


Clinical Services, Barriers, and Public Perspectives of Community Pharmacies in Saudi Arabia: A Cross-Sectional Study

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Abstract

In the Kingdom of Saudi Arabia, there is an increasing demand for community pharmacists to provide the highest level of clinical knowledge and services. However, evidence regarding Saudi public awareness of the clinical services offered by community pharmacies (CPs) and the barriers to using them is limited. In this cross-sectional study, we used an online questionnaire developed by adapting the Consolidated Framework for Implementation Research. A total of 273 participants completed the survey. Half the participants were generally aware of the availability of some CP services but were not informed about the full range on offer, eg, medication reviews (84%) and online counseling (89%). Most of the participants (69.6%) did not identify differences in the care provided by community pharmacists versus hospital pharmacists ($P=0.02$). A commonly reported barrier to using CP services was a general preference for other healthcare professionals to seek pharmaceutical help (85.7%). Many other barriers were also reported, impacting the participants' use of these services. The decision-making authorities should consider improvements to increase patients' awareness and utilization of clinical services and enhance community pharmacists' performance in clinical-oriented pharmaceutical care.

Keywords

clinical services, community pharmacy, out-of-hospital care, pharmaceutical services, post-discharge care, service barriers

Key Points

- The Saudi participants identified some services available in CPs but lacked awareness of important clinical services, such as medication reviews, online counseling, and medication adherence.
- Community pharmacists were not considered the first port of call when participants needed pharmaceutical help.
- The participants did not identify a difference in care provided by hospital or community pharmacists, and some did not appreciate the care provided by either type of pharmacist.
- This study comprehensively explored the barriers to using CPs in Saudi Arabia, which have not been fully addressed. Accordingly, the Ministry of Health should attempt to overcome these barriers and increase public awareness, especially when implementing different services in CPs.

Introduction

In the Kingdom of Saudi Arabia (KSA), significant and rapid advancements in the healthcare system have improved pharmacy practices and other healthcare services. These positive refinements have been significantly influenced by government-private partnerships, which have received increasing

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focus in the Saudi 2030 Vision Plan.¹ The introduction of medication-related programs in some community pharmacies (CPs) aligns with Vision 2030, as these programs are focused on primary preventative healthcare and increasing the private sector's involvement in delivering these health services. Recently, some national studies have addressed the transformation of community pharmacists' practices from dispensing services to clinical pharmacy services, such as performing medication reviews, monitoring patients' vital signs, and providing patient counseling.^{2,3} The provision of the Wasfaty service is an example of the transformation of community pharmacists' practices. The service consists of a Ministry of Health (MOH) e-prescribing platform between primary and secondary care settings for CPs to dispense outpatient prescriptions only.^{4,5} Utilizing such a service enables patients to collect their medications from their nearest CP instead of primary care centers. This results in a quicker and more convenient dispensing process, where patients do not need to wait in long queues to obtain/refill prescriptions. The service also has other benefits, such as avoiding medication errors in prescriptions, checking drug-drug interactions, and providing patients with education and counseling by community pharmacists.^{4,5} However, to ensure the full utilization of such CP services, patients should be aware and appreciative of the role played by community pharmacists.

Previous studies have reported conflicting findings regarding public awareness and appreciation of the role of community pharmacists and the clinical services they provide.^{6–8} For example, one national study found that less than half the study participants acknowledged community pharmacists' roles in improving medication adherence and solving medication-related problems, and only one-third perceived community pharmacists as healthcare providers who can help patients manage their medical conditions.⁷ In contrast, the participants in another Saudi study greatly appreciated the role community pharmacists' played in providing advice and comprehensive consultations, imparting sufficient knowledge about medications, and solving problems.⁸ Both studies had similar study designs, participant demographics (most were less than 50 years old), and sufficient sample sizes to detect differences in public perspectives. However, the evidence regarding public awareness and acceptance of all CP clinical services in KSA remains varied and limited. Previous studies in KSA identified some barriers to providing traditional CP services (ie, dispensing or selling medications). Nevertheless, the researchers did not explore the barriers to delivering clinical services in CPs. This is of immense importance, as the Wasfaty service was implemented in around 3100 CPs with the goal of implementation across the country.⁴ However, around two years following its partial implementation, the service was suspended in some CPs, and 711 primary care centers were reauthorized to dispense medication to patients in preparation for the full implementation of the service during the upcoming period.⁹ It was reported that the location of some CPs far from the primary care centers was one reason for patients' low satisfaction

with the CP service.⁹ Other local reports indicated that some patients complained about service quality (ie, medication shortages and limited working hours at some CPs).¹⁰ However, these were unofficial reports, and to our knowledge, no Saudi studies have been published that explore the reasons for the service suspensions and barriers to the full utilization of CPs. Therefore, the current study aimed to explore public perspectives of the clinical services provided by CPs in KSA. The study objectives included exploring public awareness of the clinical services provided by CPs and public perceptions and expectations of and barriers to using these services, including the Wasfaty service.

