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Research Article

KNOWLEDGE, ATTITUDE, AND PERCEPTION OF NURSES AND PHYSICIANS REGARDING PHARMACEUTICAL-INITIATED CLINICAL RESEARCH IN UAE, QATAR, OMAN, BAHRAIN, AND JORDAN

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ABSTRACT

Objective: The objective of the study was to understand the reasons for the limited number of pharmaceutical-initiated clinical studies in the Middle East region, by assessing the knowledge, attitudes, and perceptions related to pharmaceutical-initiated clinical trials among health-care professionals (HCPs) in UAE, Qatar, Oman, Bahrain, and Jordan.

Methods: The study was conducted using an online questionnaire-based survey. The HCP respondents were from UAE, Qatar, Oman, Bahrain, and Jordan and had a good understanding of the English language. Descriptive statistical analysis was used to analyze the responses.

Results: The HCPs were not inclined toward participation in clinical trials and research activities. The reasons for their limited participation included a lack of time, resources, and limited awareness about their legal protection associated with such studies, and the lack of necessary training and education related to clinical research.

Conclusions: Although there is a willingness to participate in clinical trials conducted by pharmaceutical companies, HCPs face various ethical, administrative, and academic barriers. Addressing these issues would help increase the number of trials conducted in the Middle East region.

Keywords: Pharmaceutical-initiated clinical research, Health care professionals, Middle East.

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INTRODUCTION

The Middle East region has a population of 381 million [1]. However, it sponsors only under 1% of clinical trials globally [2]. While the pharmaceutical industry predicts that about 4% of its sales will come from the Middle East region in the future, currently only 0.4% of trial participants are from the region [3]. This study aimed to understand the probable reasons for the reduced number of pharmaceutical-initiated clinical trials and research initiatives. It assessed the knowledge, attitudes, and perceptions of nurses and physicians toward pharmaceutical-initiated trials in UAE, Qatar, Oman, Bahrain, and Jordan.

METHODS

Study design

The study was a quantitative, descriptive, cross-sectional, questionnaire-based survey involving HCPs. The survey questions were designed to gather insights related to the research question, i.e., "what are the perceptions, attitudes, and knowledge of nurses and physicians toward clinical research sponsored by pharmaceutical companies?" The questionnaire for the online survey was shared with the participants on their contact/email addresses that were available in the public domain. The survey was sent through a software called Survey Monkey. Before conducting the survey, a pilot study was carried out to analyze the acceptability of the questionnaire. As part of the pilot study, the questionnaire was first shared with two physicians and two nurses, who met the inclusion criteria. Questions that were unclear were reframed, and necessary feedback was addressed to ensure that the survey questions were in line with the objectives and goals of the questionnaire and well understood by the respondents.

Subject participation

The participants of the survey included nurses and physicians of varied specialties from UAE, Qatar, Oman, Bahrain, and Jordan, regardless of their experience in previously conducted clinical research programs.

Inclusion criteria

The following criteria were included in the study:

- Adults 18 years or older
- Proficiency in the English language
- Nurses and physicians from different specialties working in medical institutions in UAE, Qatar, Oman, Bahrain, and Jordan
- Individuals were complying with the above criteria and willing to participate in the survey

Exclusion criteria

The following criteria were excluded from the study:

- Individuals not proficient in the English language
- Individuals that were not medical staff working in medical institutions of selected countries
- Individuals not willing to participate in the survey

The list of HCPs was shortlisted by retrieving their details from the public domain; this was achieved by conducting a secondary research of hospital websites in UAE, Qatar, Oman, Bahrain, and Jordan. Individuals with accessible email addresses were contacted. Consent forms were sent to confirm their acceptance to participate in the survey. In addition to the consent form, an introductory email briefly highlighting the objectives of the survey was shared with them. The survey consent was received through email and participants were finalized.

Measures/tools

The HCPs were sent screening questions to assess their eligibility for the survey. The finalized respondents were then sent a link directing them to the final survey questionnaire (Fig. 1).

