Predictors of Research Utilization Among Jordanian Registered Nurses: A Descriptive Correlational Study

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ABSTRACT

Research utilization has a role in developing and empowering the profession of nursing, improving the quality of care, and indicating the greatest change in nursing practice results. However, there are many barriers that prevent research utilization into clinical areas. Thus the aim of this study is to explore the predictors that facilitate and/or limit the utilization of research findings. A descriptive correlation design was used to collect data from 539 Jordanian registered nurses, using a self-administered questionnaire. The results reflect the presence of several barriers, most of them were related to organization characteristics, and the greatest barrier was the routine is dominated in nursing profession. The included demographic and contextual characteristics and barriers to research utilization explained 76% of research utilization. Health care managers and decision makers need to play a visible and instrumental role in encouraging research utilization and supporting the facilitators to research utilization to improve patients' quality of life.

Keywords- Barriers to Research utilization; Facilitators of research utilization; Jordanian registered nurses.

1. INTRODUCTION

Research utilization (RU) is a complex process in which scientifically produced knowledge is transferred to practice [1]. It has a role in developing and empowering the profession of nursing, improving the quality of care provided to patients, and indicating the greatest change in nursing practice results [2], [3], [4], [5], [6], [7].

Millenson reported that 85% of health professionals' work had not relied on evidence-based practice [8]. Balas and Boren indicated that the average gap between knowledge generation by experimental studies and its implementation in clinical practice is 17 years [9]. Nurses in clinical areas face many barriers to implement research findings into their practice that vary between countries and from clinical area to another [10], [4], [11], [6], [12], [13], [14]. Lack of time, resources and authority to change practice, unclear and unreadable research reports and difficulties' in understanding statistical analysis, English language, the belief in medical knowledge rather than nursing knowledge, and the absence of the real impact of nursing research on practice were the most frequently reported barriers [4], [15], [16], [17], [6], [11], [18], [19], [10], [20], [21].

On the other hand, Ploeg and his colleague indicated that the dissemination of information about clinical practice guidelines, specifically through education and mentoring, being influential practice leaders at interdisciplinary committees, and tailoring the guideline implementation strategies to the organizational context were the greatest suggested facilitators [22]. Panagiari pointed out that the availability of time and staff hires were facilitators at 86% of research findings [23]. Other studies emphasized the key role of the organization to promote research utilization [19], [5], [12]. Nurses working in contexts with more positive culture, leadership, and evaluation reported significantly more RU [24], [25]. Bostrom and his colleague stated that support from unit managers is the greatest facilitator to RU [26].

Tsai suggested the development of a "research corner" in each clinical unit for poster display and discussion and presentation of research findings in an open debate to facilitate RU [13]. Chau and his colleague found that managerial support, colleague support, and increasing nursing knowledge about research were the three greatest organizational facilitators for RU [27]. Other reported factors included the availability of more relevant research and colleague support [28], reading journals that publish original research, establishing a journal club, the availability of a nursing research committee and easy access to the internet [29].

The relationship between the characteristics of the nurse and the use of research in clinical practice has been examined by nurse researchers. Ofi, et al,; Veeramah and Smirnoff, et al. found significant relationship between the level of education, age, and job title and RU [6], [14], [30]. Kuuppelomaki & Tuomi indicated that age and type of work place were positively associated with nurses' attitudes toward nursing research [4]. Conversely, Oh detected no relationship between the level of education and RU [12]. Furthermore, Smirnoff, et al. found no significant correlation between age and job title and RU [30]. Chau, et al. found no significant correlation between

