependent variable (intention to share knowledge) was 0.65, indicating that the dependent variable is mainly predicted by the independent variables, modelled in this research. This implies the internal validity of the scale as a relational study. Moreover, although the samples were selected non-randomly, researchers ran the sampling round with no bias, regardless of the perceptions, attitudes, personality, or behavior of the respondents toward the phenomenon of interest. Hence, no specific group of the nurses, in terms of their psychological status and behavior, was studied, implying that the results are not biased and may be generalized to the whole population.

These results were consistent with those obtained by Hajian and Sardar[20] that reported a positive association between both the extrinsic and intrinsic motivations and attitude toward KS and attitude toward KS and the intention to share explicit and implicit knowledge. In the same vein, Jaberi *et al*.[21] showed that the anticipated organizational rewards, reciprocal benefits, knowledge self-efficacy, and enjoyment in helping others are positively related to the KS attitude and intention. These results were also in line with Seifi,[17] validating the positive and significant impact of the motivation components on employee knowledge sharing. This may be justified by this fact that intrinsic motivation is a natural force driving the behavior in the absence of extrinsic rewards and pressures.[21] Intrinsic motivation

Hypotheses	Path coefficient	*t*	Result
Intrinsic Motivation and Knowledge Sharing	5.17	3	Supported
Extrinsic Motivation and Knowledge Sharing	0.68	14.90	Supported
Public Recognition and Knowledge Sharing	0.17	3.90	Supported
Reciprocal Benefits and Knowledge Sharing	0.07	1.70	Supported
Knowledge Self-efficacy and Knowledge Sharing	0.14	3.10	Supported
Altruism and Knowledge Sharing	0.59	11.40	Supported

directly satisfies nurses' needs. These motivations are intrinsically valuable and can direct nurses' efforts toward achieving a personal goal or responding to a personal or social obligation (resulting from personal identity).[25] On the other hand, the impact of extrinsic motivations varies based on different factors including age, gender, level of education, occupation, etc. Extrinsic motivation is the product of the extrinsic incentives and consequences and is regarded as an extrinsic reason to start or continue an activity.[25] Consequently, if intrinsic and extrinsic motivators both exist among the nurses, there will be an increased KS intention whether due to organizational or personal reasons or not.

In addition, the study findings revealed that public recognition was positively related to KS intention. This result was consistent with Moeini[14] confirming the significant effect of the public recognition on KS intention. To justify these findings, it can be inferred that public recognition is of such a high significance that stimulates the nurses to gain reputation through knowledge sharing. This reputation has been proved to act as a mechanism, which is effective in attaining and preserving a superior position. Accordingly, the promotion of public recognition motivation drives a person toward making more effort so as to attain superior positions.

According to the results of the study, the relationship between the reciprocal benefits and KS intention was rejected. This result did not comply with those, obtained by Dery *et al*.,[26] that provided strong evidence on the statistically significant effect of extrinsic rewards, reciprocal benefits, self-respect, and organizational climate on the KS intention. This result can be explained by this fact that the reciprocal benefits are a kind of contingent interest, expected to be obtained in exchange for KS practice. Accordingly, it is possible to organize the nurses' KS behaviors by imposing financial incentives and clear communication with the nurses. The higher the effect of such incentives, the more the KS behaviors will be observed.

As for knowledge self-efficacy, the results of the study confirmed the positive effect of knowledge self-efficacy on the KS intention among nurses. These results were consistent with Moeini[14] that showed self-respect has a positive and significant effect on the intention to share knowledge in Ayatollah Kashani Hospital in Isfahan.

The result can be justified considering this fact that knowledge self-efficacy is perceived when the nurses are completely sure of the authenticity of their knowledge. Under such circumstances, the nurses are ready to transfer their useful information to other nurses with full inner consent–promoting their self-efficacy and self-confidence by means of knowledge sharing.

Finally, a significant relationship was observed between the altruism and the KS intention among the nurses in the questionnaire. This implies that the more the altruism, the more the nurses' intention would be to share their knowledge with their colleagues. This result was consistent with Jaberi *et al*.[21] who reported that enjoyment in helping others (altruism) positively influences KS attitude and intention. To explain this result, it can be argued that altruism is an unconditional friendly behavior without expecting any return. In general, altruism leads to the sharing of personal interests with others; hence, it can play a critical role in driving the nurses toward KS behaviors.

No research is free of its limitations; this research is also not an exception. The most significant limitation of this research would be the impossibility of the generalization of the results to other similar populations. Besides, this study is geographically limited to a certain part of Iran, and the studied population cannot completely represent the whole Iranian nurses and their perceptions. Furthermore, the nuisance variables resulting from specific plans and methods, used in research, often endanger the internal and external validity of the research in different ways. As it has been argued, it is impossible to control or eliminate these types of variables in behavioral sciences research. Notwithstanding, we tried our best to predict and identify these factors as far as possible, taking all the necessary precautionary measures to reduce them. In the end, conducting the convenience sampling method was another limitation of this research.

Conclusion

To facilitate knowledge sharing, it is possible to motivate the nurses to share their knowledge by involving them in in-service training. The enhancement of nurses' self-confidence, through verbal or financial praises, can play a major role in promoting confidence and their contribution in sharing knowledge. Furthermore, to promote the desire for KS among the nursing staff, the

sense of empathy and altruism, as two integral components of Iranian culture, should be enhanced.

Conflicts of interest

Nothing to declare.

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