Assessment of Nurses' Readiness to Applying Nursing Process Kardex based on ADKAR Model

Alice Khachian[1], Sona Elyasi[2]*, Hamid Hghani[3] and Saeideh Shakeri[4]

[1]*Associate Professor, Medical Surgical Nursing, Faculty of Nursing and Midwifery, Iran University of Medical Sciences, Tehran, Iran*

[2]*Instructor, Medical Surgical Nursing, Faculty of Nursing and Midwifery, Iran University of Medical Sciences, Tehran, Iran*

[3]*Instructor, Department of Statistics, Faculty of Public Health, Iran University of Medical Sciences, Tehran, Iran*

[4]*Instructor, Medical Surgical Nursing, Faculty of Paramedical Sciences, Arak University of Medical Sciences, Arak, Iran*

*Corresponding Author: Sona Elyasi, Instructor, Medical Surgical Nursing, Faculty of Nursing and Midwifery, Iran University of Medical Sciences, Tehran, Iran.

Abstract

Introduction: The purpose of this study was to assess nurses' readiness for applying nursing process kardex using ADKAR model.

Methods: This descriptive-analytic cross-sectional study was performed among 320 nurses employing in educational centers of Iran University of Medical Sciences. Sampling was carried out as classification, with appropriate allocation in an accessible method. Nurses' demographic information questionnaire and ADKAR model questionnaire were used to collect data also validity and reliability were measured. The data were analyzed using SPSS software version 16.

Results: Based on obtained results, 95% of the participants were women. Their average age was 31.86 and their work experience was 8.21 years. Mostly had the bachelor's degree and they employed as formal sector. The results show that according to earning score needed for the majority of samples in all components of ADKAR model including knowledge, desire, knowledge, ability and Reinforcement, nurses were ready to apply nursing process kardex as a change.

Discussion: The results also indicated that desire was the only component that has not meaningful relation with any of the demographic variables. The results show that training courses and supporting people during the course of changes can contribute and implement this change.

Keywords: Change Management; Readiness for Change; ADKAR Model; Nursing Process

Introduction

Change is one of the significant features of the present era. All individuals and organizations meet different changes over their life. How individuals and organizations respond to changes depends on the various factors, including the abilities of organization and individual, their current position, the time of change, the outcome and influence of change on individual and organization and degree of their readiness [1]. About 70% of change management plans is failed. The changes in the healthcare industry, particularly in hospitals, has often been unsuccessful due to lack of staff readiness and lack of conditions required to change. Individuals are the focus of all organizational changes. Therefore, their readiness for change is one of the most important factors in current organizations [2,3]. Armenakis., *et al.* (2016) consider readiness as a progressive knowledge of support or resistance behavior for the transformation process, and suggest that

decision-making on the implementation of change is guided by the urgency of the change and extension of readiness of employees [4]. Assessment of the readiness for an innovation in healthcare can reduce the risk of its failure after the introduction [5].

The nursing process is a systematic and organized method for providing nursing care that focuses on identifying and treating the reactions of individuals or groups toward their health status changes. The nursing process is used as a useful tool for nursing career support, which has been recognized among different countries and models of providing health care as a global approach for organizing and providing nursing care. The nursing process is a structural process in which nurses can organize information about patient problems and design interventions to meet their needs [6]. The quality of nursing care is a key factor in the health system of each country and the implementation of the nursing process plays an important role in creating proper quality. The nursing process is a suitable method for explaining the nursing nature, based on the science, technologies and human concepts that encourages critical thinking and creativity, describes problem solving process in professional practice [7]. Implementation of nursing process improves the quality of nursing care. In other words, the nursing process helps to develop the participation of nurses in improving the quality of providing patient care [8].

According to the nursing process step which includes examination, nursing diagnosis, planning, implementation and evaluation, it is necessary to record these steps to continue providing care according to accreditation standards. So, in addition to medical diagnosis in patients, they have other needs that are presented in the form of nursing diagnosis and improving them (other needs) will help a lot to improve patients. The nursing process enables nurses to provide unified care and allows them to evaluate their interventions in addition to applying their knowledge [9].

