

Jordanian National Study of Nurses' Barriers to Participating in Research

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Abstract

Background: The nurses are the healthcare providers and researchers in critical institutions that provided health care for all people, and society needs to invest in them. The purpose of this study was to survey nurses regarding barriers to participate in research studies.

Methods: A cross-sectional descriptive study. A total of 447 nurses agreed to participate in the study. Barriers were measured using Barriers of Research Utilization Scale (BRU).

Results: More than half (53.3%) of the sample perceived the barriers to be high, whereas 8.9% perceived it as low. Barriers related to the organization scored the highest ($P < 0.01$) compared to the other domains (nurse, innovation and communication). Regression analysis model showed that age, working experience, and nationality were associated with barriers to participate in research.

Conclusion: More than half of the nurses in Jordan perceived the barriers of participation in research to be high. The barriers associated with the organization had more influence. A comprehensive approach should be developed to boost participation in research by significantly improving managerial support since it may be the most productive facilitator.

Background

All professions and specialties require scientific research. The researchers used the gained knowledge to improve the state of science in all fields¹ and to benefit both the researchers and society. The nurses are the healthcare providers and researchers in critical institutions that provided health care for all people, and society needs to invest in them.²⁻⁴ The decision maker and institutions need to know the barriers that are preventing nurses to participate in the research. Many studies reported that the main barriers to participation in research are regarding the organization. This includes inappropriate support from professionals, culture and climate of the work.^{3,5} Other factors include the nurse characteristics related to poor knowledge and skill, negative attitude toward nurses, poor awareness of the importance of evidence based practice.^{3,6}

In Jordan, there is a demand to increase the quality of healthcare and to reduce its cost. This is especially essential because of the limited resources, coupled with an increasing number of very learned patients who demand high standards from their systems of health care. Besides, the health care system in Jordan is experiencing cost and quality challenges that nursing research can address.^{2,4,6} Several studies were conducted in other countries to examine the barriers of participation in research among nurses⁷ and how such barriers are influenced by demographic variables,^{3,8} Identification of the barriers and factors associated with them may help decision maker and institutions to engage more nurses in the research to enhance the visibility of nurses in developing evidence based health care. Therefore, the Purpose of this study was to survey nurses regarding barriers of participating in research.

Method

Research design, sample, and setting

A descriptive cross-sectional correlation design was used to fulfill the goals of this study. A survey questionnaire was distributed electronically to a convenience sample of 1000 nurses working at any private and governmental hospital in Jordan. Inclusion criteria include holding at least a bachelor degree and having a current job in a hospital. A total of 448 nurses agreed to participate in the study (response rate is about 45%).

Procedure

The IRB Committee of the XXXX approved the study. Convenience number of nurses who met the requirements for inclusion in the research was invited to participate. The investigators approached each eligible nurse to give them a summary of the study and then asked them if they would like to take part in the study. If they wished to participate, their informed consent was obtained at this time. After a brief summary of the research had been given, the electronic questionnaire was sent to the agreed nurses. Out of a total of 1000 surveys that were distributed, 448 were filled electronically.

The electronic survey consisting of two parts as listed in the instrument section sent to nurses who meet the inclusion criteria at all wards in private and governmental hospitals. The electronic surveys sent by the head of each ward to allow a high response rate of those respondents. The two parts of the survey used in the study are: First part asked questions about age, gender, marital status, income, years of experience, nursing rank, nationality, living arrangement, working area. Also, asked two questions about previous publication and participating in research.