Methods

Study Design

This cross-sectional survey study was conducted over three months (from January 1 to March 31, 2023) using an online questionnaire distributed to the Saudi communities. Adults aged 18 years or older who agreed to participate were enrolled in the study. The participants were citizens or residents of KSA with no reading difficulties. Participants were excluded if they could not consent for any reason, were not based in KSA (eg, scholarship students), and were younger than 18 because of the difficulty in obtaining their consent. A convenience sampling technique was used to collect the data. The checklist for reporting results of internet e-surveys (CHERRIES) was used to ensure the proper design and reporting of the data.¹¹

Data Collection

Volunteers across all regions of KSA were recruited randomly by asking colleagues, friends, and family members to distribute Google Form invitations via their social media accounts on WhatsApp, Twitter, Telegram, and Facebook. The open survey was distributed in two languages, English and Arabic. One month after distributing the questionnaire, the invitation message was re-distributed via social media accounts to ensure adequate responses.

Two actions were considered to prevent duplicate responses from the web-based survey. First, editing of the received Google Form responses was limited following submission. Second, the Google Form built-in option "limit to 1 response" was activated, restricting responses to one per person.

Study Instrument

We provided information about the study and its objectives within the online survey, and the participants had to provide their informed consent before starting the survey. The self-administered questionnaire was developed through an in-depth literature review^{2,3,7,8,12–20} and discussions among the members of the research team during frequent

meetings. The consolidated framework for implementation research constructs (CFIR) was used as the theoretical framework to guide the study design, and it influenced the selection of the variables.²¹ The questionnaire was adapted from the CFIR tool as appropriate to ensure it answered the research question and was suitable for the participants. The CFIR is a valid, useful tool that has been used in many international studies to evaluate pharmacy-related services. It can be applied to investigate different contexts and explore potential barriers and facilitators affecting the appropriate provision of CP clinical services.²¹ One physician and practice pharmacist reviewed the questions to assess their appropriateness, and changes were made as required. A pilot study was subsequently conducted with five participants to test the readability and clarity of the questionnaire, and it was amended in line with their feedback.

The survey included 13 mandatory questions across five sections: (1) the participants' demographic characteristics, (2) the participants' clinical data, ie, the presence of chronic conditions and the number of regular medications, (3) the participants' awareness of the clinical services provided by CPs, (4) the participants' perceptions and expectations of using these services, and (5) the participants' opinions of the barriers to using CP services. Most of the questions had multiple options based on the literature and discussions within the research team. The balance comprised closed questions, where the participants were required to indicate "yes", "no", or "do not know".

Data Analysis

The data were extracted from Google Forms into an Excel file and were coded for the statistical analysis. The results of some sections (ie, the participants' demographics, clinical data, and participants' awareness of CP clinical services) were expressed as the rates and percentages of responses only. Statistical analyses were performed for the rest of the study objectives using the statistical software SPSS version 27 (SPSS Inc., Chicago, USA), with 0.05 set as the required significance level. The study cohort consisted of those who were aware of the CP services and those who were not. The binary logistic regression model was used to estimate the association between the explanatory variables and the outcomes (ie, public awareness of CP clinical services). An Omnibus test of the model coefficient was used to determine whether the model used was significant, and the chi-squared test was applied to measure the differences between the study cohorts regarding the other study objectives.

Results

A total of 273 participants expressed their perspectives on the clinical services provided by CPs. Most of the participants were women (n = 166, 60.8%), younger than 40 years of age (n = 157, 57.5%), married (n = 174, 63.7%), and governmental employees (n = 86, 31.5%) and had a bachelor's

degree (n = 154, 56.4%). Supplementary file A provides their baseline data.

