

Barriers to Conducting and Publishing Scientific Research Among Nursing Faculty Members in Saudi Arabia

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Objective: Publication in highly indexed journals is a complicated process that requires research skills, including writing, conceptualizing, and communication skills, to appropriately verbalize the findings. The current study assessed the barriers faced by nursing faculty at Saudi universities in conducting scientific research and publishing in highly indexed journals.

Methods: This was a descriptive, cross-sectional study. Data were collected through convenience sampling by sending an online questionnaire to faculty members at Saudi universities. The questionnaire consisted of two parts: the first part for the demographic characteristics of staff and another part for the barriers associated with conducting scientific research and the publication process in highly indexed journals. The data was analyzed by SPSS using descriptive statistics as frequencies and percentages and inferential statistics using Chi Square test.

Results: The study included 152 participants, mainly female (70.4%) aged 30–40 years (73.7%). Most were non-Saudi (90.1%), attended government universities (82.9%), and specialized in Medical & Surgical Nursing (29.6%). Only 3.9% received publishing training, whereas 55.9% had been published in indexed journals. Barriers included difficulties following guidelines, lack of research-writing knowledge, language challenges, and financial constraints. Gender, age, university, qualifications, and training courses influenced these barriers.

Conclusion: The identified barriers included lack of training, language-related challenges, and work pressures. This study emphasizes the importance of providing support, resources, and training opportunities to overcome these barriers and enhance research productivity in the nursing field.

Keywords: scientific research, publishing, nursing faculty, Saudi universities

Introduction

The academic process mainly focuses on teaching, searching, and serving communities in addition to research as one of the essential tasks for academics.¹ Research on higher education is prioritized in developed countries for its development and innovation.^{2–4} Higher education institutions play a significant role in creating knowledge, discoveries, and development, and the only way to achieve this is to use a scientific approach.^{5–7} The number of publications and research productivity by faculty have declined substantially over the last two decades.⁸ Publications in nursing field focus on improving patient care, enhancing nursing education, participating in disease investigation, and approving scientific nursing interventions.^{9,10} The research was useless without publication in high-ranking journals.¹¹

Recently, there has been an unpredictable increase in the number of global publishers and publications globally.¹² The Scopus database contains more than twenty-five thousand peer-reviewed journals. In addition, the Web of Science Core Collection covers more than seven thousand journals.¹³ Nevertheless, the growing number of publishers and faculty members encountered obstacles when it came to publishing, including factors like academic standing and position, insufficient funding for research and publication, teaching responsibilities, and limited access to necessary equipment.^{14,15}

Publication in high-indexed journals is a complicated process that requires research skills, including writing, conceptualizing, and communication, to appropriately verbalize the findings.¹⁶ Another barrier is that writing an article for publication requires a high level of academic writing skills in English, although not all researchers are native English speakers.¹⁷ Many other barriers to publishing a scientific article have been reported in several previous studies, such as poor technical skills, lack of time for writing,¹⁸ the teaching load of academics, lack of resources, lack of guidelines, lack of interest, lack of motivation or rewards, and lack of training on research and publishing.^{19,20}

Nursing researchers have low research productivity due to similar barriers, which include lack of resources, scarcity of research material, technical difficulties, and lack of grants or research support.^{21,22} The higher educators are required to conduct scientific research and publishing as a part of their career development and its required for their promotion.^{23,24}

Research on health science in Saudi Arabia has been conducted in collaboration with other universities and has not covered all health disciplines.²⁵ Furthermore, investigating nursing research in the Arabian region, including Saudi Arabia, highlighted that 19% of the research was from Saudi Arabia out of 21 Arabian countries as a second country after Jordan, with 65% from King Saud University researchers; however, clinical research is still conducted by Western researchers and a need for further investigation.²⁶ Moreover, the academic staff faced challenges to be promoted to associate professor and professor levels due to the lack of high-index publications. Therefore, the current study aimed to assess the barriers encountered by nursing faculty at Saudi universities when conducting scientific research and publishing.