Hospital nursing managers reported that their main problem is to deal with changes, staffing resistance, and their opposition to with new changes that has slowed down the process of change in various areas. Nurses are the largest professional group in healthcare system which are considered as changes major factor in the studies [10]. They can have a significant impact on their changes process and proper management. The lack of readiness of nurses to change and their dissatisfaction from this process can affect their mental status and even their job performance and also affect the quality of cares provided by them. Therefore, measurement of their readiness level and planning to its increase can be an important step in coordinating them with change process and it's accelerating, as well as reducing the budget and a long time of the change process.

One of the ways to effectively deal with changes is applying the science of change management and its various models that have attracted the attention of managers of organizations around the world during the last decade. Understanding the complications and the consequences of change, based on change models, is vital for organizations such as healthcare organizations. This issue will help leaders and managers in choosing a training method and means of readiness of forces to achieve change [4,11].

The ADKAR model was presented by Prosci in 2003 and the model includes five components of awareness, desire, knowledge, ability, and reinforcement. Based on this model, readiness consists of mentioned five components that by considering them and regard to the factors affecting them, one can identify the weaknesses and strengths points of individuals in participation and implementation of changes. In introducing the ADKAR model, the Change Management Learning Center considers awareness as the concept of the need for change, the desire as the concept of interest in the participation and support for change, knowledge as the concept of familiarity with how to make change, ability as the concept of making daily changes and reinforcement as maintain sustainability of changes in place [12].

ADKAR model is a model of personal change management and it designed to focus the group on specific activities that affect the results. The individuality of the ADKAR model allows managers to focus on organizing change management activities, as well as giving the managers a realistic means to direct their employees, assess their resistance and how to help them in change process [13]. ADKAR is a conclusive and easy model to learn by managers. ADKAR model investigates the role of the attitude of individuals in change management and, given the importance of the role of attitude in decision making and the behavior of individuals, it can be used in change process [1]. Truong., *et*

al. 2009 also introduced ADKAR as an individual model to reinforce the human factor in the process of effective change, and they suggest that change projects would facilitated and accelerated by increasing knowledge and ability of individuals, increasing human resources, and making motivation for change [14]. ADKAR Model creates a tool for enhancing the relationship between individual performance, organizational change management and work results [15].

Based on the results of the studies and the importance of being prepared for the participation of individuals in changes and their effectiveness, assessing the readiness of the organization before implementing the changes can reduce their resistance, improve the process of implementing changes and ultimately reduce the material and spiritual costs. Considering ADKAR's performance in assessing the readiness of individuals, this study aimed to assess the readiness of nurses in using nursing process kardex using this model.

Methodology

This study is a descriptive-analytical cross-sectional study in which the researcher had used the ADKAR model to measure the nurses' readiness for applying nursing process kardex. The sampling was performed in a classified method with appropriate allocation to the accessible method at each class among nurses working in all hospitals of Iran University of Medical Sciences. To determine the sample size required to estimate and mean of each factors as well as the mean of total score of kardex at significant level of 95%, after numbering

in formula $N = \dfrac{(Z1-\alpha/2)^2 \times \sigma^2}{d^2}$, is estimated with an accuracy of d = 1, the sample size of N = 320. In this study two tools were used.

Nurses' demographic information questionnaire includes gender, age, working experience, type of employment, type of hospital and type of department. The other tool includes ADKAR model questionnaire which was carried out its translation, validity and reliability process. Content - formality validity and Cronbach's alpha test were applied for reliability of the tool. The result of Cronbach's alpha was obtained in each component as awareness = 0/86, desire = 0/82, knowledge = 0/80, ability =0/86, reinforcement = 0/86 and tools total score = 0/93. During the correspondence with the change management center, the use of ADKAR's tool was allowed and interpreting and reinterpreting process of tool was conducted. This tool has four questions in each component of ADKAR's model (awareness, desire, knowledge, ability, and reinforcement), totally consists 20 questions. At the end, to each of the components was gave scores of 1 to 5 and totally 20 scores, and a score of less than 3 in each component showed that individuals in that component didn't have sufficient readiness and they need managers' planning and action to improve the conditions [16]. At the end, data were analyzed by SPSS software version 16 for statistical tests.

