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RESEARCH ARTICLE

How are Pharmacists using Telegram for Professional Purposes in the Arab World?

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Abstract:

Purpose:

The objective of this research was to explore how pharmacists in the Arab world are using Telegram for their professional purposes.

Participants and Methods:

A cross-sectional survey was conducted to investigate how pharmacists used Telegram for professional purposes in the Arab world. The survey questionnaire was distributed electronically to 391 participants and the response rate was 64%.

Results:

The majority of the participants (65%) were females, and 69% of them were less than 40 years old. Also, more than half of the respondents (63%) had a bachelor's degree, and 76% of them were working in clinical and operational jobs. 86% of the respondents had less than 20 years of experience, and 56% of the participants employed the Telegram platform for more than 1 hour weekly. Related to the use of Telegram, more than half of the participants (65%) used this social media for personal and professional purposes, and utilized this platform for several reasons: knowledge exchange (16%), education and new updates (14%), professional development (10%), networking (12%), health promotion (8%), and self-promotion (6%). Likewise, almost half of the respondents (49%) attended online courses and events announced on Telegram. According to the respondents, Telegram is a very and extremely important tool to improve knowledge about the profession (64%), reasoning (60%) and thinking skills (57%), problem-solving abilities (59%), creativity (62%), clinical and professional decision making (59%), patient outcomes (54%), and clinical expertise (56%).

Conclusion:

Telegram application has a potential and usefulness for the professional development and practical training of pharmacists.

Keywords: Telegram, Social networks, Arab World, Pharmacists, Professional purposes, Health promotion.

Article History

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1. INTRODUCTION

Social media platforms such as Facebook, Twitter, YouTube, WhatsApp, Snapchat, Telegram, Instagram, among others, have experienced an unprecedented development influencing almost all human activities, including the area of healthcare. In this sense, 2650 million people, almost a third of the world's population, were users of social networks in 2018 [1, 2]. Regarding the medical field, social media platforms

have penetrated the healthcare area and are useful communication and educational tools among medical practitioners, medical students and patients.

In relation to the subject of this research, Telegram, a social media platform created in Russia in 2013, had around 200 million monthly users worldwide in 2018 [3]. This fast, secure, free and simple communication tool allows users of different specialties to communicate using mobile devices, tablets, laptops, telephones, and computers [4]. Telegram is currently the fastest social media messenger. The message arrives in real-time. Its highly encrypted format makes it the safest social media app and also allows for self-destruction.

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Telegram is a cloud-based system and can be accessed by multiple apps at any time.

Furthermore, Telegram can be used for many purposes to send and share messages, videos, photos, music, movies, images, voice content, multimedia files, and allows the possibility of creating bots and Internet groups with up to 100,000 users [4, 5]. For example, in the area of our research, there is a group “Excellence in clinical pharmacy practice” that provides information and educational tools on clinical pharmacy practice [6]. Other groups suggest books and medical references and other topics [7 - 9]. In addition, in Iran, a web robot or bot from Telegram, Televisit, interconnects users and the healthcare service through text messages, videos, photos, images and other resources [10]. This bot is used to send laboratory results, radiographic images, medical and pharmaceutical prescriptions, pay for clinical services or request medical consultations, among other possibilities [10]. The bot allows users to maintain confidentiality.

On the other hand, despite the potential services offered by Telegram as a professional communication tool, it is convenient to highlight that, in the Arab World integrated by 22 countries, also known as the League of Arab States, and worldwide, there are no studies related to the use of Telegram in the pharmaceutical field, whose professionals have used preferentially other social media such as Facebook, YouTube, Wikipedia and Twitter for personal and professional purposes [11 - 15]. However, there are few studies in Saudi Arabia which focused on the use of other social media applications by pharmacists [16, 17], while other studies focused on other healthcare professionals [18]. These conventional social media have been used by pharmacists throughout the world to communicate with one another, enhance their professional development and reach a broader range of customers. However, the potential and helpfulness of the Telegram social media platform for the professional development and practice of pharmacists are almost unknown across the world.

In this sense, the objective of our research is to explore how pharmacists in the Arab World are using Telegram for their professional purposes.

2. METHODS

2.1. Study Settings and Participants

A cross-sectional survey was conducted to investigate how pharmacists use Telegram for professional purposes in the Arab World. The survey questionnaire was distributed electronically to 391 participants and the response rate was 64%. The ethical approval was granted by Imam Abdulrahman Bin Faisal University. It was assumed that the participants gave their consent by completing the questionnaire.