The main questionnaire was divided into three sections (Fig. 1). Section A captured the demographics of the participants, i.e., age, gender, profession, specialty, nationality, experience in previous research, etc. Section B was designed to evaluate the first objective of the study,

A. Demographics:

1. What is your gender?
a) Male
b) Female
c) Prefer not to say

2. What is your age? In years
a) 20-30 years
b) 31- 40 years
c) 41-50 years
d) 51-60 years
e) Above 61 years

3. What is your profession?
a) Physician
b) Nurse

4. What is the type of institution you are currently working at?
a) Private
b) Government

5. What country are you currently working in?
a) Qatar
b) UAE
c) Oman
d) Bahrain
e) Jordan

6. What is your specialty? If a nurse, specialty of the clinic you are working at (----------).

7. What are your years of experience in clinical practice? in years.
a) 0-1 years
b) Greater than 1 but less than or equal to5 years
c) Greater than 5 but less than or equal to10 years
d) Greater than10 but less than or equal to15 years
e) Greater than 15 years

8. Have you ever been part of a research study as a research team member?
a) Yes
b) No

9. If yes to question 8, how recent was that
a) Not applicable
b) Less than 5 years ago
c) More than 5 but less than 10 years ago
d) More than 10 years ago

10. If yes to question 8, What was/were your role(s) in this research? You can choose more than one answer

a) Not applicable
b) PI (principal investigator)
c) Co-PI(co- principal investigator)
d) CRA/ (clinical research associate).
e) Research Nurse Coordinator
f) Research subject
g) Other, please specify

11. Were you ever part of a research study team for research sponsored by pharma industry?
a) Yes
b) No

12. If yes, how many pharma sponsored research studies have you been a part of?
a) Less than 5
b) at least 5 but less than10
c) at least 10 but less than20
d) 20 or more

13. If you were part of a research team of a clinical trial sponsored by pharma industry, when was that?
a) Up to 1 year ago
b) Greater than 1 but less than or equal to 5 years ago
c) Greater than 5 years ago

B. Knowledge, attitude and perception about clinical trials sponsored by pharma industry

14. What types of trainings have you received in clinical research?
a) None
b) ICH GCP (International Conference on Harmonisation/ Good Clinical Practice)
c) Other, please specify

15. If you have had previous training in clinical research, how recent was that
a) Not applicable
b) Less than 5 years ago
c) More than 5 but less than 10 years ago
c) More than 10 years ago

16. If you have had previous training in clinical research, when was this?
a) Not applicable
b) During undergraduate study
c) During postgraduate study
d) While working
e) Other (please specify)

17. If you have had previous training in clinical research, was your training?
a) Not applicable
b) Self-sponsored
c) Pharma Company sponsored
d) University/ institution sponsored

18. If you have received training in clinical research please specify the training (----------).

19. As per your institutional guidelines, do you require any specific training to carry out clinical research?
a) Yes
b) No
c) Don't know

20. How would you rate your knowledge about different research phases?
a) I know the different phases of research: phase I, phase II, III, IV & post marketing surveillance research.
b) I do not appreciate the difference between different phases of research mentioned above
c) My knowledge is limited to few types of research phases which are ..... (Please specify).

21. How would you rate your willingness and interest in participating in interventional medical research (involving medication) sponsored by pharma industry?
a) I am willing to take part in such research as a researcher
b) I am prefer in taking part in non-pharma sponsored research
c) I am not willing to take part in any type of research

More details: ----------

22. Have you experienced concerns from patients about participation in pharma sponsored research that requires subject recruitments?
a) Yes, there have been concerns from my patients to take part in research
b) No, there have been no concerns expressed to me from patients regarding taking part in research

More details: ----------

23. Do you think participation in pharma sponsored research might lead to risks that could jeopardize your professional status?
a) Yes
b) No
c) I don't know

24. If you answered 'yes' to question 20, what are these risks?
a) Not applicable.
b) Adverse events
c) Patients' confidentiality disclosure
d) Others; please specify (----------)

C. Challenges and opportunities in terms of pharma sponsored clinical research

25. Is it permissible to conduct pharma sponsored research in your institution?
a) Yes, but only if non interventional (not involving medications)
b) No
c) Yes, both interventional and non-interventional
d) Don't know

26. Why do you believe Pharma sponsored research is needed in your country?
a) To support the institution research dept. financially
b) To have Guidance on how to conduct the research as they have knowledgeable research team
c) To have local Data generation
d) Others; please specify (----------)