Findings

According to obtained results, most of the participants in the study (95%) were women. The average age of research community was 31.86 and the average of their work experience was 8.21 years. The work experience of 5 to 9 years and less than 5 years had the most frequency, respectively, which showed the young population of nurses working in the research centers. In terms of education, 90% of nurses were at undergraduate level and majority of people were officially employed. 67/2% of nurses served in training hospitals and 32/8% in health care hospitals.

In order to investigate the aims of study based on determining the overall score of each components affecting readiness in terms of ADKAR model in nurses, the obtained results were analyzed, which are presented following separately.

Variables		Frequency	Percentage	Deviation ± mean Maximum - min
Awareness	No (1 - 2/9)	105	32/8	3/22 ± 1/01
	Yes (3 - 5)	215	67/2	1 - 5
Desire	No (1 - 2/9)	118	36/9	3/12 ± 0/88
	Yes (3 - 5)	202	63/1	1 - 5
Knowledge	No (1 - 2/9)	82	25/6	3/36 ± 0/89
	Yes (3 - 5)	238	74/4	1 - 5
Ability	No (1 - 2/9)	72	22/5	3/38 ± 0/88
	Yes (3 - 5)	248	77/5	1 - 5
Reinforce-ment	No (1 - 2/9)	101	31/6	3/21 ± 0/91
	Yes (3 - 5)	219	68/4	1 - 5

Table 1: *Frequency distribution and numerical index of each of the components in nurses applying nursing process kardex.*

Individual factors		Number (%) Mean	Awareness			Desire		
			Standard deviation	Test results	Mean	Standard deviation	Test results	
Sex	Female	304 (95)	3/23	1/02	p = 0/474	3/12	0/89	p = 0/951
	Male	16 (5)	3/04	0/82	df = 318 *t = 0/718	3/14	0/66	df = 318 *t = 0/061
Age	20-29	134 (41.9)	3/21	0/98	p = 0/985 * f = 0/015	3/17	0/79	p = 0/695 * f = 0/364
	30-39	147 (45.9)	3/23	1/01		3/09	0/94	
	40 years and older	39 (12.2)	3/23	1/14		3/1	0/97	
Work experience (years)	Under 5 years old	98 (30.6)	3/12	0/98	p = 0/711 * f = 0/459	3/15	0/79	p = 0/597 * f = 0/628
	5-9	107 (33.4)	3/25	0/99		3/17	0/9	
	10-14	73 (22.8)	3/28	1/01		3	0/91	
	15 years and more	42 (13.1)	3/26	1/13		3/14	1/01	
Education	BS	288 (90)	3/21	1/01	p = 0/ 632 df = 317 *t = 0/479	3/11	0/9	p = 0/365 df = 317 * t = 0/908
	MS	31 (9.7)	3/31	1				
	P.H.D	1 (0.3)				3/26	0/76	
Employ-ment status	Permanent	137 (42.8)	3/29	1/08	* f = 0/608 p = 0/611	3/06	0/97	* f = 0/543 p = 0/653
	Temporary	42 (13.1)	3/21	0/81		3/22	0/76	
	Contractual	82 (25.6)	3/11	0/91		3/11	0/83	
	Conscripts	59 (18.4)	3/22	1/09		3/21	0/84	
Type of hospital	Educational	215 (67.2)	3/39	0/95	*t = 4/448 df = 318 p < 0/001	3/17	0/88	p = 0/154 df = 318 * t = 1/428
	Medical	105 (32.8)	2/87	1/04		3/02	0/88	

Individual factors		Knowledge			Ability			
Mean		Standard deviation	Test Results	Mean	Standard Deviation	Test Results		
Sex	Female	3/37	0/89	*t = 0/941 df = 318 p = 0/348	3/04	0/9	*t = 1/355 df = 318 p = 0/176
	Male	3/15	0/74		3/09	0/54	

Citation: Sona Elyasi., *et al.* "Assessment of Nurses' Readiness to Applying Nursing Process Kardex based on ADKAR Model". *EC Nursing and Healthcare* 2.12 (2020): 184-194.