2.2. Inclusion and Exclusion Criteria

Pharmacists from the Arab World with a diploma or higher qualifications working in private or public pharmacies were included. The rest of the professionals were excluded.

2.3. Description of the Survey Questionnaire

The survey questionnaire was designed by the research team based on previous experiences and a pilot test was conducted to ensure that the questions were well formulated to achieve the research objectives. The questionnaire is presented in Appendix 1. The questionnaire was structured to capture demographic information and data related to the use of Telegram by the participants. The questionnaire was self-administered and consisted of 8 multiple choice questions and 2 open questions. The demographic section contained 5 questions intended to obtain information on age, gender, professional qualification, type of work, and years of experience. The remaining questions focused on the use of Telegram: do you use Telegram? (Yes, no), how much time do you usually spend using Telegram weekly? (Less than 1 hour, up to 2 hours, up to 3 hours, up to 4 hours, up to 5 hours), what are your reasons for using Telegram? (Networking, health promotion, exchange of opportunities, employment/research opportunities, professional development, self-promotion, education and new updates, all of the above), have you ever attended online courses, training programs, or events that were announced on Telegram? (Yes, no), and rate the impact of using Telegram on your professional development and practice (improving knowledge about the profession, improving clinical reasoning skills, improving critical thinking skills, improving problem solving skills, improving creativity, improving clinical/professional decision making, improving patient outcome, and improving clinical skills: not all useful, something useful, very useful, extremely useful).

2.4. Statistical Analysis

The data were analyzed using basic descriptive statistics and were expressed in terms of percentages. Data visualization was represented in graphs and tables.

3. RESULTS

The demographic information of the 267 respondents of this study related to the use of the Telegram social media platform by pharmacists in the Arab World is shown in Table 1. In this table, we observe that the majority of the participants (65%) were females, and 69% of them were less than 40 years old. Also, more than half of the respondents (63%) had a bachelor's degree. Similarly, more than half of them (76%) were working in clinical and operational jobs, and 86% had less than 20 years of experience. Also, Table 1 shows that 56% of them employed this platform for more than 1 hour weekly.

Related to the use of Telegram, Fig. (1) indicates that more than half of the participants (65%) used this social media for personal and professional purposes. In this sense, Fig. (2) suggests that the participants utilized Telegram for several reasons: knowledge exchange (16%), education and new updates (14%), professional development (10%), networking (12%), health promotion (8%), and self-promotion (6%). Likewise, (Fig. 3) indicates that almost half of the respondents (49%) attended online courses and events announced on Telegram.

In addition, Table 2 depicts the impact of using Telegram to improve knowledge about the profession, reasoning and

thinking skills, problem-solving abilities, creativity, clinical/professional decision making, patient outcomes, and clinical expertise.

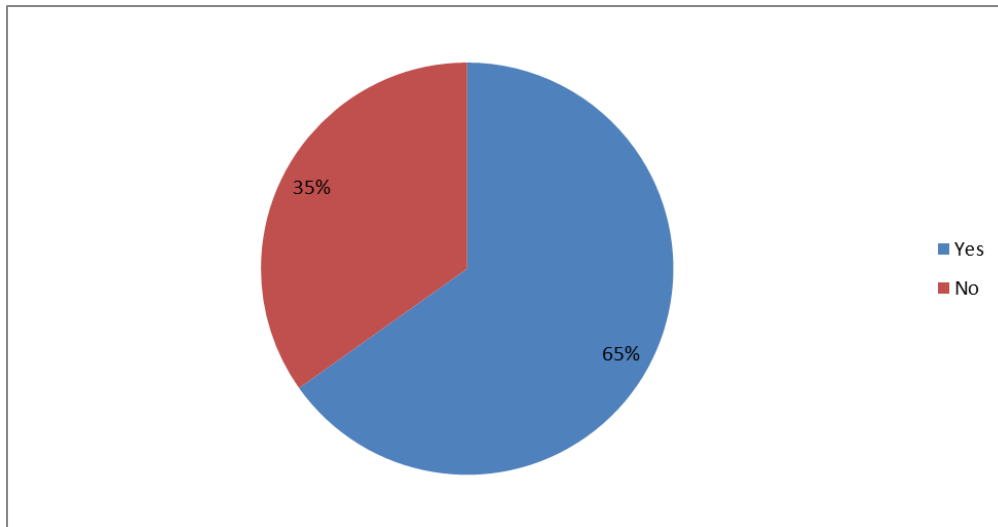


Fig. (1). Use of Telegram by pharmacists in the Arab World (n=267).