age and years of experience with RU [27]. In Jordan, according to the modified public health law number 54 for the year 2007 [31], among the responsibilities of the Ministry of Health (MoH) are to collect and disseminate health information, which overtly convey a call for utilizing the research in practice. The Jordanian Nursing Council (JNC) listed the support to scientific research as a top priority and considered the determination of best practice as a major responsibility of professional nurses [32]. The last few decades, witnessed a great progress in the field of nursing science. The number of published papers conducted by Jordanian nurse researchers increased from only one in 1958 to approximately 214 by 2010 in which around 72 studies were directed at clinical practice although the majority (97.5%) was conducted by academicians [32]. However, the theory-practice gap still exists and knowledge of the extent to which nursing care provided to patients in Jordan is based on research findings remains unclear. Therefore, this study is the first in Jordan that focuses on barriers and facilitators and the predictors of RU in nursing practice .The results will provide directions to nurse managers and policy makers in Jordan and in countries with parallel or similar clinical context, in planning for future training of nurses and developing strategies to promote the nurses' action toward evidence-based practice.

1.1 Study questions

1.   What are the barriers and facilitators to RU as perceived by Jordanian registered nurses?

2.   What are the predictors of RU among Jordanian registered nurses?

2.   METHODOLOGY

2.1 Setting

This descriptive correlational study was conducted in six public hospitals and four private hospitals. Only hospitals with bed capacity of 150 or more were selected to ensure availability of adequate number of nurses for sampling purposes.

2.2 Sampling and Sample Size

The sample size was calculated based on computer program "Creative Research Systems Survey Software Calculator". The required sample was 615 registered nurses. The nurses from each sector were selected using the convenient sampling procedure.

A probability value of 0.05 on two tailed was accepted as the level of statistical significance, the estimated effect size was medium effect size of 0.15 and a statistical power is 0.80 [13].

2.3 The instrument

Exploring Theory-Practice Gap Questionnaire (ETPGQ) was developed by the researchers based on the literature. It is composed of three sections; Demographic Data form, Barriers to RU Scale and Facilitators to RU Scale.

The Barriers to RU Scale is consists of 38 items grouped under four subscales (Nurse characteristics, Organization characteristics, Research characteristics and Communication characteristics). Facilitators to RU Scale consist of 20 items grouped under the same four subscales. Respondents' are required to rate each item in the "Barriers to RU scale" and the "Facilitators to RU scale" by using a 5-point Likert like scale ranging from one "strongly disagree" to five "strongly agree".

The English version was tested for face and content validity by an expert panel composed of five professors in nursing. The questionnaire was translated to the Arabic language and back translated by the researchers and linguistic oriented person. The final Arabic version was pilot tested to assess the feasibility of the study, provide data about recruiting the subjects, and clarity of the questionnaire. Also to check for understanding, time required for filling the questionnaire, and to test the psychometric prosperities of the questionnaire. Cronbach's alpha for the total questionnaire except section one was 0.90. Cronbach's alpha for the Barriers Scale was 0.91 and for the Facilitators Scale was 0.93.

2.4 Ethical Consideration

Ethical approval to conduct the study was obtained from the IRB at the University of Jordan and in each hospital. Once a participant was identified, the researcher provided adequate information about the significance and purposes of the study. Participants were assured that participation is voluntary. In addition, they were told to feel free to withdraw at any time. Furthermore, the participants were instructed that their completion of the questionnaire will be considered a written consent for their participation and their responses will be treated confidentially.

2.5 Data collection

The recruitment process of the sample began in November 2010 and continued through March 2011. Nurses who agreed to participate were provided with the package which included the cover letter and a copy of the questionnaire. A total of 615 packages were distributed. The response rate was 87.6%.

2.6 Data Analysis

Data were analysed using the SPSS, version 16.0 (IBM Corporation). Scores were calculated for each scale by averaging of the individual's scores on the items for that scale. Thus, the appropriate divisor for the mean is the number of items in that scale [33].

Descriptive statistics were used to describe the following variables (demographic variables, total scores of barriers to RU, and total scores of suggested facilitators to RU). Pearson's product moment correlation coefficient (r) was used to examine the relationship between barriers to RU, facilitators to RU and demographics. Independent variables that were significantly correlated with the dependent variable (RU) were introduced in the regression analysis to yield predictors of RU.