The second part is the Perception of Barrier of Research Utilization (BRU), this scale is developed by Funk *et al.*⁹ This scale includes 28 items. Each item is rated from 1 ('to no extent') to 4 ('to a great extent') reflecting the degree to which the item is perceived as a barrier. Four subscale utilized in this scale that includes (1) characteristics of the nurse such as the nurse's own awareness (8 items); (2) characteristics of the organization (8 items); (3) characteristics of the innovation (6 items) and (4) characteristics of the communication with organization (6 items). The scores of this scale range between 28 and 112. Score from 28 to 56 consider low, 57 to 74 consider moderate, and 75 to 112 consider high. This scale has verified for validity and reliability among nurses.^{7,9} Cronbach's α -values was .86.³

Ethical Consideration

This study approved by Jordan University of Science and Technology's IRB. Participants who meet the criteria received an electronic form about barriers of perception of barriers to participate in the research. This information states that researchers will use the information to help nurses and people in the

community. The researcher will maintain the privacy of the nurses' information; the researcher will not use any information in presentations or publications in a way that could identify the participant. The Principal investigator, the Office for Human Research Protections and agents will have appropriate regulatory oversight.

Statistical Analysis

Data were analyzed using SPSS statistical software version 21. A multiple regression model was used to examine the association of demographics with total barrier score. A P value < 0.05 was considered significant.

Results

Descriptive analysis

Demographic characteristics of the study are shown in Table 1. Average age of participants was 32.04 (SD = 8.2) years, females represented 51.2%. The majority of the study participants were Jordanian, married, and living in a city. They worked in both governmental and private institutions with years of work experience ranging from one to over 10 years. Most of the study participants (81.1%) were practicing nurses. Yet, only 35.6% had previous research experience, and 11.6% had research publications.

Perception of Barriers to Participation in research

Perception of barriers to participation in research was measured using BRU scale. According to the scale, 53.3% of the sample perceived the barriers to be high, whereas 8.9% perceived it as low. See Fig. 1. In addition, more than one-third (37.8%) perceived the barriers as moderate. When the items of the BRU were divided according to the four domains of the scale, barriers related to the organization domain scored the highest compared to the other domains (nurse, innovation and communication, $P < 0.01$). See Fig. 2. According to the individual items of the scale (Table 2), the highest mean scores were for the followings: "The nurse does not feel she/he has enough authority to change patient care procedures" (3.13) and "The facilities are inadequate for implementation" (3.07). On the other hand, the lowest mean scores were for the following items: "The research is not relevant to the nurse's practice" (2.34), "The conclusions drawn from the research are not justified" (2.42), and "The literature reports conflicting results" (2.46). Table 2 shows the responses to each attitude element in the perception of barriers to participation in the research scale questionnaire.

Multiple regression analysis

Multiple regressions were used to predict nurses' perceptions of barriers to participation in research according to demographic variables (age, gender, education level, work experience, and job role). Table 3

summarizes the outcomes of the multiple logistic regression tests. All of the listed factors are not associated with the perception of perception of Barrier of Research Utilization orders (p value > 0.05) except age, working experience, and nationality.

Discussion

This is the first national study in private and governmental hospital has been undertaken in Jordan to examine the perceptions that nurses have about barriers of participating in research. The current research, which was conducted in private and public hospital in Jordan, used a quantitative model to assess barriers of participating in nursing research. The study showed that the perception of barriers in participating in research in Jordanian nurse is high. This result is in agreement with other previous study. For example, Buhaid found that perception of participating in research for nurses in Bahrain is high and related to many issues of organization and authority.¹⁰

Our study found that the first barrier of participating in research according to nurse perception was the failure of nurses to consider themselves capable of changing the procedure of caring for patients. This outcome concurs with various studies of Buhaid in Bahrain.¹⁰ Thayumanavan & Paul in Bangalore¹¹ and Nwozichi & Ojewole¹² in Nigeria¹² who reported the same results regards authority and organization issues. Many medical institutions have an environment that shows medical dominance, nurses work in clinical surroundings where doctors impose most clinical decisions on them. This usually leads to a negative impact on the self-confidence of nurses and reduces the authority and power of nurses, including their possibility of fully working in the nursing field within the confines of their career.^{13, 14} Nurses require official authority that will enable them to create the best working atmosphere, including utilizing research, not only for their advantage but also for the patients' benefits by offering high standards for patients.^{15, 16} Although these studies use different sample types (nation, level of education, and different position in nursing), the outcomes indicate that many nurses assume that they do not have the power to make a difference in their workplace.^{8, 11}

