Publics' Perceptions and Satisfactions Regarding the Role and Services Provided by Pharmacists at Outpatient Pharmacy Department (OPD) in a District Hospital

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Abstract

Introduction: The public may not be aware of pharmacists' roles other than dispensing medicines. Understanding patients' satisfaction can help to improve the delivery and quality of health services.

Objective: This study aimed to evaluate the public's perceptions and satisfaction regarding the role of pharmacists and the services provided by pharmacists at OPD (Outpatient Pharmacy Department) in the district hospital.

Methods: This is a cross-sectional study conducted at outpatient pharmacy Hospital Tangkak during the period 1 Feb 2022 – 31 March 2022. The data regarding the publics' demographics, perceptions and satisfaction regarding the role of pharmacists and the pharmacy services provided were collected by using a self-administered questionnaire which consisted of three section. Mann-Whitney U test and Kruskal-Wallis tests were used to assess the relationship between demographic characteristics and median of perception, satisfaction and total score.

Results: We received 350 filled questionnaires in total. The median perception score is 40 (IQR, 6) and the median satisfaction score is 40 (IQR, 10) out of a maximum of 50, which is a good result. The median overall score based on all of the questions' replies (both perception and satisfaction) was 82 (IQR, 12) out of a possible maximum score of 100, which demonstrates a good result. The participants' perceptions vary significantly by age group, whereas satisfaction was unaffected by demographic characteristics.

Conclusion: The public attending outpatient pharmacy Hospital Tangkak has good perceptions and good satisfaction towards the pharmacists' roles and services. More efforts are required to educate the public regarding the pharmacists' role. Effective pharmacist services should be maintained, and limitations should be addressed to preserve and improve public satisfaction.

Keywords: Public's perception, public's satisfaction, outpatient pharmacy, district hospital

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Introduction

Pharmacists' role in the healthcare system is crucial and undeniable. They are the bridge between doctors and patients who counsel and advice patients to maximise the desired effects of the drugs and minimise the side effects of the drugs (1). Pharmacists' proficiency in knowledge of medicines makes him/her a reliable healthcare service provider (2). They are the experts in medications' side effects and the way to use the medications if compared with the doctors (1). A pharmacist assesses and provides opinions on the best treatment choice for patients instead of merely acting as a dispenser (3). However, many publics perceived that pharmacist was only responsible to supply medications and follow doctors' directions (4). They have almost an even split opinion on who should be the first responder to drug-related questions between physician and pharmacist (5). Also, the public may not be aware of pharmacists' other roles besides dispensing medicines. Therefore, it is crucial to understand the publics' perceptions on pharmacists' roles and identify the pharmacists' roles that the publics are unfamiliar with. Efforts are required to make the roles of pharmacist irreplaceable in healthcare.

On the other hand, the publics' satisfaction with the pharmacists' services is greatly affected by the environment they are served. There are multiple factors that might affect the satisfaction towards the pharmacists' services. The overcrowded waiting areas and language used during the service and the way the pharmacist takes the health condition and medication history are the common issues faced by the publics (6). Understanding patients' satisfaction can help to improve the delivery and quality of health services.

There is a gap in understanding each other between the publics and pharmacists that might affect the quality of services provided by pharmacists and the health-related outcomes of the patients. The objective of this study was to assess the public's perceptions and satisfaction regarding the role and services provided by pharmacists at outpatient pharmacy Hospital Tangkak, and to determine the factors associated with their perceptions and satisfaction. In addition, we wanted to assess the publics' frequency of visits to the pharmacy and determine the main reasons for the public to visit the pharmacy. By obtaining these data, the pharmacists can identify the parts that can be improved in the future. This can enhance the publics' confidence in pharmacists, improve the current healthcare system and provide more benefits to the public attending the outpatient pharmacy at Hospital Tangkak.