Awareness of CP Clinical Services

As Table 1 shows, 50.5% of the participants were generally aware of the availability of CP clinical services compared to 49.5% who were not. Most of them visited CPs to collect/buy medications (79%). Only 15.4% visited CPs to seek a pharmacist's advice. However, their responses varied when asked about their awareness of specific CP services (Figure 1). The participants identified three commonly used services: medication dispensing (including the Wasfaty service) (79%), the community pharmacist suggesting alternative medications (64%), and the pharmacist providing clear instructions about the use of medications (55%). However, other important medication-related services were less known, such as medication reviews (16%), addressing drug-related problems, such as side effects and drug interactions (13%), and checking medication adherence (8%).

Participants' Perceptions and Expectations of CP Services

Table 2 shows that 57.9% of the participants had positive expectations of the usefulness of CP services in improving their healthcare outcomes and medication usage, which

Table 1. Awareness of CP Clinical Services.

Variable	N (%)
General awareness of CP clinical services	- Yes 138 (50.5) - No 135 (49.5)
Reason for visiting the CP	- To collect/buy medication (including the use of Wasfaty service and other online medication dispensing through APPs*) 216 (79) - To buy cosmetics and care products 105 (38.5) - To buy supplement products 103 (37.7) - To seek pharmacist's advice 42 (15.4)
Method of CP services identification	- Saw it in the pharmacy 113 (41.4) - From community pharmacists 80 (29.3) - From friends/relatives 65 (23.8) - Saw it on social media 64 (23.4) - Received messages from community pharmacists or saw posters 49 (17.9) - From hospital pharmacists 39 (14.3) - From physicians 37 (13.6) - From other personnel (eg, colleagues) 25 (9.2) - From other healthcare professionals 12 (4.4)

*Online APPs is an online purchasing system provided by some community pharmacies.

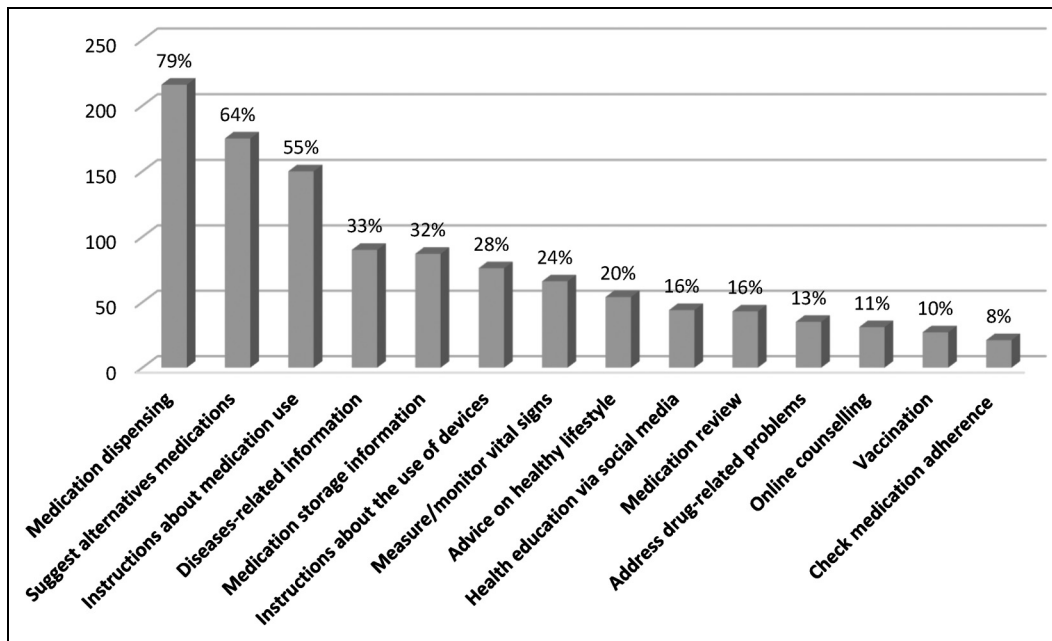


Figure 1. Types of available CP services.

Table 2. Participants' Perceptions and Expectations of Using CP Services.