Our study found that the second barrier of participating in research was "inadequate research implementation facilities". This was in agreement with previous research as major barriers of participating in research that include Chien et al,¹⁷ Chen et al,¹⁸ and Rutledge & Skelton¹⁶ which reflects the role of the institution in promoting participation in research. Thus, organizations of health care must make sure that resources are given to handle greater levels of participation in research. The outcome may be due to financial resource limitations that bar the application of the research findings in the work environment.^{19, 20} Nurses may require logistic assistance and motivation for the adoption of research to promote access to participation in research resources. The absence of facilities may be because Jordan is among the developing nations with limit resources that may influence the application of research outcomes.³ Thus, organizational and support from management is one method that can assist nurses in applying research in their job.

The multiple regression analysis carried out in the study to comprehend the effect of the demographic attributes of nurses on their views regarding barriers to utilization scale in the research indicated that there was no substantial connection between these attributes and the perception of nurses towards the obstacles to involvement in research.^{18,21,22} Nevertheless, this outcome is different from an initial study, which showed that none of the individual and career attributes- that is, age, sex, experience in nursing, education research, and involvement-had significance.^{3,5} Research on barriers to participation in research has indicated that nurses perceive organizational factors as barriers more than their attributes.^{5,23}

Studies showed a positive association between the duration of experience and the recognized barriers.^{18;}²⁴ According to this study, experience had a negative correlation with barriers to participation in research. This may be because nurses with more experience years often have higher administrative power in hospitals, which probably allow them to execute research outcomes in a clinical environment that could ultimately reduce their view towards participation in research barriers. More experience years allow nurses the perception of having the professional power to alter practice.

From the outcome of our research, it appears that nurses with younger ages show more positive attitudes toward research may be because younger ages require before and after graduation received an education and knowledge still update about information acquisition, methods of research, knowledge in statistics, evidence based practice, and applying research outcomes in practice.²⁵ Additionally, it is essential that methods of research and statistics have a clear presentation in published issues.^{26,27} It would especially benefit those articles of research that propose new results to incorporate participation in research regarding translating the research into work.^{24,25,28} The present results contradict other studies that found no association between demographic data and perception of barriers to participate in research.^{5,18} Establishing research and education unit in hospitals may be useful in which nursing research is investigated for its clinical environment use; such research and education unit could additionally offer consultation to nurses and help concerning methods of research and statistics. There is a high recommendation that nurse management is very proactive in applying research outcomes into practice and supports the topic more.

Relevance to Clinical Practice

There must be an explicit adoption of participation in research policy in all clinical environments and other clinical institutions. Recognizing the perceived barriers to the use of research would promote applying up to date and authentic research outcomes that may increase the standard of care patients receive, with little conflict in roles and more self-esteem among certified nurses. Besides, evidence based practice could reduce the cost of health care, the stay-length of patients, and possible complications in health.

Conclusions

There has not been a wide implementation of research use in Jordan due to several barriers. The barriers associated with the organization had more influence, with organizational issues related to authority and facility situation, limited time, limited administrative assistance, and lack of power being leading recognized barriers. A comprehensive approach should be developed to boost participation in research by significantly improving managerial support since it may be the most productive facilitator, considering the uniqueness of the culture in Jordan and the health care system in Jordan. Specific emphasis should give more focus to research-oriented continuing programs of learning, especially the newly selected nursing cadre. Multidimensional factors hinder participation in research. Their optimization should be an obligation shared among the nursing managers, tutors, clinicians, and researchers.

Abbreviations

PRU = Participation in Research Scale

Declarations

Ethics approval and consent to participate:

This research got an Approval from Jordan University of Science and Technology IRB(#20202343). Consent form was signed from all the participants.

Consent to publish:

We gave the right to BMC NURSING to publish

Availability of data and materials:

data will be sent upon request

Competing interests:

no conflict of interest for any author in this paper

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All authors have read and approved the manuscript”, and ensure that this is the case.

