

Assessment of Patients' Satisfaction towards Drive-Through Pharmacy Service in Sandakan Health Clinic

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Abstract

Introduction: Drive-through pharmacy is one of the pharmacy value-added services (VAS) in Ministry of Health Malaysia facilities to ease the collection of follow-up medication. While previous studies have studied the awareness, attitudes, barriers and challenges related to drive-through pharmacy, this study aimed to explore a different aspect.

Objective: This study aimed to assess patients' satisfaction with the drive-through pharmacy service and to determine the association between socio-demographic characteristics and the patients' satisfaction level towards drive-through pharmacy service at Sandakan Health Clinic.

Methods: This cross-sectional study was conducted from April 2022 to April 2023. Patients, including their caregivers or family members, who registered for drive-through pharmacy service at Sandakan Health Clinic were invited to participate in the study. An adapted questionnaire was used to evaluate patient's satisfaction with the drive-through pharmacy service. The satisfaction score was categorised using Blooms' cut-off point. Meanwhile, the association between socio-demographic characteristics and patients' level of satisfaction was assessed using Mann-Whitney U test and Kruskal Wallis Test.

Results: The result showed that 96% of patients had a good satisfaction towards the drive-through pharmacy service, while 3.6% had moderate satisfaction, and 0.4% reported poor satisfaction. The median total satisfaction score was 16, indicating that most patients were fully satisfied with the service. No significant association was observed between socio-demographic characteristics and patients' satisfaction level, except for education level ($p=0.034$).

Conclusion: Most patients showed great satisfaction towards the drive-through pharmacy service provided by Sandakan Health Clinic, with education level demonstrated a significant association with patient's satisfaction. Several key areas for improvements were identified in this study and may be considered for implementation to provide a better service for patients in the future.

Keywords: Drive-Through Pharmacy, Pharmacists, Pharmacy Value-Added Services, Satisfaction

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Introduction

Pharmacies in many countries have adopted new services such as pharmacy value added services or extended pharmacy services to improve medication accessibility for patients with chronic diseases. These services had become more popular in the pandemic era, as they reduce congestion in healthcare facilities (1). In Malaysia, the Ministry of Health (MOH)'s Pharmaceutical Services Programme introduced Pharmacy Value Added Services (VAS) to address long waiting times in public healthcare facilities. The types of VAS available in MOH health facilities include Medicines by Post (*Ubat Melalui Pos* - UMP), Appointment Card, Integrated Drug Dispensing System (*Sistem Pendispensan Ubat Bersepadu* - SPUB), Drive-Through Pharmacy and a few others (2).

Drive-through pharmacy service offers a convenient alternative for the collection of refill medications. Once registered, patients, caregivers or family members can collect their refill medicines at the drive-through pharmacy counter on appointment date. The refill medicines will be prepared in advance, eliminating the need for patients to park their car and wait in line. The first drive-through pharmacy service in Malaysia was first implemented as a pilot project in Pulau Pinang in 2008 (3). At the Sandakan Health Clinic, drive-through pharmacy service was introduced in 2014 as an initiative to reduce waiting times at the outpatient pharmacy. Eligible patients or their representatives may register at the pharmacy screening station of the outpatient

pharmacy counter. Eligible criteria include prescription with more than one-month supply and the absence of dangerous drugs. Once registered, the original prescription will be kept by the pharmacy, while the patients or representatives will receive a copy of the prescription and the drive-through pharmacy card. The subsequent month's medication can then be collected at the drive-through pharmacy counter.

The drive-through pharmacy counter in Sandakan Health Clinic is located behind the outpatient pharmacy which enables registered patients or representatives to drive through and remain in their vehicles during medicine collection and exit via a designated one-way roundabout after collecting their medications. The service operates from 8.30am to 4.30pm, every Monday to Friday, with a pharmacist assistant on duty every month. Since its establishment, the average number of prescriptions served in drive-through pharmacy has grown substantially from an average of 200 per month in 2015 to 800 per month in 2021. In view of this increment, it is essential to review this service for further improvement. In healthcare setting, patient satisfaction surveys serve as one of the tools to assess the quality of healthcare service delivery (5). Therefore, in this study, our aims were to assess patients' satisfaction towards drive-through pharmacy service and determine the association between socio-demographic characteristics and the level of satisfaction towards drive-through pharmacy service at Sandakan Health Clinic.

Method

Study settings

This single-centre cross sectional study was carried out at Sandakan Health Clinic, Sabah, Malaysia for a duration of one year, from April 2022 to April 2023. This study was registered with the National Medical Research Registry (NMRR ID-22-02064-U8V) and was approved by the Medical Research Ethics Committee, Ministry of Health Malaysia.