27. In your institution, who decides which physicians / nurses take part in research?
a) Head of department
b) Medical director/ head of institution
c) Sponsored Pharma Company
d) Others; please specify (----------)
e) I don't know

28. Does the current process at your institution encourage pharma sponsored research?
a) Yes
b) No
c) Don't know

29. What could be your reasons for not participating in clinical trials as a researcher?

29.1. Fear from risk of participation
0 Strongly disagree 0Disagree0Neither agree or disagree / uncertain 0 Agree 0Strongly agree
29.2. Fear of the unknown
0 Strongly disagree 0Disagree0Neither agree or disagree / uncertain 0 Agree 0Strongly agree
29.3. Lack of Awareness of legal protection of participants in clinical trials
0 Strongly disagree 0Disagree0Neither agree or disagree / uncertain 0 Agree 0Strongly agree
29.4. Lack of needed trainings or experience
0 Strongly disagree 0Disagree0Neither agree or disagree / uncertain 0 Agree 0Strongly agree
29.5. Lack of time
0 Strongly disagree 0Disagree0Neither agree or disagree / uncertain 0 Agree 0Strongly agree
29.6. Lack of resources
0 Strongly disagree 0Disagree0Neither agree or disagree / uncertain 0 Agree 0Strongly agree
29.7. All of the above
29.8. Other reasons; please specify (----------).

Fig. 1: Survey questionnaire. Section A assesses the demographics, Section B assesses the knowledge, attitude, and perception of health-care professionals, and Section C assesses the challenges and opportunities faced in a few Middle East regions

i.e., to assess the knowledge, attitudes, and perceptions of nurses and physicians related to clinical trials sponsored by the pharmaceutical industry in UAE, Qatar, Oman, Bahrain, and Jordan. Section C was designed to assess the second objective of the study, i.e., to identify the challenges and opportunities related to pharmaceutical-initiated clinical research in the medical communities in UAE, Qatar, Oman, Bahrain, and Jordan.

Statistical analysis

Once the survey results were obtained, a descriptive analysis of the data was performed. For each question, a response percentage was determined to better understand the trend of responses.

Confidentiality and ethical considerations

The survey was conducted after receiving approval from the Ethics Committee of the University of Liverpool. The survey responses were not linked to email addresses to maintain confidentiality of the participants and to avoid bias. Participant recruitment was coordinated in a non-coercive manner. Participant names or contact information was neither requested nor published in the results obtained from the survey. The methodology of the study is summarized in Fig. 2.

RESULTS

Two hundred HCPs were contacted; 75 participated in the survey, while 125 refused to participate. There were 52 physicians and 22 nurses in all. One of the participants did not wish to reveal their profession.

Demographics

The percentage of responses was calculated based on the total number of participants who attempted the question. The detailed responses for Section A of the questionnaire are provided in Table 1.

Knowledge, attitudes, and perceptions of nurses and physicians toward pharmaceutical-initiated clinical research

The percentage of responses was calculated based on the total number of participants who attempted the question. The detailed responses for Section B of the questionnaire are given in Table 2.

Challenges and opportunities faced by the medical community toward pharmaceutical-initiated clinical research

About 21.6% participants stated that it was permissible to conduct pharmaceutical-initiated research in their institution. The detailed responses for Section C of the questionnaire are given in Table 3.

DISCUSSION

The current study assessed the knowledge, attitude, and perceptions of nurses and physicians regarding pharmaceutical-initiated clinical research in UAE, Qatar, Oman, Bahrain, and Jordan. The study revealed that the majority of the HCPs worked for private clinics and had more than 15 years of clinical experience. About 66.66% HCPs stated that they had never been a part of pharmaceutical-initiated clinical studies. About 68.4% HCPs had not undergone any training related to clinical research. Some participants had no knowledge about the different phases of clinical trials. Although the extent of