Variable	Total N (%)	Awareness of CP services N (%)	Unawareness of CP services N (%)	P value
Participants' perceptions of using CP services				
CP services benefits				
- Yes	158 (57.9)	106 (67)	52 (33)	<0.001*
- No	64 (23.4)	13 (20)	51 (80)	
- Do not know	51 (18.7)	19 (37.3)	32 (62.7)	
Preferred pharmacist to seek medical advice ^a				
- Community pharmacist	30 (11)	18 (60)	12 (40)	0.32
- Hospital pharmacist	37 (13.6)	14 (38)	23 (62)	
- Both are the same	190 (69.6)	105 (55.3)	85 (44.7)	0.88
- Do not appreciate the care provided by any pharmacist	16 (5.9)	1 (6.3)	15 (93.7)	0.02*
Participants' expectations of using CP services				
Expectations of the usefulness of CP services				
- Will help a lot	156 (57.1)	96 (61.5)	60 (38.5)	<0.001*
- May help me	88 (32.2)	39 (44.3)	49 (55.7)	0.09
- Will not help	7 (2.6)	1 (14.3)	6 (85.7)	0.05*
- I do not know	22 (8)	2 (9.1)	20 (90.9)	<0.001*
Conditions that community pharmacist can manage				
- Short-term condition	76 (27.8)	39 (51.3)	37 (48.7)	0.49
- Long-term condition	21 (7.7)	7 (33.3)	14 (66.7)	0.07
- Both short & long-term conditions	161 (59)	90 (55.9)	71 (44.1)	0.02*
- Will not help in managing any type of conditions	15 (5.5)	2 (13.3)	13 (86.7)	0.003*

* Indicates statistically significant results ($P < 0.05$).

^aDefinition and difference between hospital and community pharmacists was provided to the participants.

were significantly related to their high awareness of these services ($P < 0.001$). In addition, 69.6% indicated no difference in care provided by either community or hospital pharmacists; no significant association was identified between the study groups in terms of their preference for the type of

pharmacist with whom to seek help ($P = 0.32$). However, 16 participants did not appreciate the care provided by any pharmacists. Their lack of awareness of the roles played and services provided by community pharmacists was significantly associated with their poor appreciation of the role of

Table 3. Barriers to Using CP Clinical Services.

Barrier	Total N (%)	Awareness of CP services N (%)	Unawareness of CP services N (%)	OR	CI	P value
Prefer other healthcare professionals to seek help:						
• Physicians	189 (69.2)	94 (49.7)	95 (50.3)	3.14	1.43–6.89	0.004*
• Hospital pharmacists	44 (16.1)	29 (66)	15 (34)	7.77	2.71–22.2	<0.001*
• Other staff	1 (0.4)	0 (0)	1 (100)	0	–	1.0
Community pharmacist's lack of knowledge & training	129 (47.3)	46 (35.7)	83 (64.3)	0.40	0.2–0.79	0.009*
No private area to discuss problems	120 (44)	58 (48.3)	62 (51.7)	1.15	0.64–2.09	0.63
Not enough pharmacists to counsel patients	104 (38.1)	49 (47)	55 (53)	0.79	0.43–1.45	0.45
The pharmacist does not have time to discuss patient's problem	104 (38.1)	50 (48)	54 (52)	0.97	0.52–1.79	0.91
Communication difficulties with community pharmacists	79 (29)	23 (29.1)	56 (70.9)	0.33	0.16–0.69	0.003*
Participant does not have time to visit pharmacies	71 (26)	39 (55)	32 (45)	1.39	0.74–2.61	0.3
The pharmacy is located in a busy area	51 (18.7)	31 (60.8)	20 (39.2)	1.31	0.65–2.64	0.45
Transportation problem	50 (18.3)	26 (52)	24 (48)	0.84	0.42–1.69	0.63
Not enough computers to check patient's prescription	36 (13.2)	18 (50)	18 (50)	1.91	0.81–4.48	0.13
Accessibility problem	26 (9.5)	16 (61.5)	10 (38.5)	1.46	0.54–3.93	0.44
Participants lack knowledge of available CP services	7 (2.6)	1 (14.3)	6 (85.7)	0.33	0.34–3.13	0.33
Community pharmacists have business or financial priority	4 (1.5)	4 (100)	0 (0)	> 100	–	0.99
Lack of drug supply at some CPs	3 (1.2)	0 (0)	3 (100)	< 0.001	–	0.99
Lack of trust in community pharmacists	2 (0.7)	0 (0)	2 (100)	< 0.001	–	0.99
Bad community pharmacists' attitude	1 (0.4)	0 (0)	1 (100)	< 0.001	–	1.0

Abbreviations: N, number of participants; OR, odd ratio; CI, confidence interval.