3. RESULTS

3.1 Demographic characteristics of the sample

Fifty seven percent of the sample was males and the mean age was 29 years (SD = 6.85). Two hundred and ninety seven (55%) of the sample were married. The highest percentage of participants were baccalaureate degree holders (81%) and the average years of experience in nursing was 7.08 years (SD = 7.1). 54% of the sample is working in private hospitals and 48% are working in medical and surgical departments, 42% in critical care units, 3% in managerial positions, 3% in education units and 4% in infection control and\or quality unit

The most reported barrier was organization characteristics (M = 3.52, SD = 0.70), followed by research characteristics (M = 3.36, SD = 0.68), communication characteristics (M = 3.31, SD = 0.66), and nurse characteristics (M = 3.06, SD = 0.76) respectively.

Table (1) shows that twenty one items were considered as greatest barriers and the remaining seventeen items were ranked as mild barriers. The top five barriers based on ranking of mean scores were related to organizational characteristics as follows: routines in providing nursing care dominate, lack of consistency between education and practice in nursing discipline, lack of organizational and administrative motivation for its employee to do research, the nurse is too busy providing patient care and has no time to read research reports or studies, and the shortage of staff nurses hinders the implementation of new evidences.

The facilitators to research utilization in descending order were related to nurse characteristics (M = 4.23), the organization characteristics (M = 4.14), research characteristics (M = 4.09), then communication characteristics (M = 4.00) respectively.

Table 1: Barriers to RU, Rank Ordered by means

Rank	IC	Barrier	Mean
1	O	Routines in providing nursing care dominate	3.92
2	O	Lack of consistency between education and practice in nursing discipline.	3.88
3	O	Lack of organizational and administrative motivation for its employee to do research	3.83
4	O	The nurse is too busy providing patient care and has no time to read research reports or studies.	3.72
5	O	The shortage of staff nurses hinders the implementation of new evidences.	3.69
6	C	The nurse is not informed about available nursing research studies.	3.66
7	O	Other staff nurses are not supportive to implementing new evidences.	3.61
8	O	Unavailability of internet access in the unit or department where I work	3.59
9	N	The nurse is unaware of the available studies in their country.	3.58
10	O	There is insufficient time on the job to implement new evidences.	3.578
11	C	Reports usually have unclear applications for nursing practice.	3.54
12	O	There are insufficient resources (e.g. equipment) in the clinical areas to help in implementing research findings	3.54
13	O	Lack of enough authority to change patient care procedures according to research findings.	3.54
14	N	Lack of collaboration between academic nurses and practitioners.	3.53
15	C	Research articles are not readily available in clinical areas.	3.51
16	O	Job description does not include statements that mandate participation in efforts or activities to change practice.	3.50
17	R	The nurse is doubtful about the results of the research study or reports.	3.46
18	O	There are difficulties to obtain new instruments that may be needed to implement research findings.	3.45
19	R	The research study or report has not been replicated to be confidently used to change practice.	3.40
20	O	Administrators and decision makers lack interest in identifying better ways of do things.	3.35
21	C	Statistical analysis is unclear and difficult to understand.	3.34
22	N	The nurse lacks the skills to find appropriate research studies.	3.32
23	O	The nurse feels that research results are not applicable to their clinical areas.	3.31
24	R	The amount of research reports or studies is overwhelming.	3.30
25	R	The literature reports contain conflicting results.	3.27
26	O	Years of experience without any evidence of participation in research activities are enough for nurses to gain high executive posts.	3.25
27	N	Nurse is dissatisfied with nursing profession. Therefore, she/he doesn't have enthusiastic to improve it.	3.24
28	O	Administrators would not allow the implementation of new evidences.	3.19
29	C	Nurses have English language problems because it is not their first language and most research reports are written in English.	3.15
30	C	The research reports are not clearly written or unreadable.	3.05