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Authors' Contributions

SA and KA: Conceptualization; Data curation; Formal analysis; Funding acquisition; Investigation; Methodology; Project administration; Resources; Software; Supervision; Validation; Visualization; Roles/Writing - original draft; Writing - review & editing.

OK and TM: Data curation; Formal analysis; Funding acquisition; Investigation; Methodology; Project administration; Resources; Supervision; Validation; Visualization; Roles/Writing - original draft; Writing - review & editing

**Perception of Barrier of Research Utilization (BRU), this scale is developed by [Funk *et al.*](#)⁹

References

1. Hendricks J, Cope V. Research is not a 'scary' word: Registered nurses and the barriers to research utilisation. *Nordic Journal of Nursing Research*. 2017 Mar;37(1):44-50.
2. Cidoncha-Moreno MÁ. Barriers to the implementation of research perceived by nurses from Osakidetza. *Enfermería Clínica (English Edition)*. 2017 Sep 1;27(5):286-93.
3. Hweidi IM, Tawalbeh LI, Al-hassan MA, Alayadeh RM, Al-Smadi AM. Research use of nurses working in the critical care units: Barriers and facilitators. *Dimensions of Critical Care Nursing*. 2017 Jul 1;36(4):226-33.
4. Mohamed NA, Mohamed HA, Mohamed SH. Evidence-based practice: barriers and facilitators among Nurses. *Zagazig Nursing Journal*. 2015 Jan 1;11(1):174-91.
5. Aljezawi M, Al Qadire M, Alhajjy MH, Tawalbeh LI, Alamery AH, Aloush S, ALBashtawy M. Barriers to integrating research into clinical nursing practice. *Journal of nursing care quality*. 2019 Jul 1;34(3):E7-11.
6. Al Khalaileh M, Al Qadire M, Musa AS, Al-Khawaldeh OA, Al Qudah H, Alhabahbeh A. Closing the Gap between Research Evidence and Clinical Practice: Jordanian Nurses' Perceived Barriers to Research Utilisation. *Journal of education and practice*. 2016;7(8):52-7.
7. Hutchinson AM, Johnston L. Beyond the BARRIERS Scale: commonly reported barriers to research use. *JONA: The Journal of Nursing Administration*. 2006 Apr 1;36(4):189-99.
8. Martin LM. Aspects of Swedish ophthalmic nurses' attitudes towards research. *Nordic Journal of Nursing Research*. 2017 Dec;37(4):209-16.
9. Funk SG, Champagne MT, Wiese RA, Tornquist EM. BARRIERS: the barriers to research utilization scale. *Applied Nursing Research*. 1991 Feb 1;4(1):39-45.
10. Buhaid N, Lau R, O'Connor M. A survey of nurses' perceived barriers to research utilization in Bahrain in comparison to other countries. *Middle East Journal of Nursing*. 2014 Apr;101(1150):1-7.