Study population

The study population consisted of patients who registered for drive-through pharmacy service at Sandakan Health Clinic. All patients, caregivers or family members who registered for drive-through pharmacy service at Sandakan Health Clinic during the study period were invited to participate in this study. Patients who did not understand English or Malay were excluded from the study.

Sample sizes were determined using a sample size calculator by Raosoft Inc. The total population size was 1279 (patients who registered for drive-through pharmacy service in Sandakan Health Clinic). The accepted margin of error was set at 5% with a 95% confidence interval. Sample size estimation was based on our estimation that at least 50% of patients using drive-through pharmacy service are satisfied with our service. This resulted in a sample size of 296 patients.

Data collection

The candidates of this study were identified at the outpatient pharmacy counter when handing in their prescriptions. Patients who met the inclusion criteria were approached by the investigator. Those who agreed to participate were asked to provide informed consent. Interviews were then conducted using a researcher-administered questionnaire.

Study instruments

The study adapted a validated questionnaire by Liew et al., with prior permission acquired (6). All items that assess patient satisfaction in the original questionnaire were retained with minimal rephrase. Therefore, factor validity test was not conducted. Face and content validation was conducted by two senior pharmacists from Sandakan Health Clinic, a pharmacist who are in-charge of the drive-through pharmacy, and four junior pharmacists. The percentage of agreement across the seven experts for face validation was 98%, while the scale content validity index based on universal agreement (S-CVI/UA) value for content validation was 0.86.

The original English version of the questionnaire was translated to Malay. The translation process followed a forward and backward translation method where the forward translation was performed by two independent native Malay speakers with good command in English. Their translations were then harmonised and re-conciliated into a single harmonised version. Subsequently, another two expert language translators performed the backward translation into the original language independently. All the translators involved were not aware of the existence of the original version of the questionnaire to prevent any information bias.

The questionnaires comprised three components. The first component collected basic demographic information such as gender, age, distance between home and the drive-through pharmacy, occupation and level of education. The second component consisted of 16 items designed to assess patient satisfaction on the various aspects of the pharmacy drive-through service using 4-point Likert scale, with 1 being Strongly Disagree, 2 is Disagree, 3 is Agree, and 4 is Strongly Agree. The third component included four open-ended questions that asked patients about the overall performance and suggestions to improve the drive-through pharmacy service.

Data analysis

To derive the level of satisfaction, responses in the second component of questionnaire were group into two categories, in which Strongly Agree and Agree were classified as being satisfied, while Disagree and Strongly Disagree were classified as not satisfied. Scores were assigned to the responses using a binary scoring method. A score of one was assigned if the response was Strongly Agree or Agree while score zero was given if the response was Disagree or Strongly Disagree. The scores of the levels of satisfaction were derived by adding up the scores of 16 items, resulting in a minimum possible score of zero and a maximum possible score of 16. Based on Bloom's cut-off point, the total scores were categorised as good satisfaction (score 13-16), moderate satisfaction (score 10-12), and poor satisfaction (score 0-9) (7-11).

Incomplete questionnaires were excluded from data analysis. Data were analysed using IBM Statistical Package for the Social Sciences (SPSS) version 28.0. All socio-demographic categorical data were presented as frequencies and percentages. The median of total satisfaction scores was calculated to summarise the overall satisfaction level across all patients. The association between patients' sociodemographic characteristics and satisfaction levels was assessed using Mann-Whitney U-test and Kruskal Wallis test. A p-value of less than 0.05 was considered statistically significant.

Topic analysis was used in analysing the responses of the four open-ended questions. All responses were listed and grouped by themes.

Results

A total of 350 patients were approached, out of which 303 patients consented and were enrolled in the study. Table 1 presented the socio-demographic characteristics of the respondents and the satisfaction scores. Majority of the respondents were female (57.8%), aged more than 65 years old (31.4%), lived within a distance range of 1 to 10 kilometres (75.9%), unemployed (55.4%) and had a background with secondary education (49.5%).

The overall median satisfaction score was 16. Most respondents (n=291, 96.0%) had scores between 13 and 16, which were categorised as good satisfaction, and 3.6% (n=11) of the respondents scored between 10 to 12 (moderate satisfaction). Only one respondent (0.4%) scored 9 in satisfaction score (poor satisfaction).