31	N	The nurse lacks the capability to evaluating the quality of research articles.	2.97
32	O	Administrators prevent nurses from using the library and the internet.	2.93
33	C	Conducting research being only relevant to nursing educators not to clinical nurses.	2.92
34	N	There is no documented need to change nursing practice.	2.90
35	N	Nurse does not see the value of research in their practice.	2.83
36	N	The nurse doesn't like to change the traditional way of work.	2.78
37	N	The nurse sees reading and implementing research findings to have little advantage to self development.	2.72
38	N	The nurse feels the benefits of changing practice will be minimal to patients.	2.68
The mean score of the total scale is 3.34 (SD = 0.57)			
Key	**IC – Item Characteristic, O –Organization, C – Communication, N – Nurse, R – Research**		

Twelve items ranked as greatest facilitators and the remaining eight items were ranked as mild facilitators (table 2). The top five suggested facilitators based on ranking of mean scores were: the opportunity and time to attend and participate in national and international nursing conferences, the creation of an environment in which nurses are comfortable in critiquing and evaluating the current practice, having computer skills to allocate research reports, developing policies and procedures that support change of practice and use of new evidences, and finally, providing facilities and resources that promote access to research reports. The other suggested facilitators received lower scores.

The overall regression, including all predictors, was statistically significant, $R = .87$, $R^2 = .76$, adjusted $R^2 = .75$, $F = 88.4$, $P<.001$. The results of regression analysis are shows that 6 variables were significantly predictive of RU; these included years of experience, beta coefficient is 0.065 ($t = 2.765$, $P = .006$); current area of practice (unit\department), beta coefficient is -0.062 ($t = -2.539$, $P = .011$); barriers related to research, beta coefficient is -0.103 ($t = -3.659$, $P = .0001$); barriers related to communication, beta coefficient is 0.066 ($t = 2.085$, $P = .038$); and facilitators related to communication, beta coefficient is 0.047 ($t = 2.002$, $P = .046$).

Table 2. Facilitators to RU in rank order by means

Rank	Related subscale	Facilitator	Mean
1	Organization	Opportunity and time to attend and participate in national and international nursing conferences.	4.24
2	Nurse	Creation of an environment in which nurses are comfortable in critiquing and evaluating the current practice.	4.23
3	Nurse	Having computer skills to allocate research reports.	4.22
4	Organization	Develop policy and procedures that support change of practice and use of new evidences.	4.20
5	Organization	Providing facilities and resources that promote access to research reports.	4.19
6	Organization	Allocate financial resources to support research capacity building activities and to support research utilization and implementation of evidences.	4.18
7	Nurse	Possessing skills in the English language (reading and comprehension).	4.18
8	Organization	Institutional motivations for persons conducting and implementing research studies.	4.16
9	Research	Increasing research knowledge base.	4.14
10	Communication	Providing colleague support networks.	4.14
11	Organization	Accessibility of an expert committee for critical appraisal, especially with regard to the presenting of sound results.	4.12
12	Research	Conducting more clinically focused and relevant studies.	4.12
13	Organization	Allocating specific time for reviewing and implementing research findings.	4.11
14	Research	Improve understandability of the research reports.	4.10
15	Organization	The goals of the organization should support research activities and reflects its mission.	4.08
16	Communication	Collaboration between knowledgeable nursing colleagues and nursing faculty in clinical setting.	4.08
17	Organization	Enhancing administrative support and encouragement for change by developing rewarding system and decentralized authority.	4.08
18	Organization	Assure decentralized administration and establish unit-level committees to allow greater research utilization by the staff.	4.08
19	Research	Presentation and discussion of relevant research in clinical area with staff nurses to be clear for implementation.	3.99
20	Communication	Physicians' collaboration and support to change practice.	3.79
The mean score of the total scale is 4.12			

The positive sign for the slope for years of experience indicated that higher scores on years of experience predicted higher scores on RU. The negative sign for the slope for current area of practice (unit\department) indicates that higher scores on current area of practice (unit\department) predict lower scores on RU. The negative sign for the slope for barriers related to research indicated that higher scores on barriers related to research predicted lower scores on RU. The positive sign for the slope for barriers related to communication indicated that higher scores on barriers related to communication predicted higher scores on RU. The positive sign for the slope for facilitators related to communication indicated that higher scores on facilitators related to communication predicted higher scores on RU.