11. Thayumanavan M, Paul B. Nurses' Perceived Barriers to Research Utilization in a Selected Hospital at Bangalore. *Journal of Nursing Science & Practice*. 2019 Mar 4;4(1):14-8.
12. Nwozichi C, Ojewole F. Perceived research utilization barriers among nurses in a rural hospital in Nigeria. *Int J Adv Res Tech*. 2014 Jan;3:184-91.
13. Al Ghabeesh SH. Barriers and suggested facilitators to the implementation of best practice: an integrative review. *Open Journal of Nursing*. 2015 Jan 12;5(01):77.
14. Yoder LH, Kirkley D, McFall DC, Kirksey KM, Stalbaum AL, Sellers D. CE: Original Research Staff Nurses' Use of Research to Facilitate Evidence-Based Practice. *AJN The American Journal of Nursing*. 2014 Sep 1;114(9):26-37.
15. Guadarrama Ortega D. Barriers to the utilisation of research. Descriptive study performed on nurses at a hospital in the southwest of Madrid. *Enfermería Global*. 2016 Jul;43:275-88.
16. Rutledge DN, Skelton K. Clinical expert facilitators of evidence-based practice: a community hospital program. *Journal for Nurses in Professional Development*. 2011 Sep 1;27(5):231-5.
17. Chien WT, Bai Q, Wong WK, Wang H, Lu X. Nurses' perceived barriers to and facilitators of research utilization in mainland China: a cross-sectional survey. *The open nursing journal*. 2013;7:96.
18. Chen SH, Shao JH, Hsiao YC, Lee HC. Barriers to research utilization by registered nurses in Taiwan. *Research in nursing & health*. 2013 Apr;36(2):191-202.
19. Fashafsheh IH, Ayed A, Mohammed JA, Alotaibi YA. Nurse's Perception of Barriers to Research Utilization in Hospitals; Comparative Descriptive Study. *Open Journal of Nursing*. 2020 Jan 7;10(01):1.
20. Cidoncha-Moreno MÁ. Barriers to the implementation of research perceived by nurses from Osakidetza. *Enfermería Clínica (English Edition)*. 2017 Sep 1;27(5):286-93.
21. Mastarone GL, Wyse JJ, Wilbur ER, Morasco BJ, Saha S, Carlson KF. Barriers to Utilization of Prescription Drug Monitoring Programs Among Prescribing Physicians and Advanced Practice Registered Nurses at Veterans Health Administration Facilities in Oregon. *Pain Medicine*. 2020 Apr 1;21(4):695-703.
22. Al Hadid LA. Factors influencing the adoption of evidence-based principles in nursing education: A Jordanian perspective. *Journal of Nursing Education and Practice*. 2012 Apr 1;2(2):71.
23. Wang LP, Jiang XL, Wang L, Wang GR, Bai YJ. Barriers to and facilitators of research utilization: a survey of registered nurses in China. *PloS one*. 2013 Nov 29;8(11):e81908.
24. Oh EG. Research activities and perceptions of barriers to research utilization among critical care nurses in Korea. *Intensive and Critical Care Nursing*. 2008 Oct 1;24(5):314-22.
25. Mutisya AK, KagureKarani A, Kigundu C. Research utilization among nurses at a teaching hospital in Kenya. *Journal of caring sciences*. 2015 Jun;4(2):95.
26. Stavor DC, Zedreck-Gonzalez J, Hoffmann RL. Improving the use of evidence-based practice and research utilization through the identification of barriers to implementation in a critical access hospital. *JONA: The Journal of Nursing Administration*. 2017 Jan 1;47(1):56-61.

27. Heelan-Fancher L, Edmonds JK, Jones EJ. Decreasing Barriers to Research Utilization Among Labor and Delivery Nurses. *Nursing research*. 2019 Nov 1;68(6):E1-7.
28. Peachey AA, Baller S, Schubert C. Improvements in Research Orientation and Reductions in Barriers to Research Utilization among Undergraduate Students in Health Sciences. *Internet Journal of Allied Health Sciences and Practice*. 2018;16(2):7.
29. Chau JP, Lopez V, Thompson DR. A survey of Hong Kong nurses' perceptions of barriers to and facilitators of research utilization. *Research in Nursing & Health*. 2008 Dec;31(6):640-9.
30. McCleary L, Brown GT. Barriers to paediatric nurses' research utilization. *Journal of advanced nursing*. 2003 May;42(4):364-72.

Tables

Table (1):

Demographic and work characteristic of study participants

Variable	Category	N	%
Gender	Male	216	48.2
	Female	232	51.8
Nationality	Jordanian	389	86.8
	Non Jordanian	59	13.2
Marital status	Single	166	37.1
	Married	264	58.9
	Divorced	10	4.0
Living area	City	318	71.0
	Village	130	29.0
Type of institution	Government	217	48.4
	Private	231	51.6
Years of experience	1-5	181	40.4
	6-10	107	23.9
	>10	160	35.7
Income (JDs)	<400	100	22.3
	400-600	146	32.6
	601-800	101	22.5
	>800	101	22.5
Nature of Work	Practice	365	81.1
	Administration	45	10.0
	Education	38	8.5
Prior research experience	Yes	153	35.3
	No	290	64.7
Research publication	Yes	52	88.4
	No	396	11.6