Materials and Methods

Study Design

A descriptive cross-sectional study was conducted among nursing faculty at governmental and private universities in Saudi Arabia.

Study Population

The study was conducted on faculty members at nursing college in Saudi Arabia. The governmental and private nursing schools were included. The questionnaire link was distributed to the participants through social media, and they were asked to participate in the study after confirming that they are faculty members at nursing college. The participants who are not confirming the affiliation to nursing schools were excluded from the study.

Sampling and Sample Size

A convenience sampling technique was used, with a self-administered questionnaire distributed to the participants. The sample size was calculated using the following equation.

$$n = \frac{P(1 - P) z^2}{d^2}$$

We assumed 10% of the study participants (p); thus, at a confidence level of 95% and an estimation error of 0.05 (d), while z value is constant at 1.96. The sample size was calculated as follows:

$$n = \frac{0.10(1 - 0.10)1.96^2}{0.05^2} = 138 \text{ participants}$$

After adding 10% to compensate any attrition or no responses, the sample size was 152 participants.

Data Collection

Data were collected by sending an online questionnaire to the nursing faculty members at Saudi universities. The questionnaire was adopted from one previous study by Hendy et. al, 2022,¹⁶ and reviewed by two faculty members. The questionnaire consisted of two parts: the first part for demographic characteristics of staff and another part for the barriers associated with conducting scientific research and the publication process which includes thirty-four items for barriers to

conducting research or publication. Scores were (strongly disagree = 0, disagree = 1, agree = 2, and strongly agree = 3) for each item. Higher scores indicate higher barriers, the score of 0 indicate that there is low or no barriers facing the faculty while 3 indicate that the barriers are high. The overall score was calculated as a high barrier of $\geq 60\%$ and a low barrier of $< 60\%$.

Pilot Study

The questionnaire was tested on ten faculty members at Al-Baha University to ensure its validity and reliability. The tested questionnaire was then revised by a statistician and reviewed by two faculty members to improve the accuracy and measurability of the tool. Cronbach's alpha for the pre-tested questionnaire was acceptable (above 0.7). This indicates an internal consistency of the scale items.

Data Analysis

Data were entered, coded, and analyzed by IBM SPSS (the Statistical Package for the Social Science) version 26. The researcher used this software due to its well-established reputation and suitability for the research objectives. A descriptive analysis of frequencies and percentages was applied for nominal and ordinal variables, whereas the mean, median, and standard deviation or range were applied for numerical data. The association between demographic characteristics and domains of barriers was investigated using Chi Square test with a p-value less than 0.05, which was considered statistically significant.

Ethics Approval and Consent to Participate

Ethical approval was obtained from the Ethics Committee of Al-Baha University (approval number 44117035 on 28/02/2022). Participants were assured that their names and information were kept confidential and that they had the right to withdraw at any time from the study. The participants provided informed consent to participate in the study and confirmed that they are faculty members at Saudi Universities.

Results

Table 1 provides an overview of the socio-demographic characteristics of the 152 participants. Many participants were female (70.4%) and within the age range of 30–40 years (73.7%). Most of the participants were non-Saudi (90.1%) and had attended government universities (82.9%). In terms of nursing specialties, the highest representation was in Medical & Surgical Nursing (29.6%), followed by Maternity Nursing (16.4%) and Community Health Nursing (13.8%). Most participants were married (73.7%) and held assistant professors (86.8%). Only a small proportion had received training courses on publishing (3.9%) while higher proportion have published articles in journals indexed in the SCOPUS/Web of Science databases (55.9%). Overall, 31.6% of participants had previously published individual articles.