As shown in Table 1, there were no statistically significant differences in satisfaction levels across all socio-demographic characteristics except education level, with a p-value of 0.034. To explore this further, Mann-Whitney U tests were conducted to compare the patients' satisfaction scores between: (i) primary and secondary education group, (ii) secondary and tertiary education group, and (iii) primary and tertiary education group. The tertiary education group showed a statistically significant difference when compared to the primary education group ($p < 0.01$) and the secondary education group ($p = 0.018$). The comparison between primary and secondary education groups was not statistically significant ($p = 0.063$).

Table 2 showed the satisfaction levels on the 16 aspects of the drive-through pharmacy service. All respondents (100%) were satisfied that the dispensers were knowledgeable. In contrast, only 261 respondents (86.1%) reported being satisfied with the adequacy of direction sign board.

Table 1: Socio-demographic characteristics of the respondents and satisfaction score towards drive-through pharmacy service (n=303)

Socio-demographic characteristic	n (%)	Total satisfaction score, Median (IQR)	p-value
Gender			
Female	175 (57.8)	16 (1)	0.815*
Male	128 (42.2)	16 (1)	
Age			
18 - 25 years old	0 (0)	-	0.209**
26 - 35 years old	17 (5.6)	16 (1)	
36 - 45 years old	31 (10.2)	16 (1)	
46 - 55 years old	73 (24.1)	16 (1)	
56 - 65 years old	87 (28.7)	16 (1)	
> 65 years old	95 (31.4)	16 (1)	
Distance			
1 - 10 Kilometres	230 (75.9)	16 (1)	0.204**
11 - 20 Kilometres	70 (23.1)	16 (1)	
21 - 30 Kilometres	3 (1)	16 (1)	
> 30 Kilometres	0 (0)	-	
Occupation			
Employed	135 (44.6)	16 (1)	0.264*
Unemployed	168 (55.4)	16 (1)	
Education			
Primary	74 (24.4)	16 (1)	0.034**
Secondary	150 (49.5)	16 (1)	
Tertiary	79 (26.1)	16 (1)	

Abbreviations: IQR = interquartile range

* Mann Whitney U test, **Kruskal Wallis test

Table 2: Satisfaction level on the 16 aspects of the drive-through pharmacy service (n=303)

No.	Item	n (%)	
		Satisfied	Not Satisfied
1	I am satisfied with the operation hour.	298 (98.3)	5 (1.7)
2	I am satisfied with the interaction between dispenser and patients/caregiver.	302 (99.7)	1 (0.3)
3	The location of drive-through pharmacy is convenient.	265 (87.5)	38 (12.5)
4	The drive-through pharmacy is easily accessible.	263 (86.8)	40 (13.2)
5	I can easily obtain my medications at the drive-through pharmacy even in bad weather.	267 (88.1)	36 (11.9)
6	I am satisfied with the problem identification.	303 (99.3)	2 (0.7)
7	I wait less than 30 minutes to get my medication.	300 (99.0)	3 (1.0)
8	The dispensers are knowledgeable.	303 (100)	0 (0)
9	The dispensers are helpful.	302 (99.7)	1 (0.3)
10	The drive-through pharmacy has adequate direction sign boards.	261 (86.1)	42 (13.9)
11	I am happy with the way the medications being dispensed (5R criteria).	301 (99.3)	2 (0.7)
12	I am satisfied with the quantity of medications being dispensed until next refill date.	301 (99.3)	2 (0.7)
13	I am satisfied with the medications label.	302 (99.7)	1 (0.3)
14	I am satisfied with the way medications were packed.	302 (99.7)	1 (0.3)
15	The drive-through pharmacy provides flexibility in setting up appointment date.	298 (98.3)	5 (1.7)
16	I am satisfied with the procedure in obtaining medication if missed the appointment date.	300 (99.0)	3 (1.0)

Abbreviations: 5R = the right patient, the right drug, the right time, the right dose, and the right route

On the four open-ended questions about the performance and suggestions for drive-through pharmacy service, only 10 responses were received. Three themes were derived from these responses, which were presented in Table 3.

Table 3: Responses about the overall performance of drive-through pharmacy service

Theme	Quote	Comment
1. Accessibility	...limited space to have one-way flow of driving, sometimes need to reverse the car then only can drive out from the DTP area (Patient 97 and Patient 181)	The respondents expressed dissatisfaction with the restricted accessibility due to narrow roundabout.
	...lorry from other clinic also park here, it's hard for me to enter the DTP area to get the medication (Patient 17, Patient 153 and Patient 210)	The DTP reserved area was frequently occupied by lorry who delivered medication stock, Poslaju or vehicles from other clinic due to the proximity of DTP to the pharmacy sub store.
2. Operation hours	I work 8am-5pm on weekdays. During lunch DTP also closed then it is hard for me to collect the medications (Patient 8, Patient 19, Patient 167 and Patient 188)	Respondents commented about the DTP service operation hours that were not convenient for the working group.
3. Small awning size	The small awning sometimes makes us difficult to collect the medications on rainy days without getting wet (Patient 11)	Patients found it quite difficult to take the medications on bad weather such as raining heavily due to small awning at DTP area.