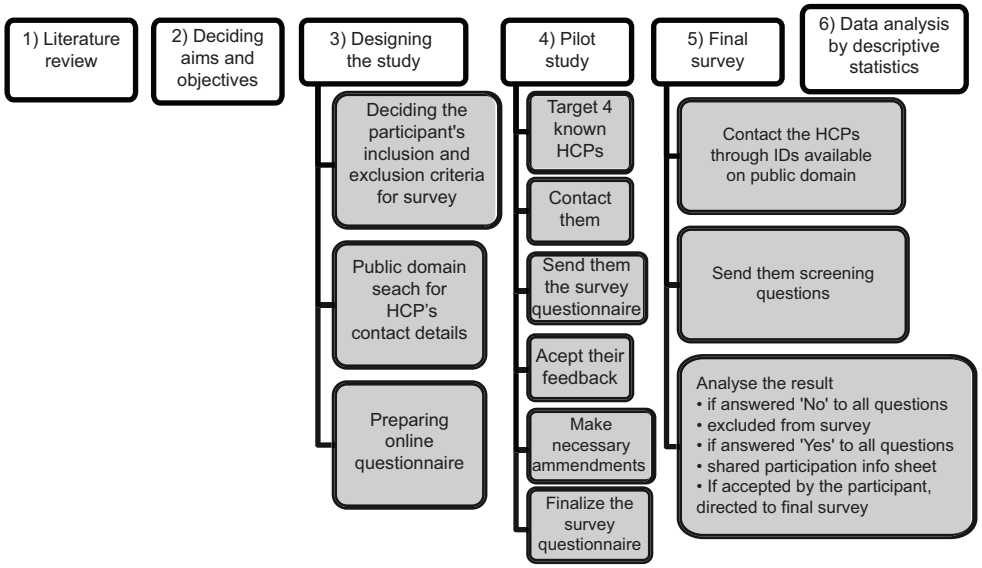

Fig. 2: Summary of research methodology: The six main steps of the study methodology included literature review, deciding aims and objectives, designing the study, conducting a pilot study, sending the final survey, final data collection, and statistical analysis

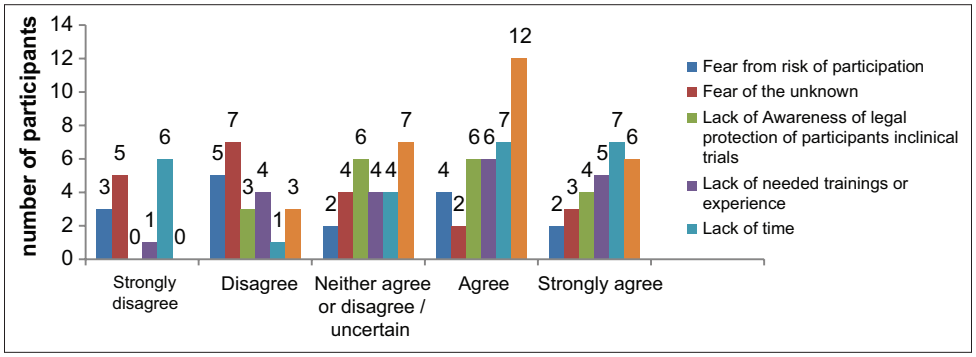

Fig. 3: Reasons for not participating in clinical trials. The reasons for the researchers to not participate in clinical trials are represented by the degree of participant's opinion, i.e., agree, strongly agree, disagree, strongly disagree, neither agree nor disagree

