



Exploring Patients' Experiences with a Pharmacy Drive-Through Medication Dispensing Service: A Qualitative Study

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ABSTRACT

Introduction: The pharmacy drive-through service (P.D.T.S.) is an innovative medication dispensing service that aims to reduce the hurdles of collecting medications. Through the P.D.T.S., patients may have the convenience of getting medication at the drive-through pharmacy counter. By conducting a qualitative study, we explored the user's experiences of P.D.T.S. in a public specialist hospital in Miri, Sarawak State of Malaysia. **Methods:** The P.D.T.S. users who consented to participate were invited to a semi-structured phone interview. We go in-depth on the awareness, barriers, application, improvements, and benefits of the P.D.T.S. The interviews lasted, on average, 15 minutes or until achieving data saturation. Audio recordings were transcribed verbatim, and the transcripts were analysed thematically. **Result:** Participants perceived the P.D.T.S. as convenient and gave them a sense of safety through physical distancing while collecting their medications. On the contrary, they experienced confusion with the instructions on using P.D.T.S. and some degree of inflexibility, especially in the appointment setting. **Conclusion:** The users of P.D.T.S. had both positive and negative experiences with P.D.T.S. The negative aspect must be improved, especially the user's instructions and the appointment system.

INTRODUCTION

Covid-19 forced us to go through worldwide quarantine while healthcare professionals, including pharmacists, have been at the frontline in this war ever since. Adaptation is required by reducing transmission risk and innovating new services (1). Numerous approaches have been established to reduce patient waiting time in hospitals and clinics by including electronically delivered prescriptions, redesign of pharmacy workflow, and workforce scheduling plans (2, 3).

In 2003, the Malaysian Pharmaceutical Services Programme, Ministry of Health Malaysia, implemented pharmacy value-added services (4). Pharmacy value-added services are innovative medication dispensing services such as "Pharmacy Drive-through Service (P.D.T.S.)," "Integrated Drug Dispensing System," "Appointment Card Dispensing," "Medication by Mail Service," "Collect-later Service," "Call-and-collect Service" and "Local Partial Medication Supply

Service" (1, 5); however, there are few published data on those various types of value-added services conducted in the government sector. P.D.T.S. has only been reported in government facilities in Malaysia (6).

Various strategies are applied to minimise the time to obtain prescriptions and opt to use drive-through windows or mail orders to obtain their prescriptions (5). Those unable to mobilise efficiently, such as elderly individuals, pregnant women, sick/disabled people, or parents with children in the car, greatly benefit from receiving medication via a P.D.T.S. (7, 8). The monthly drug supplies based on the appointment are prepacked for user collection so that they do not have to endure the waiting process at conventional pharmacy counters. The P.D.T.S. also helps ease the parking space constraints of health institutes. Besides, an internet-based appointment-setting application implemented alongside the P.D.T.S. allows patients to set the date to collect the remaining prescription filling at their convenience. (9).

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A recent study at the Miri Hospital of Sarawak reported that patients were more satisfied with the P.D.T.S. than other services (10). However, the reasons behind such high satisfaction levels and potential barriers to long-term service adoption remain unclear. Based on this information, we aimed to explore the implementation of the P.D.T.S. in Miri Hospital by investigating the users' experiences using a qualitative approach. Various studies on P.D.T.S. in Malaysia use a quantitative approach (11, 12), thus only discussing predictable variables while might not be able to catch unknown variables, especially involving user's experience. The findings of this study are helpful to the service providers to improve the adoption of the service, which is in line with the vision of the Pharmaceutical Services Programme, Ministry of Health, Malaysia.

METHODS

Study design

A qualitative study was conducted by using one-to-one phone interviews. Ethical approval and permission to carry out the study was obtained from the Malaysian Research Ethics Committee, Ministry of Health (NMRR-21-464-59130).