Table 1. Demographic information of the respondents (n=267) telegram.

Characteristic	n (%)
-	-
Gender	-
Male	94 35
Female	173 65
-	-
Age (years)	-
20-30	71 27
31-40	112 42
41-50	67 25
51-60	17 6
-	-
Professional qualifications	-
Diploma	24 9
Bachelor	168 63
Master	58 22
Doctorate	17 6
-	-
Type of work	-
Clinical	123 46
Operational	79 30
Other	65 24
-	-
Experience (years)	-
Less than 5	90 34
10-Jun	49 18
15-Nov	43 16
16-20	48 18
More than 20	37 14
Time spent using Telegram per week	-
-	-

(Table 1) contd....

Characteristic	n (%)
Less than 1 hour	44 33
Up to 2 hours	34 26
Up to 3 hours	16 12
Up to 4 hours	26 20
Up to 5 hours	12 9

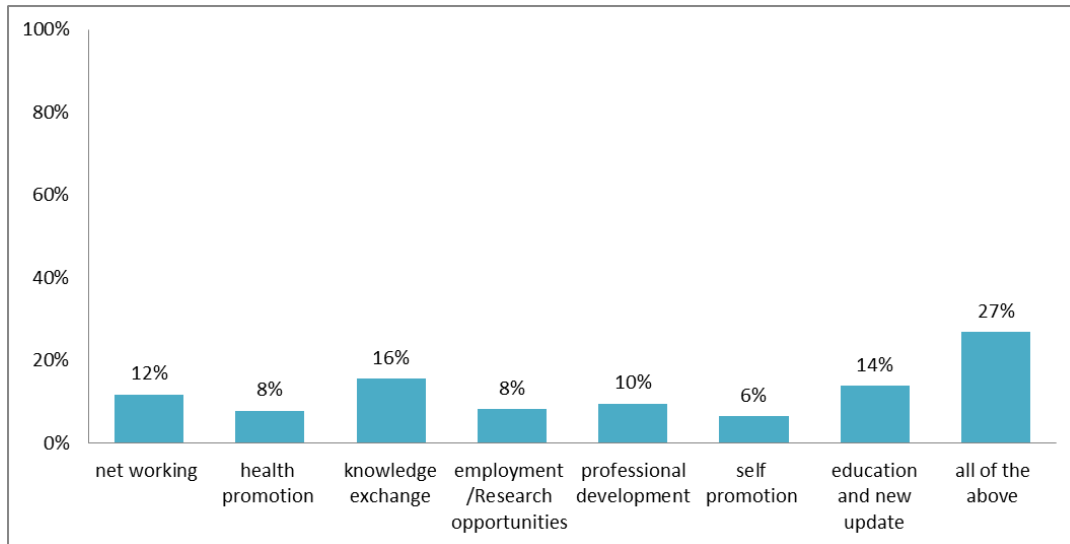


Fig. (2). Reasons for using Telegram professionally (n=267).

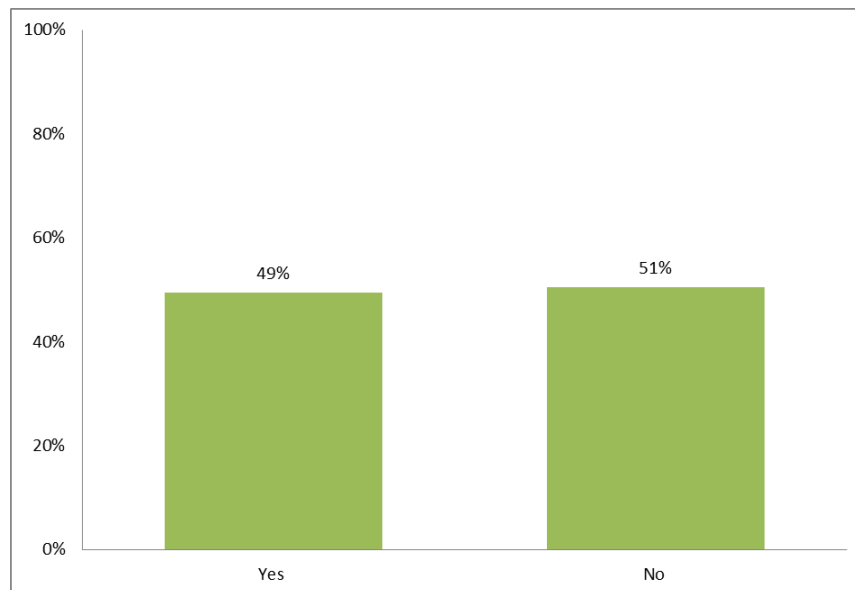


Fig. (3). Attention to online courses and events announced on Telegram (n=267).