Factor	Subcategory	Mean	SD	Test results	Mean	SD	Test results
Age	20-29	3/34	0/84	p = 0/55	3/39	0/82	p = 0/504
	30-39	3/33	0/9		3/34	0/91	
	40 years and older	3/51	1/01	* f = 0/599	3/52	0/98	* f = 0/687
Work experience (years)	Under 5 years old	3/32	0/84	p = 0/154	3/42	0/81	p = 0/188
	5 - 9	3/31	0/88	* f = 1/766	3/26	0/92	* f = 1/604
	10 - 14	3/32	0/87		3/38	0/84	
	15 years and more	3/65	1/02		3/61	0/99	
Education	BS	3/37	0/89	* t = 0/291 df = 317 p = 0/771	3/38	0/87	* t = 0/016 df = 317 p = 0/987
	MS	3/32	0/83		3/39	0/98	
Employment status	Permanent	3/44	0/99	p = 0/061	3/51	0/94	p = 0/01
	Temporary	3/25	0/77		3/16	0/75	
	Contractual	3/16	0/8	* f = 2/481	3/18	0/83	* f = 3/881
	Conscripts	3/51	0/81		3/54	0/85	
Type of hospital	Educational	3/47	0/84	* t = 3/378 df = 318 p = 0/001	3/48	0/86	* t = 2/895 df = 318 p = 0/004
	Medical	3/12	0/95		3/18	0/9	

Individual factors		Reinforcement		
Mean		Standard deviation	Test results	
Sex	Female	3/22	0/91	* t = 1/498
	Male	2/87	0/87	df = 318 p = 0/135
Age	20-29	3/17	0/92	p = 0/538
	30-39	3/19	0/86	* f = 0/62
	40 years and older	3/35	1/06	

Work experience (years)	Under 5 years old	3/17	0/93	p = 0/274
	5 - 9	3/11	0/91	* f = 1/302
	10 - 14	3/28	0/81	
	15 years and more	3/41	1/04	
Education	BS	3/22	0/93	* t = 0/436
	MS	3/14	0/64	df = 317
				p = 0/663
Employment status	Permanent	3/33	0/91	p = 0/001
	Temporary	2/94	0/86	* f = 5/451
	Contrac-tual	2/96	0/84	
	Conscripts	3/43	0/95	
Type of hospital	Educa-tional	3/31	0/89	* t = 3/048
	Medical	2/98	0/92	df = 318
				p = 0/002

Table 2: *Demographic characteristics and numerical indices of each of the components in applying nursing process kardex in terms of individual factors.*

Discussion

Based on the results of the study, more than half of the nurses were aware of applying nursing process kardex and they have understood the necessity of implementing this change. Based on the results, the highest level of awareness is in field of the "effects of change in nursing kardex" and the least awareness is in field of "kardex change problems". Most nurses were aware of the benefits of applying the nursing process and stated that the existing kardex does not have the capability to record all parts. Hiatt (2006) considers awareness and essential need for the implementation of change as an essential part of the readiness for change, and a lack of awareness of the causes of change as a cause of resistance [16]. The Change Management Center (2016) states that resistance is reduced if individuals are aware of the reasons for change and its necessity [17]. The result of Brand's study (2013), showed more than 85% of the participants in the study were informed by nursing managers about the necessity of applying the electronic record system, which it illustrates the important role of nursing managers in increasing the employees' awareness of the reasons and need for change [18]. According to a the study by Maleki., *et al*. (2012), showed that among the four access systems including access to opportunity, access to information, access to support and access to resources, according to the mean scores given by nurses to each of the structural empowerment scales, the highest scores gave to access to information [2]. Contrary to the results of present study, the results of Dehghan., *et al*. (2014) showed that although most nurses have a positive attitude toward evidence-based nursing, most of them have moderate and poor knowledge [19]. Also, in the results of the another study, showed that despite the readiness and positive attitude towards e-learning, there is no readiness for this course in the learners of continuing medical education [20]. In the study of Jasemi., *et al*. 2014, nurses had a moderate awareness of nursing documentation, including nursing process reporting [21].