Study population

A purposive sampling approach was followed to recruit defaulted and active users of P.D.T.S. from the outpatient pharmacy department of Miri Hospital. The studied population is 1958 patients registered to use the P.D.T.S. that recently opened from December 2020 to March 2021, while phone calls are done concurrently in March. They were eligible if they were 18 years old and above and could converse in Malay, Mandarin, or English. We excluded patients who were not contactable by phone and had hearing problems or speech disabilities. The participant's telephone numbers were gathered via Pharmacy Information System (Phis)- a prescribing and patient data-based software.

Data collection

Three of these study authors conducted phoned-based semi-structured interviews. We explore the understanding of P.D.T.S. and the motivation and barriers to adopting P.D.T.S. An explanation is given to the participant is on the patient information sheet to get informed consent, and they allowed to withdraw at any time they feel uncomfortable. Participants were informed that their participation in this research was voluntary without monetary incentives, and their privacy and anonymity were ensured. Verbal consent for participation was sought before each interview. All interviews were audio-recorded and transcribed verbatim. The transcribers translated interviews conducted in Malay or Mandarin directly into

English. Participants were selected randomly from the sampling frame using a random number generator. The interviews continued until data saturation was reached at the 15th participant. The research team interpreted data saturation as the point in data collection that no new information was discernible, also known as 'informational redundancy' (13, 14). The interviews consist of some open-ended questions and prompts. The interview questions and critical points are exclusively for this study, as in Table I. A pilot test was conducted to explore and improve interview questions before conducting this study. Interviews were terminated when participants did not have further elaboration. Each interview lasted from 10 minutes to more than one hour; however, most interviews were within 15 minutes. The demographic information was collected at the time of the interview.

Table I. Interview questions and key points.

Interview Outline	Key Questions
Introduction	➤ What are your understandings of value-added services (V.A.S.)? ➤ Have you ever used V.A.S.? If yes, which V.A.S. are you currently using?
Patient's understanding of P.D.T.S.	➤ How did you first get to know about Pharmacy P.D.T.S.?
Reasons and rationale of P.D.T.S.	➤ Why would you choose to or not use P.D.T.S.? ➤ What made you consider using P.D.T.S.? What were your considerations/deliberations before using P.D.T.S.? ➤ May I know where you learned/heard/got the information about P.D.T.S.? ➤ Media/friends and relatives/magazine/newspapers/online research?
Outcomes, challenges/barriers to P.D.T.S.	➤ Please describe your overall experience with P.D.T.S. ➤ Do/did you find it helpful/effective in facilitating your medication collection process? Why/why not? ➤ (For users) How does the service bring benefit to you? Will you recommend this service to others? ➤ (For defaulters) Do/did you find it less convenient than your previous collection mode? What makes you unable to collect your medication based on the appointment date? (e.g., medication not prepared, medication wrongly filled, etc.) ➤ What is your opinion regarding the Pharmacy P.D.T.S.? ➤ Which aspects can be improved regarding the registration and collection of medications? ➤ Please describe the challenges or barriers you encountered while using the P.D.T.S. ➤ What are the difficulties when registering for the Pharmacy P.D.T.S.? ➤ What are the difficulties in collecting all your medications at Pharmacy Drive-Through Counter?

Data analysis

Audio recordings were transcribed verbatim by these study authors. Transcripts were analysed thematically by following the steps of Braun and Clark (data familiarisation, data coding, identifying themes, re-examining themes, defining and naming themes, and synthesising the report) (15). The authors inductively coded the data with the aid of Excel software and a single code ascribed to every different idea. The research team verified the coding via debriefing meetings in which thorough discussions occurred. Data under the same code were collated and sorted into categories, then re-examined and collapsed into possible themes with associated subthemes. The research team collectively assessed, refined, and named the themes during debriefing meetings.