Table 2 illustrates the barriers affecting scientific research and publishing, as reported by 152 participants. The table presents the frequency of responses across four categories: “strongly disagree”, “disagree”, “agree”, and “strongly agree”. The participants identified that they have difficulties in APA guidelines, lack of knowledge in scientific research writing, challenges in rephrasing paragraphs and expressing ideas in English, difficulty in following journal instructions, lack of familiarity with the correct method of scientific writing, limited understanding of referencing and citations, reluctance to publish without external pressure, perception of scientific publishing being essential for career advancement, lack of role models, insufficient training in scientific writing and publishing, financial limitations, time constraints for research, unavailability of updated references, challenges in article submission and journal selection, uncertainty about journal indexing, communication issues with journals, cost implications of publications, lack of understanding of publishing procedures and reviewer feedback, and fear of rejection.

Figure 1 shows the barriers affecting the process of conducting scientific research and publishing. The data is presented in percentages across four categories: “Strongly disagree”, “Disagree”, “Agree”, and “Strongly agree”. The proportion of participants who experienced these barriers was as follows: 19.68% strongly disagree, 20.59% disagree, 26.01% agree, and 33.73% strongly agree. This figure provides an overview of the overall distribution of barriers reported by the participants and demonstrates the varying degrees to which these barriers are perceived.

Table I Participants Socio-Demographic Characteristics (N = 152)

Variables		Frequency	Percent
Gender	Male	45	29.6
	Female	107	70.4
Age	30–<40 years	112	73.7
	40–50 years	40	26.3
Nationality	Saudi	15	9.9
	Non-Saudi	137	90.1
Type of university	Government	126	82.9
	Private	26	17.1
Specialty	Medical & Surgical Nursing	45	29.6
	Maternity Nursing	25	16.4
	Community Health Nursing	21	13.8
	Pediatric Nursing	20	13.2
	Nursing Research	14	9.2
	Nursing Administration	17	11.2
Marital status	Single	37	24.3
	Married	112	73.7
	Divorced	2	1.3
	Widowed	1	0.7
Qualification	Professor	2	1.3
	Associate Professor	12	7.9
	Assistant Professor	132	86.8
	Lecturer	6	3.9
Training courses about publishing	Yes	6	3.9
	No	146	96.1
Trying to publish at journal indexed at SCOPUS/Web of science database	Yes	133	87.5
	No	19	12.5
Publish article at journal indexed at SCOPUS/Web of science database	Yes	85	55.9
	No	67	44.1
Previously published an individual article	Yes	48	31.6
	No	104	68.4

Table 2 Barriers Affecting Conducting Scientific Research and Publishing (N = 152)

Item	Strongly Disagree	Disagree	Agree	Strongly Agree
1. Difficult to follow APA guidelines	13.82	9.21	37.50	39.47
2. I do not know how write scientific research	22.37	27.63	16.45	33.55
3. I find it difficult to rephrase paragraphs before quoting them in the research	36.84	28.29	17.11	17.76
4. I find it difficult to express my ideas in the right English language	18.42	15.79	23.03	42.76
5. Difficult to follow the journal instructions	29.61	21.05	42.76	6.58
6. A difference in the method of scientific writing that we learned and the correct method	47.37	22.37	13.82	16.45
7. I do not know how write references or citations	56.58	17.76	15.79	9.87
8. Just publishing when I was forced to do	18.42	40.79	18.42	22.37
9. Scientific publishing is always linked to career advancements	1.32	5.92	42.76	50.00
10. Unavailability of a role model	2.63	5.26	30.26	61.84
11. Recognized the importance of publishing research	10.53	17.11	29.61	42.76
12. Limited training courses on scientific writing	0.66	2.63	42.76	53.95
13. Limited training courses on publishing	1.32	3.29	53.29	42.11
14. Training courses conducted at appropriate times	31.58	64.47	2.63	1.32
15. Insufficient financial rewards for scientific publication	35.53	16.45	18.42	29.61
16. Insufficient time to conduct scientific research	2.63	2.63	50.00	44.74
17. Unavailable updated scientific references in the library	44.08	28.29	14.47	13.16
18. Difficult to article submission online to journal	8.55	20.39	30.26	40.79
19. I do not know how to select the appropriate journal	7.89	9.87	15.13	67.11
20. Difficult to detect that journal indexed to SCOPUS/Web of science database	12.50	15.13	32.89	39.47
21. Difficult to assure that journal indexed at SCOPUS/Web of science database	11.18	12.50	40.13	36.18
22. Contact with journal via unofficial email	29.61	23.68	26.97	19.74
23. Each journal has a specific guideline	1.97	7.89	40.13	50.00
24. Highly cost of publications	0.66	1.97	15.79	81.58
25. I do not know the steps of scientific publishing	37.50	29.61	15.79	17.11
26. Difficulty understanding the mechanism of reviewing research in the journal	27.63	25.00	9.87	37.50
27. Ignorance of the expected time of the journal's response	11.84	17.11	30.26	40.79
28. Undefined acceptance and rejection rates of the journal	21.71	37.50	18.42	22.37
29. I do not understand the comments of the reviewers of the research	18.42	44.08	15.13	22.37
30. The time limit for responding to reviewers is long	6.58	20.39	27.63	45.39
31. I do not know how to respond to reviewers' comments	11.18	20.39	30.26	38.16
32. Avoid publishing for fear of repeated rejection	15.79	46.71	22.37	15.13