Table 1: Response summary for Section A

Question number	Question	Number of participants who attempted the question (n=75)	Response rate for each answer (%)
1	What is your gender?	75	Males: 44.0 Females: 54.7 Prefer not to say: 1.3
2	What is your age?	75	20–30: 24.0 31–40: 30.7 41–50: 25.3 51–60: 13.3 Above 60: 6.7
3	What is your profession?	74	Physicians: 70.3 Nurse: 29.7
4	What is the type of institution you are currently working at?	75	Private: 52 Government: 38.7 Other (please specify): 10.7
5	What country are you currently working in?	75	Qatar: 9.3 UAE: 62.7 Oman: 1.3 Bahrain: 2.7 Jordan: 24.0
6	What is your specialty? If a nurse, what is the specialty of the clinic you are working at?	68 (7 participants skipped this question)	Nurses: 27.9 Physicians: 72 (only 18 nurses responded to the question related to specialty. The 18 nurses were from varied specialties such as operation room department, rheumatology, gastroenterology, specialist clinic, obstetrics and gynecology, treatment room, school, vascular, dermatology, orthopedic department, and infusion therapy department)
7	What are your years of experience in clinical practice?	75	0–1 year: 2.7>1 but ≤5 years: 18.7>5 but ≤10 years: 28.0>0 but ≤15 years: 14.7>15 years: 36.0
8	Have you ever been part of a research study as a research team member?	75	Yes: 49.3 No: 50.7
9	If yes to Q8, how recent was that?	55	Not applicable: 32.7<5 years ago: 49.1>5 but <10 years ago: 9.1>10 years ago: 9.1 (for Q8, 38 participants selected the option "no." For Q9, 18 participants selected "not applicable" and 20 participants skipped the question. As per Q8, 37 participants chose "yes." Similar responses were captured in question 9)
10	If yes to Q8, what was/were your role (s) in this research? You can choose more than one answer	56	Not applicable: 35.7 PI: 26.8 Co-PI: 25.0 CRA: 10.7 Research Nurse Coordinator: 5.4 Research subject: 7.1 Other (please specify): 1.8
11	Were you ever part of a research study team for research sponsored by pharmaceutical industry?	72	Yes: 33.33 No: 66.66
12	If yes to Q11, how many pharmaceutical-initiated research studies have you been a part of?	23	<5: 78.3 At least 5 but <10: 13.0 At least 10 but <20: 8.7 20 or more: 0.0
13	If you were part of a research team of a clinical trial sponsored by pharmaceutical industry, when was that?	24	Up to 1 year ago: 41.7>1 but ≤5 years ago: 33.3>5 years ago: 25.0

PI: Principal investigator, CRA: Clinical research associate

HCP participation in clinical research was less, 48.2% HCPs expressed their willingness to participate in such research. About 45% HCPs were not aware if it was permissible to conduct pharmaceutical-initiated research in their institutes. The most common reasons for not participating in clinical research were lack of time, resources, trainings, and experience in the research field. Furthermore, there was a lack of awareness related to the legal protection of participants in clinical trials.

Similar results have been reported in the literature. In a study by Mitwalli *et al.*, 97.9% physicians agreed that research is important and it improves health care. According to 86.9% physicians, research builds academic career in the future. The barriers in conducting research included lack of research training (93.2%), lack of time (89.5%), work-related stress (83.2%), and lack of supervisors (73.3%). The study revealed that only 30.4% physicians are involved in research [4].

Table 2: Response summary for Section B

Question number	Question	Number of participants who attempted the question (n=75)	Response rate for each answer (%)
14	What types of training have you received in clinical research?	57	None: 68.4 ICH GCP: 15.8 Other: 15.8
15	If you have had previous training in clinical research, how recent was that?	47	Not applicable: 57.4<5 years ago: 27.7>5 but <10 years ago: 10.6>10 years ago: 4.3
16	If you have had previous training in clinical research, when was this?	50	Not applicable: 52.0 During undergraduate study: 6.0 During postgraduate study: 18.0 While working: 22.0 Other (please specify): 2.0
17	If you have had previous training in clinical research, who sponsored your training?	48	Not applicable: 52.1 Self-sponsored: 14.6 Pharma company sponsored: 6.3 University/institution sponsored: 27.1
18	If you have received training in clinical research, please specify the training	18	This question is an open ended question needing more than one-word answers for further confirmation of Q14. As previously mentioned, 18 of 57 participants had received training in clinical research. The training type included GCP training, epidemiology and biostatistics, training on ways to conduct research, collecting data and interpreting them, basic knowledge as per research phases and how to approach each one, workshop, data collecting, data analysis, and writing dissertation and paper research, SPSS, training in Royal College of Anaesthesia, training through research methodology course, CITP Online modules, HIPS GCP
19	As per your institutional guidelines, do you require any specific training to carry out clinical research?	56	Yes: 39.3 No: 19.6 Do not know: 41.1
20	How would you rate your knowledge about different research phases?	56	I know the different phases of research: phase I, phase II, III, IV and postmarketing surveillance research: 39.3 I do not appreciate the difference between different phases of research mentioned above: 17.9 Do not know: 37.5 My knowledge is limited to a few types of research phases which are (please specify): 5.4
21	How would you rate your willingness and interest in participating in interventional medical research (involving medication) sponsored by pharmaceutical industry?	53	I am willing to take part in such research as a researcher: 48.2 I am willing to take part in nonpharma sponsored research: 25.0 I am not willing to take part in any type of research: 21.4 Others: 5.4
22	Have you experienced concerns from patients about participation in pharmaceutical-initiated research that requires subject recruitment?	47	Yes, there have been concerns from my patients to take part in research: 31.4 No, there have been no concerns expressed to me from patients regarding taking part in research: 60.8 Others: 7.8
23	Do you think participation in pharmaceutical-initiated research might lead to risks that could jeopardize your 32-professional status?	54	Yes: 24.1 No (please click on next button): 50.0 I do not know (please click on next button): 25.9
24	If you answered "yes" to Q23, what are these risks?	32	Not applicable: 59.4 Adverse events: 25.0 Patients' confidentiality disclosure: 9.4 Other (please specify): 6.3