RESULTS

Demographic characteristics and awareness of the services

Fifteen participants were interviewed in total, as shown in Table II. The majority were male (67.0%) and above sixty years old (n=9). There were 47% (n=7) native to non-native participants. Most are unaware (n=13) of pharmacy value-added services. Most awareness comes from the promotion of hospital staff (n=12). In particular, only 53% (n=8) of those aware of the services were willing to promote the P.D.T.S. to others.

Table II. Demographics of the participants, n=15.

Characteristics	Description	Number of Participants
Age group (years)	21-60	6
	61-90	9
Ethnicity	Native	7
	Non-native	8
Gender	Male	10
	Female	5

Themes

Four predominant themes from the data showed two positive experiences of P.D.T.S. (convenience and safety), and the other two were negative experiences (lack of flexibility and complicated application) that derive eight sub-themes. Figure 1 provides an overview of the themes and their associated sub-themes.

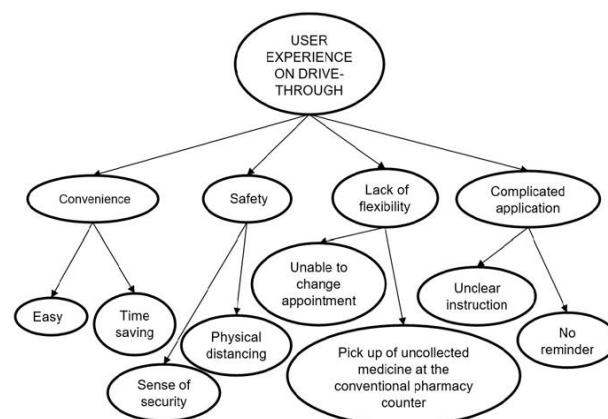


Figure 1. Theme and subthemes of patients' experiences using drive-through service.

Convenience

The participant finds it convenient as there is no need to search for parking. A participant mentioned that it is not easy to bring disabled patients to the pharmacy if it rains. Many (n=12) commented that there is no longer the need to queue and wait in the pharmacy. The participant was pleased with the accuracy of the medication package, and since it was all prepacked according to the appointment date, the collection at P.D.T.S. was seamless and fast.

Easy

You could only stand in the corridor because the waiting area was packed inside. We are so happy we can use the P.D.T.S. and Thankful that your hospital has this method. I am a freelancer, so that I can collect medication on time. I hope this P.D.T.S. can be carried on so the public can enjoy its benefits. I fully support your service because the convenience and service are good. The officers have shown an excellent attitude and are quick.

Participant son-in-law of Y.H.S., 81 years old, male.

Time-saving

I was wondering how effective the P.D.T.S. service is. I am worried they will miss my medication or get mixed up, but I found all are correct and accurate. They are pretty organised in the P.D.T.S.; the staff that passed the medication was speedy. Oh, it is so convenient, and also no need to search for a parking place. If it is raining, I must bring my son along; he is disabled, so moving is complicated. It is troublesome to find parking, not disabled-friendly, and walkways not shaded for lousy weather, while having a P.D.T.S. is more convenient. So another scenario is that we struggle to queue up and stand at the pharmacy. Even searching for a parking lot is troublesome. I

think you guys know this problem has not been solved for quite a long time. I do not mind walking if the weather is good, but it would be terrible.

Participant mother of A.C.J.R., 22 years old, male.

Safety

Participants mentioned that they do not have to walk out of their car, thus feeling safe. It would be challenging during rainy days when they have to hold an umbrella in one hand and a handbag in the other, which could be vulnerable to assault or snatching. Besides having a secure space in the car, it also provides personal space for physical distancing during the Covid-19 pandemic. Participants complained that taking medicine at the pharmacy counter exposed them to Covid-19 because of crowding.

Sense of security

I do not have to walk; I feel very safe. I do not have to walk down, you know, from the parking place, all the way to the hospital, coming out to the parking lot. As women, we carry a handbag and sometimes during rain, we have to use an umbrella on the other hand. So, when you drive in the car, you feel safe; it is just in your car—less risk of a snatcher. I feel safe in my car.