Abbreviations: DTP = drive-through pharmacy; SHC = Sandakan Health Clinic

Discussion

Our findings demonstrated a high level of satisfaction with the drive-through pharmacy service at Sandakan Health Clinic. This finding aligned with the results of a study by Chung et al. which reported that the majority of the patients demonstrated the highest level of satisfaction with the drive-through pharmacy service with an average score of 4.40 (SD=0.70) (12). This implied that the drive-through pharmacy service users were satisfied with this innovative method of follow-up medication dispensing, due to its convenience, efficiency, time-saving nature, and reduced waiting time when compared with the conventional dispensing service at the outpatient pharmacy counter. Additionally, the study conducted by Chan et al. has shown that drive-through pharmacy service achieved a higher satisfaction level of value-added service as compared to mail pharmacy services (13). This possibly due to its greater convenience in dispensing medications that are not restricted to certain medications or required refrigeration (13).

According to our study, education level was significantly associated with patient's overall satisfaction with drive-through pharmacy. This finding coincided with a study conducted by Lagu et al. who found that there was a significant relationship between satisfaction level and individual education level (14). Another study that supported this finding was a study conducted by Hekkert et al. where patient's education significantly influenced the satisfaction outcome (15). This could be attributed to the fact that individuals with higher education levels were generally more conscious of their environment and were aware of consumer rights (16). As a result, they tend to seek higher quality services including public healthcare.

Our study highlighted the satisfaction with many aspects of drive-through pharmacy service provided, particularly in relation to the dispenser's performance. Specifically, all patients were satisfied with the dispenser's knowledge, while most respondents showed satisfaction with the dispenser's interaction with patients or caregivers, their helpfulness, and the clarity of medication labels and packaging. These results indicated overall satisfaction with the pharmacists and pharmacy assistant who were overseeing the drive-through pharmacy. Similarly, a study conducted by Liew et al. found that a high number of patients were "very satisfied" with the service, particularly due to convenience in collecting refill medications, short waiting time, timely rectification of problems and helpful personnel (6).

Our study found a notable percentage of dissatisfactions towards the adequacy of direction sign boards (13.9%), accessibility concerns (13.2%), and inconvenient location (12.5%). These concerns were further expressed in the responses to the open-ended questions. The drive-through pharmacy in Sandakan Health Clinic was situated beside the lobby area of the clinic with which may restrict vehicle access. Placing a “strictly no parking” sign may help to prevent obstruction of the drive-through pharmacy area. The existing narrow roads and space limitations have been acknowledged. Any future expansion or restructuring in healthcare facilities should consider accessibility and convenience for patients, depending on budget availability.

The open-ended responses from patients also highlighted several suggestions for service improvement. One suggestion was to extend the operation hours to accommodate the patients who faced difficulties in collecting medication during normal working hours. Moreover, the medication expiry dates should be clearly placed on the medication envelopes to increase the patient awareness. Also, adequate drive-through pharmacy sign boards and a bigger awning were required to ease the medications collection on rainy days.

There are several limitations in this study. A pilot study was not conducted prior to the study as the questionnaire was adapted from a validated tool with minor changes. Regarding the open-ended questions, data saturation could not be confirmed because only ten responses were received. Furthermore, the study was limited to patients attending the Sandakan Health Clinic drive-through pharmacy service, making it a single-centred study. Hence, the results may not be generalised to other healthcare facilities in Malaysia. Future studies should include more healthcare facilities for a more comprehensive view of the satisfaction level of drive-through pharmacy service and other value-added services. Additionally, the exclusion of patients who could not understand English or Malay may have introduced selection bias. Thus, further study was recommended to include a more variety of patients, particularly those who understand Chinese or native Sabahan languages as well.

Conclusion

Majority of patients have good satisfaction level towards the drive-through pharmacy service provided by Sandakan Health Clinic. This study found that patient satisfaction was significantly differentiated by education levels. The suggestions provided by patients can be used to improve the drive-through pharmacy service so we can continuously cater to patient needs. In the future, it would be beneficial to expand the study population to include value-added services in more healthcare facilities which could provide additional insights to explore.

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Conflict of interest statement

The authors declared no conflict of interest in this study.

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