* Indicates statistically significant results ($P < 0.05$) using binary logistic regression analysis.

N.B: The used logistic regression model was statistically significant ($P < 0.001$), and the model explained 28% of the variance in the awareness level of CP clinical services.

pharmacists in improving people's health ($P = 0.02$). Those who were aware of CP services believed more strongly that these services could help in the management of both short- and long-term conditions compared to those who were unaware of CP services (55.9% vs 44.1%, respectively; $P = 0.02$).

Barriers to Using CP Clinical Services

Different barriers to using CP clinical services were identified (Table 3). A commonly reported barrier was preferring to seek pharmaceutical help from other healthcare professionals, ie, community pharmacists were not seen as the first port of call when patients needed help regarding their medications (85.7%). Other barriers include participants' perception that community pharmacists lack knowledge and training (47.3%) and have communication problems with them (29%), ie, they cannot understand or follow a pharmacist's instructions. In addition, resource limitation barriers were commonly reported by the participants; these included the lack of private areas in CPs to discuss patients' concerns (44%), the shortage of CP staff (38.1%), and the time pressure on community pharmacists to counsel patients (38.1%).

Our analysis also showed an association between some barriers and the level of awareness of the clinical services offered

by CPs. Most of the participants noted that they were three times more likely to seek help from a physician than a community pharmacist, even though they were aware of CP services that could help them ($OR = 3.14$, $P = 0.004$). Others preferred discussing their medication-related problems with a hospital pharmacist even though they had 7.7 times higher odds of being aware of the clinical services provided by CPs than those who preferred discussing their medication-related problems with a community pharmacist ($OR = 7.77$, $P < 0.001$). Moreover, the participants who believed their community pharmacists lacked knowledge and training had 60% lower odds of being aware of and appreciating CP services than their cohort ($OR = 0.40$, $P = 0.009$). Lastly, the participants who had difficulty communicating with community pharmacists had 67% lower odds of being aware of the services provided by CPs than those who did not complain of any communication problems with community pharmacists ($OR = 0.33$, $P = 0.003$).

Discussion

This study found that around half the participants were aware of the availability of CP clinical services in KSA. They also had favorable expectations of the positive effects that community pharmacists may have on their health and the reliability with which community pharmacists deliver on the

promise of good quality care. However, the participants still reported some barriers to using CP services.

The extent to which people were aware of the various clinical services provided by CPs varied. Medication dispensing was cited as particularly helpful, but the same did not apply to seeking the pharmacist's advice on medication use or checking medication adherence. Similarly, 63.2% of the respondents in a recent local study had visited a pharmacy to collect/purchase medications (for new and refill prescriptions), but only 17.4% had asked the community pharmacists for medical advice.³ However, 72.8% of the respondents who used CP services agreed that their pharmacists had provided them with clear directions on how to use their medications.³ Many other international studies have also reported that the public perceive the main role of community pharmacists as dispensing medication.^{15–17} However, the findings of other studies have contradicted these results, as the researchers found that there was an appreciation of the role of community pharmacists as important healthcare specialists who prescribe medication and provide medical advice.^{18,19,22} The variations in public perceptions of the role of community pharmacists could be attributed to different study designs, the demographic characteristics of the enrolled participants, different healthcare systems in different countries, and people's views of CPs based on their personal experiences.

Evaluating public perceptions and satisfaction with CP services is crucial in assessing the quality of CP services and improving healthcare systems and, ultimately, patients' clinical outcomes.^{16,23} The high appreciation of CP clinical services reported in this study is comparable with the findings of previous studies.^{3,14} However, another local study reported a lower level of patient appreciation of CP clinical services.⁷ The author found that 38% of the respondents were confident in the ability of community pharmacists to provide counseling, 35% reported that their pharmacists actively helped them comply with their treatments, and 34% saw community pharmacists as a source of health education.⁷ The variations in public appreciation of the usefulness of CP services between the previous study and the current one may be related to the time frames of the studies, as the public may have become more aware of the role of community pharmacists and had greater appreciation of their services by the time of the current study.