The desire is the second component of ADKAR model that stimulates individuals to desire in changes. The results show that 63/1% of nurses desired to participate in the change of the nursing process kardex. Based on the results, most individuals desire to support change,

---

the lowest score has been dedicated to desire as second item, and " this change will give me (or other individuals) a lot of opportunities", which can be due to the inability to take advantage of opportunities created for nurses in previous experiences. According to the researcher's observations, the worries about increased workload, lack of time in work shifts and lack of knowledge in the use of nursing diagnosis are the most common reasons for the lack of interest of nurses in implementing this change. In the study by Hashemi (2016), in most cases, lack of completion of the questionnaires was caused by a lack of time and a lot of doing work. A number of participants also did not desire to complete the questionnaire. In addition, the statistics of the study show that matrons have had the greatest impact on reinforcement of attitudes of staff towards the colonization of physiological childbirth in private, non-training and training hospitals, and reward has been a major factor in increasing employees' desire to contribute in creating change [22]. Another study also suggests a high workload and a lack of holding periodic in-service training as reasons of non-registration of nursing diagnosis [23]. In organizations where managers engage their employees in job-decision-making, there is more commitment and job satisfaction and employees have more motivation to work optimally because their participation in decision-making [24]. Brand (2013) suggests that individuals will support the changes, if the attitude creates changes will be centralized and flexible. She also suggests that awareness and understanding the causes of change will create a desire and motivation in individuals. The results of her study were similar to the present study, so that, the majority of individuals desire to participate in the study, but reasons such as increased workload, lack of awareness about informatics have mentioned as the reasons for creating negative attitude toward the desired change [18]. Sanjaghi., *et al.* (2016), consider the readiness of employees to change as their best attitude toward change [24]. The study that carried out by Barber, showed that there is a significant relationship between nursing home change readiness and organizational commitment, and also there is a significant relationship between nurses and supervisors [25]. Other study results show that there is a relationship between desire willingness and job satisfaction in employees [26].

Knowledge includes the training and learning of skills and how to apply a new process, understanding the roles and new responsibilities of change [16]. The results show that nearly three quarters of nurses (74/4%) have knowledge of applying the nursing process kardex and they can apply nursing diagnosis in care of patients as part of a nursing kardex. "Having the skill of adapting to this change" and "transparency of change" have had the highest and lowest scores, respectively. The lack of training in nursing diagnosis during the courses of study (mentioned by individuals who have a high work experience) and also the inability to attend training courses are some of the reasons mentioned by the participants regarding the lack of knowledge in applying Nursing Process kardex. The study by Akhtar., *et al.* (2018) shows that most nurses had sufficient knowledge of the nursing process and were willing to use the nursing process in caring for patients, but were unable to use it because of the barriers [27]. Hashemi (2016) also suggests the most barriers to the acquisition of skills for midwifes in the physiological childbirth department without having basic skills and lack of appropriate training. It seems that holding training course and diagnosis training workshops and the nursing process can be effective in increasing the knowledge of nurses [22]. Training plans that include manual activities are the first ways to increase knowledge [18]. Lowery (2010) believes that lack of knowledge limits the effective development of change and responsibility for change management [28]. Employees who seek knowledge and consider learning and progress, they are more likely to accept changes [29]. In a study on the impact of applying of nursing process and its effective factors in Ethiopia country carried out by Hughes., *et al.* (2014), which in knowledge introduces as a determining factor in the applying the nursing process and the lack of knowledge in nurses mention as one of the reasons for the inability to apply the nursing process [7]. The results of Jasemi., *et al.* study show that most of the units studied had a modest knowledge of nursing documentation based on standards [21].