Participant mother of A.C.J.R., 22 years old, male.

Physical distancing

The previous collection mode is unsafe because of too many people and takes time. I may sound extreme, but I cannot find a place to stand in such a small space.

Participant son-in-law of Y.H.S., 81 years old, male.

Lack of flexibility

A participant like to use other value-added services (V.A.S.) such as "call and collect" and "locker for you" services, which fewer people currently use. Other services such as "medicine via postal" and "drop and collect" also do not have to take a long time to queue, while for the P.D.T.S., the participant thinks it might be a long queue soon after many people sign up for that service. Participants mentioned that they prefer the flexibility to pick up their medicine, not necessarily on the exact date. P.D.T.S. Miri Hospital allows only three days grace period, and the medicine package will be sent to the main pharmacy. Some participants do not agree with this policy.

Unable to change pick-up dates

I have multiple appointments in the hospital from multiple clinics; I like to take the medication balance simultaneously or might be earlier than the pick-up dates; I can only do this if requested at the counter.

Participant K.K., a 66-year-old female.

Pick up uncollected medicine at the conventional pharmacy counter

We experienced that we missed the pick-up date; the staff referred us to pick it up at the pharmacy counter because, after three days, the package was returned to the pharmacy. We come to the counter; however, we have to wait; also, I wonder if we need to wait again because the medicine is already packed, and the pharmacy should give us the package. We wait pretty long, and we think this process is unnecessary.

Participant J.W.A., 62-year-old, male.

Complicated application

Technology-savvy participants found that instructions are clear for online appointment systems and appealing; however, they tend to forget to collect on the day selected; thus, it would be best to set reminders.

The elderly found that the system and policy were confusing and complicated. Some suggest simplifying the instruction for laypeople. They still need to get information on choosing the following collection dates. Many people are confused that the dates in the P.D.T.S. appointment cards are not the dates for collection but are estimated dates for a medication refill. Patients can choose the day of pick up at P.D.T.S. They are still unsure whether to collect or call prior to collection, and there are failed submissions; that require further reinforcement on the procedure.

There are many uncertainties in making an appointment and a successful transaction. Some only know to enter the application via Q.R. code; however, their P.D.T.S. card shows other means to enter the application via a link—other ways to view successful transactions via the application besides checking email.

Even though the application provides information that the user can check, most users need a reminder system that is not featured. The application was supposed to assist the user in booking an appointment for a drug refill; however, some users felt apprehensive about this new procedure.

Unclear instruction

I suggest that pharmacy staff teach patients using the online application with clear instructions so that people know what to do.

Participant AA, 45 year old male.

No Reminder

I do not think it is challenging to follow P.D.T.S. service instructions. However, we tend to forget to collect on the day we selected. It would be best to set reminders.

Participant J.W.A., 62 years old, male.

DISCUSSION

P.D.T.S. has been a V.A.S. newly introduced in Miri Hospital since December 2020 (10); this is the first available study that explores consumer experience on P.D.T.S. qualitatively during the Covid-19 pandemic that can further use to improve this service. It is a new service and requires more promotions. Pharmacists should take the initiative to promote and expose patients to the various V.A.S. provided by the hospital to enjoy the benefits (10).

Drive-through pharmacy service is convenient, fast, and easy to use, as discovered by users in this hospital and elsewhere (8, 11, 12, 16-18). Users can avoid long queues in the pharmacy department, saving valuable time. They also do not have to find parking that is hard to come by in the hospital and can collect their medications regardless of the weather as they do not have to leave their cars. The service is also suitable and convenient for the disabled. Furthermore, users can now choose their appointment dates to refill their medication, enhancing flexibility.