Despite recent improvements in pharmaceutical care services and pharmacists' involvement in patient care, the participants in this study still did not value the assistance they received from any pharmacists compared to physicians. A previous study also found that 58.7% of the patients preferred visiting their physicians for drug therapy consultation compared to 41.3% who chose to seek help from community pharmacists.³ These local findings mirror those of international studies.²⁰ More efforts should therefore be made to inform the public about the role of community pharmacists as being able to provide help when people have medication-related problems or need health education.

We confirmed associations between several obstacles to CP clinical services and participants' awareness of these services. One element influencing public familiarity with and appreciation of CP clinical services is the general belief that community pharmacists lack the necessary expertise and training to provide care. A qualitative study reported a similar finding in that the interviewed participants highlighted that community pharmacists cannot access patients' medical records and full medical histories.¹⁶ Therefore, they may not have sufficient knowledge and information to manage patients in a CP setting.¹⁶ Another major obstacle to providing CP services, as reported in this study and previous ones, is patients' preferences for discussing medication-related issues with physicians and hospital pharmacists instead of community pharmacists.^{3,12,20} Based on the behavior change model developed by Michie *et al*, namely, the behavior change wheel (BCW), the lack of knowledge of CP roles can be categorized as a psychological capability barrier. To overcome it, raising awareness among the public is necessary via the "education", "persuasion", and "modeling" BCW intervention functions.²⁴

Communication difficulties with community pharmacists were reported as another barrier to using CP clinical services in the current and previous studies.^{15,16} In line with the BCW, poor communication with pharmacists is a physical capability barrier. It can be eliminated by enhancing community pharmacists' performance when they provide clinically oriented pharmaceutical care (via "training" as the BCW intervention function).²⁴ Community pharmacists should also put additional effort into building good relationships and acquiring communication skills to deal with the public, as well as identifying their top concerns and providing practical, time-saving solutions.

Implications for Practice. The findings of this study are of considerable value, especially when implementing the Wasfaty service and other new CP services. These findings can augment service leaders' and designers' knowledge regarding the context, barriers, and facilitators to the public's use of CP clinical services generally and the Wasfaty service in particular before they undertake broad transformations within the healthcare system. The current findings would also help ensure the success and sustainability of CP services. It is suggested that some of the interventions based on BCW theory may increase public awareness and acceptability of CP services, improve the CP practices in KSA, and facilitate the full utilization of the Wasfaty and other clinical services in many CPs nationwide.

Limitations. Considering the nature of the study design (ie, cross-sectional and convenience sampling), a limitation of our study is that the study participants may have had a higher appreciation and more positive views regarding CP clinical services than other Saudi populations. In addition, most of them were educated and younger than 40

years of age. However, the findings of this study are still relevant, as in Saudi culture, most young generations live with their families or visit them regularly; they are directly or indirectly involved in the care of their elderly family members. Their awareness and appreciation of CP services may therefore reflect on their family members. A further limitation is that our study focused on public awareness and perspectives of CP clinical services regardless of their health conditions.

Conclusion

The participants in this study had favorable expectations regarding the positive effects of community pharmacists on their health and the reliability with which community pharmacists deliver on their promise of good quality care. Nevertheless, the participants had insufficient awareness of the different clinical services available at CPs. In addition, many barriers that impacted the use of these services were reported. In future studies, researchers should consider conducting comparative studies to identify the differences in awareness across various demographic groups, which may highlight specific populations that may need targeted awareness campaigns. Moreover, longitudinal studies would be beneficial to assess changes in awareness and the utilization of CP clinical services over a specified period. Studies on the impacts of CP services on health outcomes could also be used to showcase the benefits of CPs.

Authors Contributions

Conceptualization: SMK; Methodology: SMK, ZHA, AMB, AMA; Data analysis: SMK, ZHA, AMB, AMA; Investigation and validation: SMK, AH, AAA, HHA, AYJ; Writing—original draft preparation: SMK, ZHA, AMB, AMA; Writing—review and editing: SMK, AH, AAA, HHA, AYJ; Supervision: SMK.

Data Availability Statement

The authors confirm that all data supporting the findings of this study are available within the article or its Supplemental materials.

Declaration of Conflicting Interests

The author(s) declared no potential conflicts of interest with respect to the research, authorship, and/or publication of this article.

Ethical Approval

The study was approved by the Ethical Committee of Umm Al-Qura University on 24/11/2022 (Approval Number: HAPO-02-K-012-2022-11-1279).


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Supplemental Material

Supplemental material for this article is available online.

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