The ability is possibility of implementation of change and achieve the desired performance level [16]. The results show that the majority of nurses who participate in the study have the ability to apply the nursing process kardex and they are able to cope with created change. According to the researcher's observations and nurses' statements, forgetting the nursing diagnosis due to the long time past of education periods and the inability to attend training courses due to lack of time, as well as the lack of a specific place for writing diagnosis in the nursing kardex, are the reasons mentioned by nurses in inability of applying nursing kardex. Reducing workload and implementing training courses to increase the knowledge and self-confidence of nurses can affect increasing their ability. Brand (2013) suggests that

mental and physical barriers can affect the ability to use of new systems, and if does not manage properly, all attempts to change will fail. According to a study of Brand (2013), insufficient training, lack of computer skills, fear of failure, lack of time and having stress are the main reasons for inability to apply an electronic system [18]. The results of another study showed that the ability of employees to relate to their job performance [26].

Reinforcement consists any action or event that reinforces the change or modification created by an organization [16]. The results of present study show that 68/4% of nurses have recognized and supported the reinforce factors of nursing kardex change. Managers support the changes and uncertainty of nurses towards changes have had the highest and lowest score respectively, according to nurses, they were affected their readiness. It seems that according to nurses' observations and statements, the lack of making support until the end of the change and the lack of consideration for their views on previous experiences are their concerns for participating in this change. Therefore, it seems that nursing managers must make enough assurance for support and permanently participate in this change and use incentive methods and tools. Brand (2013) believes that supervisors should be able to support changes in positive and effective method and identify and eliminate employee's constraints in support of change. Based on the results of the study, according to participants' continuous support is especially important in the initial stage of the change [18]. Also, according to opinion of participants, the results of their work were important for managers, which is in line with the results of present study. The results of study by Sanjaghi., *et al.* (2016) show that personal interest have had the highest priority in making employees readiness for change, and they suggest that managers should Make sure regarding the positive impact of changes on human resource systems such as evaluation of performance, communication and rewards to employees [24]. According to a study by Hashemi (2016), matrons and authorities in Assistance department have been mentioned as the main supporters in the colonization of physiological childbirth. Also, the lack of equipment and manpower have had the highest rates in barriers of the colonization and continuation of physiological childbirth in the hospital [22]. Non- assigning scores and rewards to nurses who recorded nursing diagnosis, as barriers to nursing diagnosis record in the reports have mentioned. The manager's behavior pattern in the organization is the main factor for creating motivation and increasing the employee's job satisfaction [23]. The study of Hagos., *et al.* (2014), showed 99% of nurses have had a positive attitude toward applying the nursing process, but reasons such as lack of knowledge and lack of reinforcing factors prevented from applying it [7]. Lack of time in work shifts, inappropriateness of hospital reception with the nursing process and imbalance in the number of nurses to patients are barriers mentioned in applying the nursing process in the present study.

According to response to the research question "The readiness of applying nursing process kardex is related to which of demographic variables of nurses?".

By investigating the results of the study, is observed that in all components of the ADKAR model, except of the desire component, training hospitals obtained more scores, in addition to the majority of the participants in these centers, can be caused by the desire to apply new findings in these centers which has been created due to the continuing interconnection of training hospitals with universities and colleges, and the continuous presence of professors and students in these centers. In line with the present study, the results of a study by Hashemi (2016) also show that in training hospitals the score of colonization physiological childbirth was higher than in non-training and private hospitals, which shows more physiological childbirth facilities and classes [22]. In the study by Hagos., *et al.* (2014), the educational status of individuals has been associated with knowledge of nurses in applying nursing process, so that individuals with a bachelor's degree have had more knowledge than individuals with a diploma's degree [7].

In components of the ability and reinforcement, the officially employed nurses and interns earned a higher average score. It seems that the stability of previous work experience and situation of change in officially employed nurses and high motivation and enthusiasm in interns that are observed in the early years of working life, as well as their youth passion have been affected for these results. Hashemi (2016), indicated that work experience of less than a year in the physiological childbirth department has had an impact on the ability and knowledge of midwifes [22]. Contrary to the present study, the results of a study by Bikmoradi., *et al.* (2015) show that job insecurity

caused by the instability of corporate employment status can lead to more organizational learning than employees with official employment status in nurses of intensive care units [30]. In the study of Dehghani., *et al*. 2014, the knowledge score was related to age, sex and work experience of nurses [19]. According to a study by Barber (2010), there was no a significant relationship between demographic variables and readiness for change. But in work shifts, the most readiness for change has been observed in employees with night work shifts [25]. The results of a study by Alazzam., *et al*. (2012) also showed that there was no a significant relationship between age, work experience and educational background in teachers with a general readiness to change. In the present study, general readiness includes knowledge, skills and attitudes about information and communication technology. There was evidence of a significant relationship between gender and learning skills in a partial review of readiness and men had more skill [31]. In another study, the acceptance of clinical records in men was more than women [32].