Moreover, P.D.T.S. also decreases the risk of users being exposed to Covid-19. P.D.T.S. requires less human-to-human interaction and provides a physical distance during medication collection, which is favourable during this Covid-19 pandemic (5, 8, 17, 18). However, there are concerns that the consequent lack of communication and opportunities for counselling may jeopardise patient care (7, 11, 16, 17, 19). Our facility overcomes this by only enabling Drive-through Pharmacy service for refills, making it mandatory that patient counselling is conducted for all new prescriptions.

A problem encountered in the P.D.T.S. is the no-show by users who had booked the service. During the interviews, we discover several reasons for not collecting medication. It seems that users tend to forget the appointment dates of their medications. Unfortunately, the P.D.T.S. offered was initially

inflexible, where users who had missed the appointment date would have to revert to collecting their medications from the pharmacy counter. A user claimed that P.D.T.S. is inconvenient because multiple clinics' appointment dates cannot consolidate into one P.D.T.S. collection time. Unlike walk-in patients to the pharmacy counter with multiple appointments in the hospital, they prefer to take all medications from those multiple clinics at once. Using the P.D.T.S., the patient will have to visit multiple times monthly for a refill, causing inconveniences. This information proved helpful in the design of remedial action, as a similar study conducted in Sabah did not investigate reasons for no-shows (5).

Explicit instruction on the process is essential to provide a smooth patient experience as registration becomes a hurdle in this service (7, 10). For example, registration can be available in three languages to help people understand better about the service. Other than that, they also suggested that pharmacy staff provide a more detailed, concise, and easy briefing during the promotion of P.D.T.S. so that people of different levels of education and age can understand fully.

Navigating the mobile application for the medication refill appointment can be apprehensive for the non-technology-savvy user. Empowering the patient to select their pick-up dates is uncommon and unconventional. Nevertheless, it is easy for consumers who have busy schedules and rely on technology (20). There is a need to hold a hand in learning to adapt to mobile applications (21) until society generally manages to navigate the application interface instinctively. Users forget the dates they choose to check via email or the application. Many users recommended a reminder system via short message service (SMS) that will incur costs to manage the application.

Upon interviews, users proposed some recommendations to improve the service. They suggested building an extension lane for P.D.T.S. similar to users in Sabah (12) to avoid inconvenience to other hospital visitors. Traffic jam is not an issue currently because P.D.T.S. is still new, but it may be a problem in the future. They also recommended providing P.D.T.S. in other facilities besides Miri Hospital to enjoy this service, especially for those living in rural areas. Moreover, some users suggested having a shaded counter to avoid the heat and the sunshine. There is also essential to display the working hours in front of the P.D.T.S. counter. Like other studies, users prefer more extended service hours (12). They proposed to have this service during weekends and holidays because some might need to work and be unable to collect medicine during standard working hours.

Strengths and limitations

The qualitative design enables a more profound understanding of patient experience with P.D.T.S., complementing the

findings of other quantitative studies. The study was conducted in Miri City; the captured experiences reflect the served population. Maximum variation was achieved in terms of age and ethnicity; however, all participants were from urban backgrounds, and the lack of rural representation may reduce the depth of the data.

There may be some elements of courtesy bias, as investigators introduced themselves from the same provider who provided the service, ie. Pharmacy Department, Miri Hospital. Participants may be sugar-coating their response due to fear that giving negative reviews may affect future services being provided to them. Nonetheless, sufficient assurance was given to the participants, especially on confidentiality, encouraging the expression of honest views.

The lack of national data published on P.D.T.S. (12) and V.A.S. thus requires some exploration to elucidate the impact of this service. If innovation in V.A.S. is fruitful, further enhancements and expansion of the services might benefit society.

CONCLUSION

P.D.T.S. provides convenience and safety to patients. It is a great alternative way to collect medicines, especially during this Covid-19 pandemic which reduces people's contact time, provides reasonable physical distance, and reduces exposure to crowded areas. Implementing this service requires revision since the policy is less flexible and the workflow is confusing. It is essential to improve upon the hindrances to maximise this platform.

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CONFLICT OF INTEREST

The authors declared no conflict of interest.

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