GCP: Good clinical practice, ICH: International Conference on Harmonization, CITP: Certified International Trade Professional, SPSS: Statistical Package for Social Science, HIPS: Health Information Privacy and Security Course

The study by Sulthan studied the attitudes of clinical investigators toward conducting clinical trials in Saudi Arabia and the barriers they encounter. The study showed that the majority of clinical investigators who worked at therapeutic departments of various academic hospitals intended to conduct research. Barriers such as lack of time, financial compensation, and encouragement were more apparent [5].

This is the first study to report the knowledge, attitude, and perception of HCPs regarding pharmaceutical-initiated clinical research in UAE,

Table 3: Response summary for Section C

Question number	Question	Number of participants who attempted the question (n=75)	Response rate for each answer (%)
25	Is it permissible to conduct pharmaceutical-initiated research in your institution?	51	Yes, but only if noninterventional (not involving medications): 9.8 No: 21.6 Yes, both interventional and noninterventional: 23.5 I do not know: 45.1
26	Why do you believe pharmaceutical-initiated research is needed in your country?	50	To support the institution research department financially: 22.0 To have guidance on how to conduct the research as they have knowledgeable research team: 36.0 To have local data generation: 32.0 Other (please specify): 10.0
27	In your institution, who decides which nurses/ physicians take part in research?	50	Head of department: 30.0 Medical director/head of institution: 16.0 Sponsored pharmaceutical company: 4.0 I do not know: 40.0 Other (please specify): 10.0
28	Does the current process at your institution encourage pharmaceutical-initiated research?	51	Yes: 17.6 No: 31.4 I do not know: 51.0
29	What could be your reasons for not participating in clinical trials as a researcher?	50	The participants had to rate the responses under the categories, agree, strongly agree, disagree, strongly disagree, neither agree nor disagree. The responses are represented in Fig. 3

Qatar, Oman, Bahrain, and Jordan. It is also the first study that assessed the reasons for the lack of pharmaceutical-initiated clinical research and trials in the Middle East region. The limitation of the study is a smaller participation size; applying the results to a larger population would thus be difficult.

CONCLUSIONS

There are several barriers related to the knowledge, attitude, and perspective of nurses and physicians on the conductance of pharmaceutical-initiated clinical trials. Identifying barriers that could be administrative, cultural, and academic in nature; tackling them; and helping HCPs understand the importance of trials may change the status quo and increase the number of trials in the Middle East region. Future prospects include conducting a more detailed questionnaire-based survey specific to individual barriers. This will help narrow down the exact cause of the reduced number of trials in the region. A questionnaire specific to therapeutic areas should be developed, as the answers may be different based on various specialties. Questionnaires specific to individual countries could be considered rather than a common questionnaire for all countries and a larger population could be targeted to better understand the gaps across countries. Now that nurses and physicians have been surveyed, more surveys on the barriers and challenges faced by medical research departments in the pharmaceutical companies could be conducted to further analyze the exact reasons for the reduced number of trials in the Middle East region.

AUTHOR'S CONTRIBUTION

The author was actively involved in conducting the survey as part of a research assignment/thesis with University of Liverpool.

CONFLICTS OF INTEREST

The author has no conflicts of interest to share.

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