(Continued)

Table 2 (Continued).

Item	Strongly Disagree	Disagree	Agree	Strongly Agree
33. Stopped publishing science after the first rejection	21.05	16.45	28.95	33.55
34. Rejection is considered a stigma on the researcher	51.32	22.37	15.13	11.18
Average	19.68	20.59	26.01	33.73

Abbreviation: APA, American Psychological Association.

Figure 2 shows the distribution of participants in the barrier domains based on a sample size of 152 participants. The data are represented as percentages, with 40% of the participants categorized as having low barriers and 60% categorized as experiencing high barriers. This figure provides a visual representation of the proportion of participants in each domain, indicating the prevalence of different barriers encountered by participants in conducting scientific research and publishing.

Table 3 presents the inferential statistics for the association between participants' characteristics and the domains of barriers in the study, involving 152 participants. The table displays the percentage of participants with low and high barriers within each variable as well as the corresponding p-values. Significant associations were found between gender and barriers, with a higher proportion of females (64.49%) reporting higher barriers than males (48.89%). Age also showed a significant association, with participants in the 40–50 years age group (75.00%) experiencing higher barriers than those in the 30–40 years age group (54.46%). The type of university demonstrated a highly significant association, as participants from private universities (30.77%) reported fewer barriers than those from government universities (65.87%). Qualification and training courses on publishing also had a highly significant association with barriers, with participants holding professor qualifications (0.00%) and those who had undergone training courses (16.67%) reporting fewer barriers. The results suggest that gender, age, type of university, qualification, and training courses on publishing significantly influence the barriers experienced by participants in conducting scientific research and publishing.