With regard to the results obtained in each section of ADKAR's model, with regard to the average score above 3 in all of the components of the questionnaire, evidence suggests that most of the nurses who participate in the study have readiness for applying nursing process kardex. Having readiness for making positive attitudes in individuals reduces their potential resistances [1]. Nurses' access to new knowledge and skills will enhance their ability and readiness [2].

Conclusion

Due to the importance of readiness and its impact on the progress of the change projects and also the clarity of the importance of using the nursing process in providing care to patients, the present study aimed to assess the readiness of applying nursing process kardex based ADKAR model in nurses working in hospitals of Iran Medical Sciences University. The results show that the majority of nurses are ready to make this change, and more than half of the participants received a sufficient score in each component of ADKAR model. Also, the results show that there was a significant relationship between the level of readiness with the type of hospital and employment status. In training hospitals, the average scores on all components were higher than in therapeutic hospitals. It seems that officially employed nurses and interns have had more ability in applying kardex. However, the results of the study as well as other studies, show that problems such as high workload, lack of reward allocation for nurses who record nursing diagnosis, non-implementation of case method in health care services for complete care of patients, lack of in-service training courses and finally imbalance in number of nurse than number of patient can affect providing nursing process based health care and its record. Therefore, it is necessary that the relevant authorities take the necessary actions to address these barriers.

Ethical Considerations

The present study was registered in November 2018, under the ethics code of IR.IUMS.FMD.REC1396.9311686002 received in the Ethics Committee of Iran University of Medical Sciences. Each subject signed a consent form and was assured that the study would have no harm and that they could quit the study if they had no more inclination to continue joining the study.

Funding

Authors' Contributions

All authors contributed in designing, running, and writing all parts of the research.

Conflict of Interest

The authors declared no conflict of interest.

Acknowledgments

Bibliography

1. Hiatt J and Creasey TJ. "Change Management: the people side of change". Dirst edition. Loveland: Prosci Reacerch (2003).

2. Maleki M., *et al*. "Relationship Between Structural Empowering And Nurses' Readiness For Change". *Iran Journal of Nursing (IJN)* 25.76 (2012): 10-18.

3. Pellettiere V. "Organization Self-Assessment To Determine The Readiness And Risk For A Planned Change". *Organization Development Journal* 24.4 (2006): 38.

4. Armenakis AA., *et al*. "Creating Readiness For Organizational Change". *Human Relations* 46.6 (1993): 681-703.

5. Norshidah N. "The Influence Of Emotional Intelligence, Leadership Behaviour And Organizational Commitment On Organizational Readiness For Change In Higher Learning Institution". *Procedia-Social And Behavioral Sciences* 29 (2011): 129-138.

6. Ahmadi M., *et al*. "Nursing Information Management". Tehran: Jaafari (2011).

7. Hagos F., *et al*. "Application Of Nursing Process And Its Affecting Factors Among Nurses Working In Mekelle Zone Hospitals, Northern Ethiopia". *Nursing Research And Practice* (2014): 1-9.

8. Farahani ZB., *et al*. "The Impact of Training on Nursing Process Implementation Skills of Surgical Ward Nurses". *Health Sciences* 5.7s (2016): 268-272.

9. Mahmoud MH and Bayoumy HM. "Barriers and facilitators for execution of nursing process from nurses' perspective". *International Journal of Advanced Research* 2.2 (2014): 300-315.

10. Wittenstein RD. "Factors influencing individual readiness for change in a health care environment". United States The George Washington University (2008).

11. Choi M and Ruona WE. "Individual Readiness For Organizational Change And Its Implications For Human Resource And Organization Development". *Human Resource Development Review* 10.1 (2011): 46-73.