Table (2):
Response of Barriers of Participation in Research

Scale Item	No extent to little extent N(%)	Medium extent to high extent N(%)	Mean Score
The nurse is isolated from knowledgeable colleagues with whom to discuss the research	150(38.1)	276(61.6)	2.72
The nurse is unaware of the research	200(44.7)	247(55.1)	2.65
The nurse sees little benefit for self	192(43.0)	242(54.0)	2.62
There is not a documented need to change practice	234(52.7)	210(46.9)	2.43
The nurse does not feel capable of evaluating the research	211(47.4)	234(52.2)	2.57
The nurse does not see the value of research for practice	208(46.9)	236(52.7)	2.58
The nurse feels the benefits of changing practice will be minimal	160(42.2)	257(57.4)	2.68
The nurse is unwilling to change/try new ideas	242(54.1)	203(45.3)	2.39
The nurse does not have time to read research	181(40.4)	262(58.5)	2.77
There is insufficient time on the job to implement new ideas	160(35.7)	283(63.2)	2.83
The facilities are inadequate for implementation	117(26.1)	324(72.3)	3.07
The nurse does not feel she/he has enough authority to change patient care procedures	111(24.8)	333(74.3)	3.13
The nurse feels results are not generalizable to own setting	162(36.2)	284(63.4)	2.83
Doctors will not cooperate with implementation	156(34.8)	289(64.5)	2.91
Other staff are not supportive of implementation	144(32.1)	303(67.3)	2.93
Administration will not allow implementation	166(37.1)	278(62.1)	2.81
The research has not been replicated	198(44.2)	247(55.1)	2.66
Research reports/articles are not published fast enough	160(35.7)	286(63.8)	2.82
The nurse is uncertain whether to believe the results of the research	200(44.6)	246(54.9)	2.62
The literature reports conflicting results	235(52.5)	210(46.9)	2.46
The research has methodological inadequacies	205(45.8)	242(54.0)	2.62

The conclusions drawn from the research are not justified	251(56.2)	195(43.5)	2.42
Research reports/articles are not readily available	175(39.1)	269(60.0)	2.76
The relevant literature is not compiled in one place	190(44.8)	256(57.1)	2.68
Implications for practice are not made clear	195(43.5)	149(55.5)	2.66
The statistical analyses are not understandable	189(42.2)	257(57.4)	2.67
The research is not reported clearly and readably	158 (35.7)	288(64.3)	2.84
The research is not relevant to the nurse's practice	261(58.3)	185(41.3)	2.34

Table (3):
Multiple Regression for Barriers of Participating in Research

Model		Unstandardized		Standardized Coefficients	t	Sig.
		Coefficients				
		B	Std. Error	Beta		
1	(Constant)	96.486	6.837		14.112	.000
	age	-.348	.132	-.181	-2.635	.009
	gender	.119	1.528	.004	.078	.938
	Nationality	-6.904	2.232	-.149	-3.094	.002
	Working	-2.672	1.550	-.085	-1.724	.085
	Working Experience	2.737	1.376	.152	1.989	.047
	Income	.945	.809	.064	1.168	.243
	Marriage	-1.535	1.661	-.054	-.924	.356
	Nature of Work	.793	1.290	.031	.615	.539
	Living Area	-.251	1.673	-.007	-.150	.881
	Working in research	-.269	1.691	-.008	-.159	.873
	Having Publication	-3.669	2.568	-.075	-1.429	.154