The other predictors (age, gender, job title, barriers related to nurse, and barriers related to organizations) were excluded from the final regression model because all of them were not significantly predictive of RU in this regression.

4. DISCUSSION

In this study, many barriers and facilitators to RU among Jordanian registered nurses were determined. The main factor that was identified as a barrier to RU was organization factor. This finding was congruent with the literature that describes the barriers to RU [26], [27], [10], [13].

The level of RU is very low and this is related to the presence of several barriers to RU. All the items mentioned in barriers section were considered barriers to RU by all participants of Jordanian registered nurses but with different levels of significance.

The greatest twenty one barriers identified were consistent with previous studies [34], [16], [11], [6]. Thirteen barriers fall under the organization subscale; three falls under the communication subscale, and two falls under the nurse subscale. The item that states "Routine in providing nursing care is dominate" was ranked first as an important barrier to RU and it falls under the organization subscale. This is consistent with research findings [11] and may be attributed to that most new nurses depend in their practice on what they learn from experienced nurses in the unit\department.

Lack of consistency between education and practice in nursing was ranked as a second barrier. The explanation for this result may be related to that the research courses taught to students in faculties of nursing in different Jordanian universities emphasize on how to conduct research more than how to implement the findings of research into real clinical settings.

Lack of organizational and administrative motivation for the employee to do research was ranked third in significance as a barrier to RU and it fall under the organization subscale. This barrier may be explained by the presence of other barriers such as 'administrators and decision makers lack of interest in identifying better ways of do things', 'administrators would not allow the implementation of new evidences', and administrators prevent nurses from using library and internet. This result might be attributed to that many nursing moderators of hospitals were hold three years diploma and have graduated since a long time and have been taught according to old curricula that did not have research courses which makes it difficult for them to embrace the importance of RU and evidence-based practice. These barriers were congruent with the findings of other studies [28], [10], [11]. Mehrdad, et al indicated that 'administrative and managerial staffs are not supportive of implementing change based on research findings' [11]. Furthermore, they reported that nurses claimed that they received the least support from persons in management positions in relation to RU and pointed out that the ward manager is the most vital source of support [11]. In Kajermo, et al. study, lack of support from head nurses was the first ranked barrier [10]. Enhancing administrative support and encouragement of nurses by developing rewarding system and decentralizing decision-making, developing a shared governance system and allowing nurses to use the available organizational resources such as library and internet...etc. may facilitate RU.

Other barriers were rated as important barriers to RU in several studies, regardless of the differences of the rank order of each barrier from one study to another. These include: "the nurses were too busy providing patients care and had no time to read research studies, and there is insufficient time on the job to implement new evidences". These two barriers may be related to another barrier which is "the shortage of staff nurses hinders the implementation of new evidences". The time issue was mentioned in all research studies investigating this phenomenon. Nurses from different hospital units and departments claimed that they had a lot of responsibilities for large number of patients and there is no enough nurses working on each shift to respond to patients needs and sometimes the nurse works two shifts in the same day due to the load of the work in the units and departments. Thus, there was often no time for reading research articles, going to the library, searching in the internet, and sharing in implementation process of new findings or discussing RU issue with administrative persons.

The item that states "The nurses are not informed about the available research studies" was ranked sixth in significance as a barrier to RU and falls under the communication subscale. This is consistent with the findings of other studies [28], [19], [21], [14]. This finding may be explained by other barriers such as "research studies are not readily available in clinical areas", "conducting research being only relevant to nursing educators not to clinical nurses", and "lack of collaboration between academic nurses and practitioners". Additionally, the history of nursing research in Jordan is short; it started in the late of 1980s, to date there is no refereed nursing journal in Jordan. Moreover, most of research studies were conducted by academician in universities (Khalaf, Faculty of Nursing First Scientific

Nursing Conference presentation-Zarqa Private University, 2010) and the academician do not disseminate the findings to clinical nurses. Furthermore, there are no specific official departments in health care settings accountable to carry out the responsibility to disseminate research findings into the target settings and persons to take the benefits of these studies.