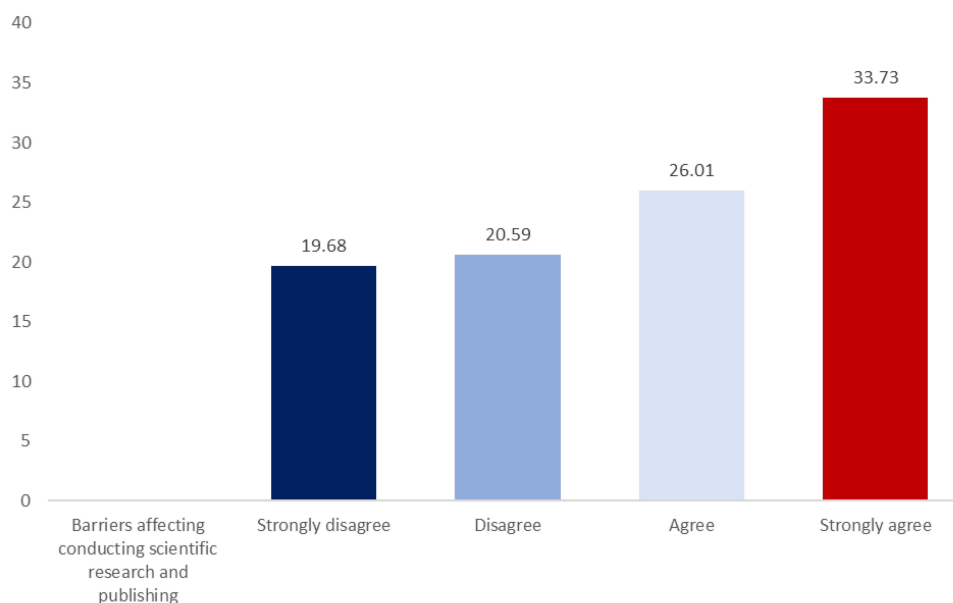


Figure 1 The total participants barriers affecting conducting scientific research and publishing (n=152).

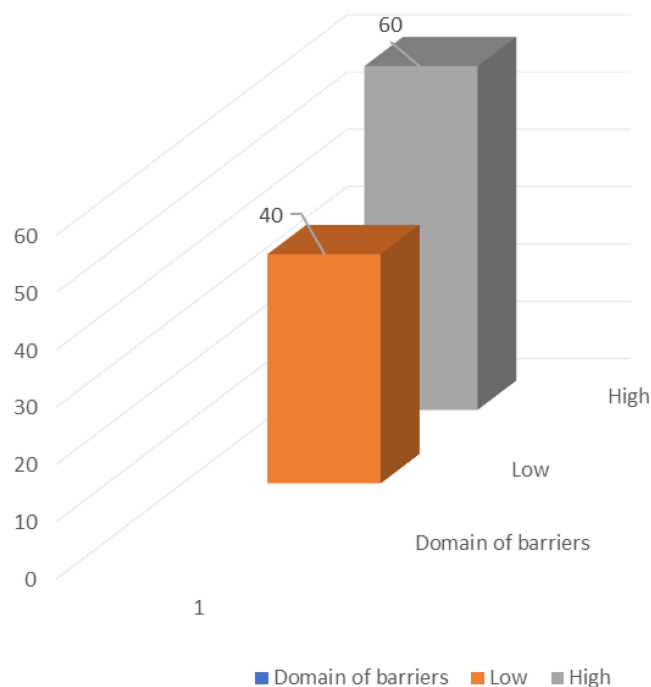


Figure 2 Distribution of participants in the domains of barriers (n=152).

Discussion

The results revealed that more than half of the participants experienced high barriers to conducting scientific research and publishing. Among the identified barriers, difficulties in following APA guidelines, lack of knowledge of scientific research writing, challenges in rephrasing paragraphs and expressing ideas in English, and difficulty following journal instructions were prominent. Other significant barriers include a limited understanding of referencing and citations, reluctance to publish without external pressure, and the perception that scientific publishing is essential for career advancement.

The findings of this study are consistent with a previous study conducted in Kenya by Mwangangi Matheka et al. A Kenyan study also identified challenges and struggles in conducting scientific research and publishing among faculty

Table 3 The Cross-Tab Association Between Participants Characteristics and Domains of Barriers (n=152)

Variables		Domains of Barriers		P-value
		Low Barriers (%)	High Barriers (%)	
Gender	Male	51.11	48.89	<0.05*
	Female	35.51	64.49	
Age	30–40 years	45.54	54.46	<0.05*
	40–50 years	25.00	75.00	
Nationality	Saudi	46.67	53.33	>0.05
	Non-Saudi	39.42	60.58	
Type of university	Government	34.13	65.87	<0.001**
	Private	69.23	30.77	

(Continued)

Table 3 (Continued).