Table 2. Impact of using Telegram for professional development and practice (n=267).

-	Not at all (%) Somewhat (%) Very (%) Extremely (%)
Does Telegram improve knowledge about the profession?	8 28 29 35
Does Telegram improve reasoning skills?	13 28 25 35
Does Telegram improve thinking skills?	11 32 19 38

(Table 2) contd....

-	Not at all (%)	Somewhat (%)	Very (%)	Extremely (%)
Does Telegram improve problem solving skills?	12	30	25	34
Does Telegram improve creativity?	12	26	25	37
Does Telegram improve clinical/professional decision making?	14	28	25	34
Does Telegram improve patient outcome?	13	33	17	37
Does Telegram improve clinical skills?	15	29	17	39

Table 3. Results of t-tests.

Factor	Variable	N	Mean	SD	df	t-value	Significance (p-value)
Gender	Male	94	3.07	1.16	265	3.3571	* $p=0.0009$ ($p<0.05$)
	Female	173	2.48	1.24			
Age	18-30 years	79	2.91	1.12	265	0.8072	$p=0.4202$ ($p>0.05$)
	>30 years	196	2.76	1.49			
Experience	0-10 years	139	3.11	1.69	265	4.5843	* $p <0.0001$
	>10 years	128	2.24	1.38			

* Significant

Table 3 analyses if there are any differences in opinions among the participant groups. Accordingly, three variables including gender, age and experience were used to divide participants into groups in order to analyze their use of Telegram. Male participants (Mean=3.07, SD=2.48) appeared to be using Telegram more frequently compared to female participants (Mean=2.48, SD=1.24), which is further supported by the calculation of differences in the opinions at 95% confidence interval, using t-tests. T-tests ($t=3.3571$) revealed significant differences in the use of Telegram among male and female participants ($p=0.0009$, $p<0.05$). Similarly, participants who have experience of less than or equal to ten years (Mean=2.91, SD=1.49) appeared to be using Telegram more frequently compared to those who have more than 10 years of work experience (Mean=2.24, SD=1.38), Accordingly, T-tests ($t=4.5843$) revealed significant differences in the use of Telegram among participants with experience of less than or equal to ten years and those with experience greater than ten years ($p<0.0001$). However, no significant differences were identified among the age groups of participants with age ≤ 30 years (Mean=2.91, SD=1.12), and those with age >30 years (Mean=2.67, SD=1.49), as t-test ($t=0.4202$) revealed no significance ($p=0.8072$, $p>0.05$).

4. DISCUSSION

This research on the use of the Telegram social media platform for professional purposes by pharmacists in the Arab world showed that more than half of the participants (65%) utilized this social media for networking, sharing knowledge, professional development, education, and self-promotion.

It should be noted that since there are no studies published worldwide on the use of Telegram by pharmacists, it is not possible to compare the previous result with other references similar to our study. However, to get an idea about the magnitude, importance, and level of use of Telegram by pharmacists in the Arab world, we can analyze how pharmacists from other countries have used other social media for the purposes mentioned previously [11, 12, 19, 20].

In this regard, it is interesting to note that the percentage of

use of Telegram by pharmacists in the Arab world (65%) is comparable to the percentage of use of Facebook, YouTube, and Twitter by pharmacists in Canada and the United States [19, 21, 22]. It can be seen that the use of Facebook and Twitter by pharmacists in Canada was 75% and 49%, respectively, while in the United States, the usage of YouTube was 74% and Facebook 50% [19, 21]. Also, these studies reported that the social media mentioned previously has been utilized for networking, education, sharing professional information, discussion about health topics, professional promotion and job searching.

Furthermore, in our research, it was observed that more than 50% of the participants consider Telegram to be a very or extremely important tool to improve knowledge about the profession, reasoning and thinking skills, creativity, clinical and professional decision making, patient outcomes, and clinical and problem-solving skills. According to these results, Telegram is a beneficial tool that contributes to the development and professional practice of pharmacists in the Arab World. In this sense, based on the previously mentioned studies, we can infer that, generally, the use of social networks is beneficial for the professional training of pharmacists and are active learning platforms for pharmaceutical practitioners and students [16, 18 - 20]. In relation to this topic, in other fields of knowledge, it has been found that Telegram was a useful tool to improve learning and teaching processes [23 - 26].