12. Prosci. "ADKAR Change Management Model Overview". Change Management Learning Center (2015).

13. Prosci. "ADKAR Model". Change Management Learning Center (2015).

14. Truong TLA and Swierczek FW. "Predicting The Relationships Between Human Resource Factors And The Effectiveness Of A Change Project". *Asia Pacific Management Review* 14.1 (2009): 69-83.

15. Boca GD. "Adkar Model Vs. Quality Management Change". International Conference Risk In Contemporary Economy; Galati, Romania (2013).

16. Hiatt J. "ADKAR: a model for change in business, government, and our community". First edition. Loveland: Prosci Learning Center Publications (2006).

17. Prosci. "Why Use The Adkar Model". Change Management Learning Center (2015).

18. Brand CGM. "Factors Influencing Change Management In A Selected Hospital In Saudi Arabia". Saudi Arabia: Stellenbosch University (2013).

19. Dehghan A., *et al*. "A Comparison Of The Difference Between Public And Private Health Centers Readiness In Terms Of Using Health". *Business Intelligence Systems Health Management* 19.64 (2016): 31-42.

20. Mehraram M., *et al*. "Evaluation Of Knowledge, Attitude, Ability And Preparedness For Elearning Among Continuing Medical Education Learners Iranian". *Journal of Medical Education* 15.80 (2016).

21. Jasemi M., *et al*. "Assessing Quality Of Nursing Documentations And Effective Factors On It In Medical-Surgical Units". *Quarterly Journal of Nursing Management* 1.3 (2012).

22. Hashemi M. "Relationship Between Readiness For Chang In Maternality Ward With Promotion Of Physiologic Childbirth In Hospitals Affiliated To Iran University Of Medical Sciences". Unpublished: Iran Univercity Of Medical Sciences (2016).

23. Matbouei M., *et al*. "Assessment Of Barriers For Recording Nursing Diagnoses By Nurses And Proposing A Solution". *Journal of Nursing and Midwifery Faculty Shahid Beheshti University of Medical Sciences and Health Services* 24.84 (2014): 27-33.

24. Sanjaghi M., *et al*. "The Effect of Emotional Intelligence and Learning Culture in Organizations on the Relationship Between Leader Behavior and Staff Readiness for Change". *Journal of Organizational Behavior Studies* 5.3 (2016): 163-195.

25. Barber VA. "A Study of Change Readiness: Factors That Influence the Readiness of Frontline Workers Towards a Nursing Home Transformational Change Initiative [Dissertation]". New York St. John Fisher College (2010).

26. Nedaii T., *et al*. "Readiness (Ability and Desire) of sports federation staff with their effectiveness". *Research in Sport Management and Motor Behavior* 6.11 (2016).

27. Akhtar S., *et al*. "Barriers and facilitators for execution of nursing process among nurses from medical and surgical wards in a public hospital Lahore". *International Journal of Social Sciences and Management* 5.3 (2018): 170-186.

28. Lowery MS. "Change Management In A Dynamic Information Technology Environment: Inquiries Into The Adkar Model For Change Management Results [Thesis - Open Access]". Denver, Colorado: Regis University (2010).

29. Vaezi R., *et al*. "An Attitude to the Change in the Perspective of Islamic Teachings and Its Constraints on the Excitement of Employees to Change". *Journal of Organizational Behavior Studies* 3.1-2 (2016): 1-30.

30. Bikmoradi A., *et al*. "The Correlation Between Demographic Characteristics And Learning Organization In Intensive Care Units Of Teaching Hospitals, Hamadan, Iran". *Scientific Journal of Hamedan Nursing and Midwifery Faculty* 23.3 (2015): 27-39.

31. Alazzam A-O., *et al*. "Effects Of Demographic Characteristics, Educational Background, And Supporting Factors On Ict Readiness Of Technical And Vocational Teachers In Malaysia". *International Education Studies* 5.6 (2012): 229-243.

32. Kahouei M and Babamohamadi H. "Factors Affecting Information Technology Acceptance In Clinical Settings From Nurses". *Perspective Journal of Paramedicine Faculty of Tehran University of Medical Sciences* 7.3 (2013).