Variables		Domains of Barriers		P-value
		Low Barriers (%)	High Barriers (%)	
Specialty	Medical & Surgical Nursing	33.33	66.67	>0.05
	Maternity Nursing	48.00	52.00	
	Community Health Nursing	33.33	66.67	
	Pediatric Nursing	40.00	60.00	
	Nursing Research	50.00	50.00	
	Nursing Administration	52.94	47.06	
	Psychiatric and Mental Health Nursing	30.00	70.00	
Marital status	Single	32.43	67.57	>0.05
	Married	33.93	66.07	
	Divorced	50.00	50.00	
	Widowed	0.00	100.00	
Qualification	Professor	100.00	0.00	<0.001**
	Associate Professor	83.33	16.67	
	Assistant Professor	36.36	63.64	
	Lecturer	16.67	83.33	
Training courses about publishing	Yes	83.33	16.67	<0.001**
	No	38.36	61.64	
Trying to publish at journal indexed at SCOPUS/Web of science database	Yes	40.60	59.40	>0.05
	No	36.84	63.16	
Publish article at journal indexed at SCOPUS/Web of science database	Yes	34.12	65.88	>0.05
	No	47.76	52.24	
Previously published an individual article	Yes	31.25	68.75	>0.05
	No	44.23	55.77	

Notes: *Significant, **Highly significant.

members. Similar to our findings, a Kenyan study highlighted barriers, such as difficulties in reaching acceptance and rejection rates of journals, limited training courses on scientific writing and publishing, and a difference in the method of scientific writing.²⁷ Similar findings were also reported in a recent study conducted in Egypt on 358 faculty members from different specialties and universities, which showed that a higher percentage of members faced barriers related to conducting scientific research and publishing.¹⁶ These similarities indicate that the barriers faced by nursing faculty members in Saudi Arabia and Kenya share commonalities and may be prevalent across different contexts; faculty members from different specialties face the same difficulties.

Furthermore, studies conducted in other regions such as the Middle East and Africa have reported similar barriers. Lages et al identified language barriers and availability of a network of researchers as common challenges.²⁸ Pittman et al

found that time, lack of encouragement or support within the organization, and manuscript formatting were major barriers identified by applied epidemiologists.²⁹ These findings suggest that barriers to conducting scientific research and publishing are not limited to a specific region but are widespread across various contexts.

In terms of the association between participant characteristics and barriers, our study found significant associations between gender, age, university type, qualifications, and training courses on publishing. Females and participants in the 40–50 years age group reported higher barriers. Additionally, participants from government universities and those with lower qualifications experienced higher barriers than their counterparts did. These findings align with previous research indicating the influence of demographic and educational factors on barriers to scientific research and publication. Similarly, a study conducted in Egypt by Hendy et al indicated that barriers to publishing are significantly correlated with age, faculty type, qualification, and previous participant training.¹⁶

Previous studies have suggested various strategies to overcome these barriers. For instance, the establishment of open-access policies has been recommended to enhance access to research outputs.³⁰ Increased training in scientific writing, manuscript formatting, and journal selection has also been suggested as a means of improving publishing skills.²⁹ Additionally, providing support and guidance in designing and running studies as well as addressing research-based skills and funding limitations can help overcome barriers to conducting research.³¹

However, this study provided a novel finding about the barriers faced by nursing faculty in Saudi universities, it has several limitations as it was conducted on small sample size which could be not representative for study population. Another limitation is using the descriptive quantitative approach however such topic could be fully investigated by qualitative methods.

Conclusion

This study revealed the barriers faced by nursing faculty members when conducting scientific research and publishing in Saudi Arabia. The identified barriers encompassed various aspects, including difficulties in following guidelines, lack of knowledge and training, language-related challenges, and career-related pressures. This study emphasized the importance of providing support, resources, and training opportunities to overcome these barriers and enhance research productivity among nursing faculty members. Future research and interventions should focus on addressing these barriers to promote scientific research and publication in the nursing field.

Data Sharing Statement

Data are available upon request from the corresponding author.

Ethics Approval and Consent to Participate

Ethical approval was obtained from the Ethics Committee of Al-Baha University (approval number 44117035 on 28/02/2023). Before participating in the online survey, all participants provided informed consent by clicking on the agreement, and they were informed of their right to decline participation or withdraw from the study at any time. Confidentiality of the participants' information was strictly maintained.

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The author declares no competing interests in this work.

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