On the other hand, almost half of the participants have attended courses and events announced on Telegram, which indicated the potential of Telegram as a useful tool for communication and marketing [27].

The main limitation of this work was the sample size used since 267 participants is a small number of pharmacists when compared with the total number of these professionals in the 22 countries of the Arab World. A similar study [15], instead of focusing on Telegram, analyzed the use of all major social media applications by the pharmacists which have collected data from 268 participants; and the sample achieved in this study is 267, which justifies the sample and addresses the issue

of bias/errors. However, the findings in this study contradicted with findings in a similar study conducted in 2015 [15], which identified less than 5% of the participants use social media for professional work; whereas this study identified that more than 50% participants used Telegram for professional work. The significant increase in the use of social media may be attributed to the recent Covid-19 pandemic, which has significantly increased the reliance on remote applications for managing healthcare operations [16].

Also, another limitation was not to compare the general use of Telegram with other social media platforms such as Facebook, WhatsApp, Twitter, YouTube, and others. This comparison would have given us a better perspective on the use of social media by pharmacists in the Arab World.

In future studies, we will try to overcome these limitations and we will also analyze the educational, informative, cultural and legal barriers that have limited the use of Telegram in this region.

CONCLUSION

The results suggested that more than half of the pharmacists surveyed in the Arab world used the Telegram platform for personal and professional purposes, such as networking, education and professional training. It is also convenient to mention that the potential and usefulness of this platform for the professional development and practical training of pharmacists is relatively unknown worldwide.

ETHICS APPROVAL AND CONSENT TO PARTICIPATE

The ethical approval was obtained from Imam Abdul Rahman Bin Faisal University, Dammam, Saudi Arabia.

HUMAN AND ANIMAL RIGHTS

No animals were used in this research. All procedures performed in studies involving human participants were in accordance with the ethical standards of institutional and/or research committee and with the 1975 Declaration of Helsinki, as revised in 2013.

CONSENT FOR PUBLICATION

Informed consent was obtained from all participants.

STANDARDS OF REPORTING

STROBE guidelines and methodologies were followed in this study.

AVAILABILITY OF DATA AND MATERIALS

The data supporting the findings of the article is available in this article.

FUNDING

None

CONFLICT OF INTEREST

The authors declare no conflict of interest financial or otherwise.

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Declared none.

APPENDIX 1

How Pharmacists are using Telegram for Professional Purposes in the Arab World?

Your participation in this study is completely voluntary. There are no foreseeable risks associated with this project. However, if you feel uncomfortable answering any questions, you can withdraw from the survey at any point. It is very important for us to learn your opinions.

Your survey responses will be strictly confidential and data from this research will be reported only in the aggregate. Your information will be coded and will remain confidential.

For further information please contact: angham_291@hotmail.com

Thank you very much for your time and support. Please start with the survey now by clicking on the continue button below.

*Your age in years

20 - 30 years old

31-40 years old

41-50 years old

51- 60 years old

*Your gender

Male

Female

*Your professional qualification

Diploma

Bachelor

Master

Doctorate

*Your line of work

Clinical

Operational

Others

*Years of experience

Less than 5 years

5- 10 years

10-15 years

15-20 years

More than 20

*Do you use Telegram ?

Yes

No

***What are your reasons for using Telegram professionally**

- Networking
- Health promotion
- Knowledge exchange
- Employment /Research opportunities
- Professional development
- Self promotion
- Education and new update
- All of the above

***Have you ever attend online courses training program, event that were announced in the Telegram ?**

- Yes
- No

***How much time do you usually spend using Telegram on weekly basis?**

- Less than on hour
- Up to 2 hours
- Up to 3 hours
- Up to 4 hours
- Up to 5 hours

***Rate the impact of using Telegram on your professional development and practice**

Not all helpful Somewhat helpful Very helpful Extremely helpful

- Improving knowledge about the profession
- Improving clinical reasoning skills
- Improving critical thinking skills
- Improving problem solving skills
- Improving creativity
- Improving clinical /professional decision making
- Improving patient outcome
- Improving clinical skills

Comments/Suggestions**REFERENCES**

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