a. Dependent Variable: Sum of PUR

Figures

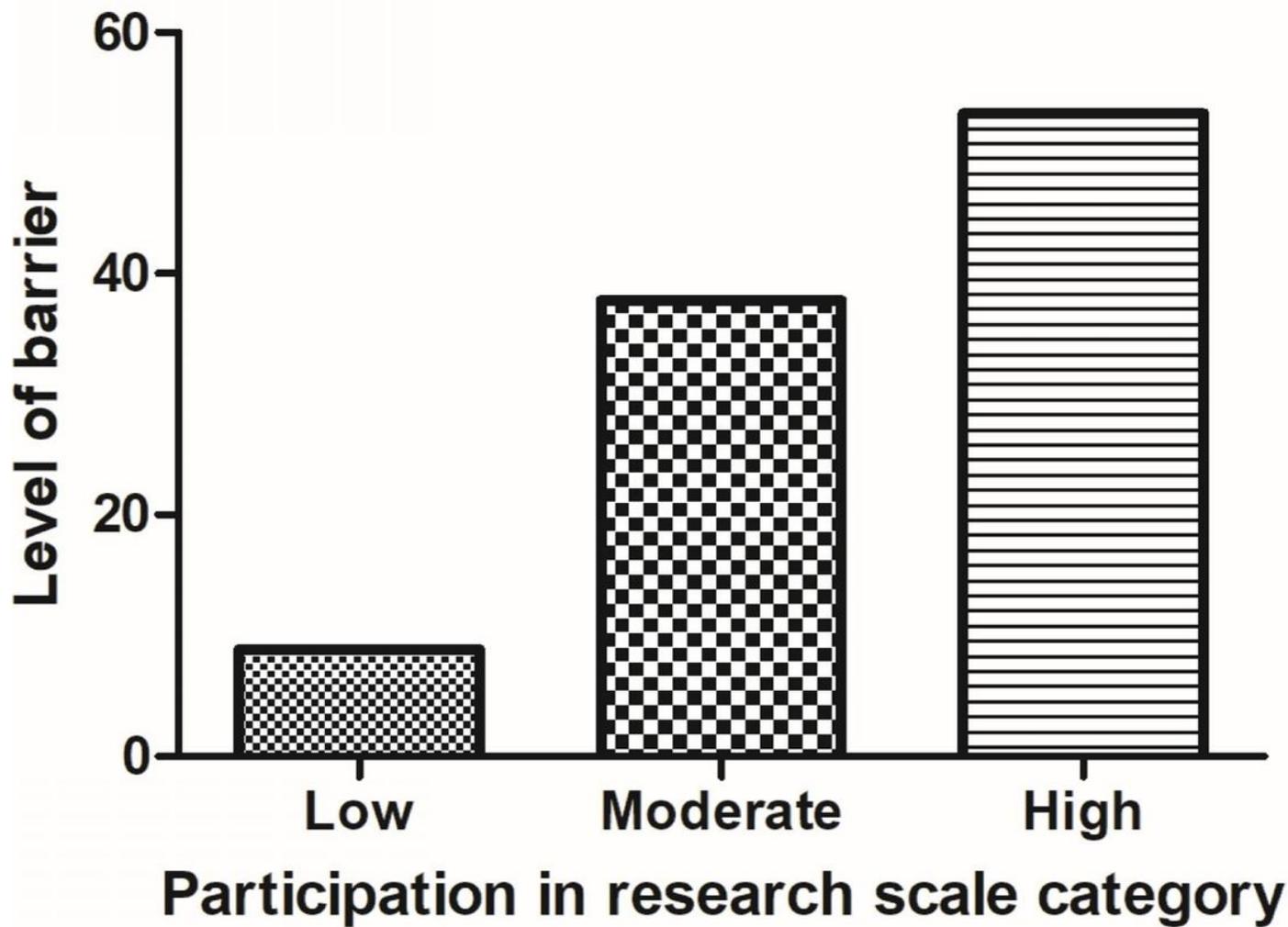


Figure 1

Perception of barriers to participation in research according to BRU scale. Values were expressed as percentages. The total number of sample was 448.