"Other staff nurses are not supportive to implement new evidences" was ranked as a seventh barrier. This finding was supported by other study [26]. This barrier may be explained by other barriers such as "job description does not include statements that mandate participation in efforts or activities to change practice", "years of experience without any evidence of participation in research activities are enough for nurses to gain high executive posts", "reports usually have unclear applications for nursing practice", and "nurse is dissatisfied with nursing profession, therefore, she/he doesn't have the enthusiasm to improve it".

"Conducting research being only relevant to nursing educators not to clinical nurses", there is no documented need to change nursing practice, nurse do not see the value of research in their practice, nurses don't like to change the traditional way of work, the nurse sees reading and implementing research findings to have little advantage to self-development, and the nurse feels the benefits of changing practice will be minimal to patients were ranked by the majority of respondents as mild barriers. This explained that nurses like to be involved in research studies and to implement research findings and they believe in the quality of research and their benefits to patients health and nursing profession.

The item that states "There are insufficient resources (e.g. equipment) in the clinical areas to help in implementing research findings" was ranked twelfth (greater barrier) in significance as a barrier to RU and falls under the organization subscale. And there are difficulties to obtain new instruments that may be needed to implement research findings was ranked eighteenth (greater barrier) in significance as a barrier to RU and fall also under the organization subscale. These two findings were supported by several studies [26], [27], [19], [11], [21]. Lack of resources may explain that Jordan is one of the developing countries that had limited resources and financial support to research. Yet, this may not be considered a pure reason since many research findings don't require resources to be implemented and that conferences and scientific days became a phenomenon in Jordan and nurses are invited to attend either for free or with minimal fees. Lack of enough authority to change patient care procedures according to research findings was rated among the greatest barriers to RU (ranked thirteen). This finding is congruent with findings of several prior studies [27], [28], [11], [35]. Physicians who are working in Jordanian institutions dominate over all other healthcare providers. Nurses follow physicians order, and have no place in decision making process, and physicians feels that nurses have no enough knowledge to take their decisions regarding patients health. Mehrdad, et al. pointed out that nurses

need legal authority to create better working conditions to work within full professional scope of nursing practice [11].

The results of this study show significant impact of some demographical characteristics' on the overall score of identified barriers to RU. There is a significant negative relationship between age and the overall score of identified barriers to RU. This result may be related to the lack of research knowledge among the more experienced nurses and that years of experience without any evidence of participation in research activities are enough for nurses to gain high executive posts. There is a significant positive relationship between level of education and the overall score of identified barriers to RU. This result is congruent with previous research study [6]. The educated personnel may always try to search for the updated information and during this process they face barriers more than the persons who always do their works according to routine. There is a significant positive relationship between current area of practice (hospital) and the overall score of identified barriers to RU. Always, the private sectors in all countries try to provide the highest quality care and they encourage their workers to do that and considered this as one of their main responsibilities. This may also be related to that the accreditation has become necessary for promotion and marketing purposes.

Characteristics of nurse group were ranked as the first greatest suggested facilitators for Jordanian registered nurses demonstrating that Jordanian nurses are enthusiastic to improve themselves and their work place environment and to acquire the research knowledge and to be included in implementation process to improve the quality of life of their patients. Nurses form the corner stone for any improvement in quality of provided care but they require support and motivation from their institutions managers and decision makers. Characteristics of organization were ranked as the second greatest suggested facilitators for Jordanian registered nurses indicating that Jordanian institutions still do not have a research culture and need vast amount of modifications and improvements. "Characteristics of research group" were ranked as the third greatest suggested facilitators for Jordanian registered nurses demonstrating that nurses value the research studies and need to read research studies and assess them critically in order to be able to implement the findings. The characteristics of communication group were ranked as the least significant suggested facilitators for Jordanian registered nurses demonstrating that the dissemination and presentation of research findings considered easy process if all the previous factors were achieved.