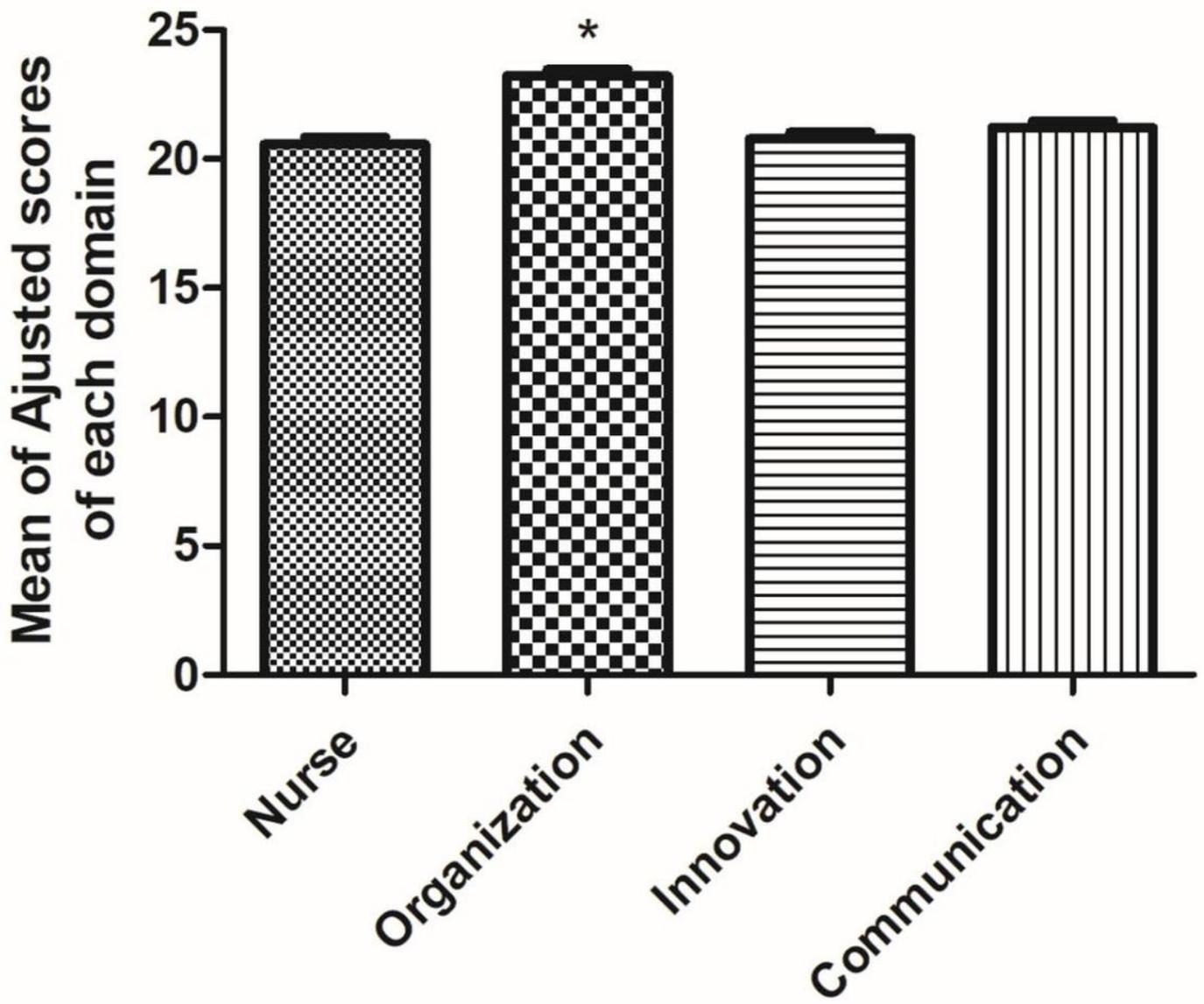


Figure 2

Perception of barriers according to the domains of BRU. Mean score of each domain was adjusted to account for number of items in each domain. Values were expressed as Mean \pm SEM. Comparison was performed using ANOVA. * indicates significant difference, $P < 0.01$).