Regarding the suggested factors to RU, the study respondents signify that the opportunity and time to attend and participate in national and international nursing conferences is a major suggested facilitator. In studies conducted by Ofi, et al., Mehrdad, et al., and Goderis, et al. the time issue was one of the major barriers that nurses mentioned [6], [11], [36]. Providing enough time for nurses to attend and participate in scientific conferences is

an important concern for administrators and nurse leaders to rise above this problem [37], [28], [19],[35].

The next two important suggested facilitators to promote RU found in the literature were also identified by the respondents of the present study. These include: creation of an environment, in which nurses are comfortable in critiquing and evaluating the current practice, and having computer skills to allocate research findings. In Mehrdad, et al. study, the participants identified this suggested facilitator as an important factor to improve RU process [11]. Kajermo, et al. and Mehrdad, et al. have found that developing skills in searching for appropriate literature is one of the most suggested facilitators to RU [10], [11]. Other suggested facilitators recognized by Jordanian registered nurses in this study to encourage RU in their daily clinical practice were clarified in the attached table (2). Several similar factors that could facilitate RU were identified in the literature [11], [29], [38], [39], [40].

The results of this study show significant impact of some demographic characteristics on the overall score of suggested facilitators to RU. There is a significant positive relationship between age and years of experience and the suggested facilitators to RU. This result may reveal the loyalty, fond, and caring of experienced nurses to their profession and that they are ready to improve the profession and their work. Also, there is a significant positive relationship between marital status and the suggested facilitators to RU. This result may be explained by that the married person develops a more intense feeling of responsibility toward others as they become responsible for their families.

In the current study, multiple linear regression analysis indicated that all subscales of barriers to RU, and suggested facilitators to RU subscale were related to some factors such as communication, age, gender, job title, years of experience, current area of . This result is contrary to the results of some other studies [27], [4], [30]. The explanation of this finding may be related to that the more experienced nurses have little knowledge about RU because they did not receive any further research courses in their clinical areas after graduation. Also, there is a significant negative relationship between years of experience and the overall score of RU. This result is contradicted with the results of other studies [27], [13]. The explanation of this finding may be related to the same reasons related to the age that the more experienced nurses (older nurses) have little knowledge about RU because they did not receive any further research courses in their clinical areas after graduation. There is a positive significant relationship between gender and the overall score of RU, no other previous studies considered this relationship; this may be related to that male nurse's form 57% of the sample. This result may explain that male nurses know that nursing is a female profession but they may have an internal force to change this issue and they are sure that their presence in nursing field can strengthen this profession and do some positive changes to achieve their personality in this profession. There is a significant negative relationship between current area of practice

(unit\department) and the overall score of RU. The majority of the respondents was working in medical and surgical units, and may feel that their work is routine. There is a significant negative relationship between job title and the overall score of RU. The majority of the sample was bed side nurses, they did not use research in their clinical practice due to lack of support from administrators and lack of time to read and implement research findings into their clinical settings. In Kajermo, et al. study, dissatisfaction with support from immediate superiors for participating in research and\or project, having no academic degree, and unclear and unrealistic workplace goals were identified as predictors increasing the risk of perceiving barriers to RU in clinical settings [10].

5. CONCLUSION

RU is an important issue that nurses should not ignore. The institutional environment is a key factor in enhancing RU. Jordanian registered nurses face many barriers to implementing research findings into their different clinical settings. Routine in providing nursing care is dominate, lack of consistency between education and practice in nursing discipline, and lack of organizational and administrative motivation for its employee to conduct research were the highest mentioned barriers. On the other hand, opportunity and time to attend and participate in national and international nursing conferences, creation of an environment in which nurses are comfortable in critiquing and evaluating the current practice, and having computer skills to allocate research findings were the three greatest suggested facilitators to RU. Factors affecting RU are multidimensional and show that optimizing them should be a shared responsibility of nurse administrators and other organizational managers, researchers, clinicians, and academicians.

Conflict of Interest
No conflict of interest has been declared by the authors

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