Method

This was a questionnaire-based, cross-sectional study conducted from 1 February 2022 to 31 March 2022 at outpatient pharmacy at Hospital Tangkak. The respondents in this study were all the public attending during that period. Based on the sample size calculation, the minimum sample size required for this study was 384. This figure was arrived at by having a 95% confidence level, a standard deviation of 0.5, and a confidence interval (margin of error) of ± 5%. The selected respondents had to be 18 years of age or older, with the ability to read and communicate in Malay, English or Chinese. The populations excluded from this study were elderly aged more than 75 years old, non-functioning mental illness and severely ill public. To reduce bias, healthcare professionals and students from any medical/health-related field were also excluded.

The questionnaire was adapted from a cross-sectional study conducted by Jose et al. in the Sultanate of Oman and a cross-sectional study conducted by Cheah et al. in Sabah, Malaysia (4, 7). Permission to use the variables in this questionnaire was obtained from the original authors of the related journals. The variables were modified to adapt to our facility and the questionnaire was then content validated by five experts who had more than five years of experience in pharmacy practice. The questionnaire was also translated into Malay and pre-tested among 10 respondents for clarity, relevance, acceptability and time for completion prior to the actual study. Following pre-testing, revision and slight modifications to the questionnaire were performed. It was later compared against the original questionnaire to ensure the translation's accuracy. A pilot test was conducted to examine the validity of each question. To improve the internal consistency, five questions were omitted from Section B (Q1, Q2, Q3, Q4 and Q13), making the final questionnaire with 20 items. There were 10 questions on perception and 10 questions on satisfaction. The Cronbach's Alpha obtained was 0.812 which was greater than 0.8 and was considered very reasonable and a good goal, indicating strong and good reliability.

The structured questionnaire consisted of three sections. Section A (six items) collected the demographic characteristics of participants, Section B (ten items) assessed the public's perception towards the roles of pharmacists, and Section C (ten items) assessed the publics' satisfaction on the services provided by the pharmacists. The frequency of visiting and the main reason for the public to visit the outpatient pharmacy was also tabulated. Each item in Section B (Perception) was scored on a five-point Likert scale ranging from 1 (strongly disagree) to 5 (strongly agree) whereas each item in Section C (Satisfaction) was scored on a five-point Likert scale ranging from 1 (very not satisfied) to 5 (very satisfied).

The convenience sampling (non-probability) method was applied. The participants who fulfilled the inclusion and exclusion criteria were randomly selected and consent was obtained from the participants in the waiting area. The participants were given the choice to choose their preferred language questionnaire to answer. The questionnaires were self-administered by the participants and participants took an average of 15 minutes to complete the questions. For each item, the minimum and maximum scores were 1 and 5 respectively. The total marks per section were 50 each. Accordingly, the median perception and satisfaction scores for the participants were estimated. Additionally, the median total score based on responses to both perception and satisfaction was estimated with a maximum possible score of 100. Based on literature, the responses were further classified into good (score ≥80%), moderate (60% - 80%) and poor (≤60%). The

total scores of the participants were tested against the demographic factors to evaluate any differences in the scores depending on gender, age group, race and education level.

The data analysis was done using SPSS version 24. Demographic characteristics of the respondents, the number of visits to pharmacy in the last six months, the reason for visiting the pharmacy, the publics' perception of the role of pharmacists and the publics' satisfaction with pharmacy services in the outpatient pharmacy Hospital Tangkak were analysed descriptively either in frequency (n) and percentage (%) or median with interquartile range (IQR). Mann-Whitney U test and Kruskal-Wallis tests were used for continuous variables and non-parametric data depending on the number of comparative groups. The p value of <0.05 was considered to be statistically significant.

This study was conducted in compliance with the ethical principles outlined in the Declaration of Helsinki and the Malaysian Good Clinical Practice Guideline (GCP). This study was approved by the Medical Research and Ethics Committee (MREC) of the Ministry of Health (MOH) of Malaysia and registered in the National Medical Research Registry (NMRR) under registration number NMRR ID-21-02229-CBG.

Results

In this study, only 350 visitors were approached instead of 384 due to worsening Covid-19 cases in Malaysia during the data collection period. The response rate was 100 %. The demographic characteristics of the participants were displayed in Table 1. The majority (37.4%) were 31-45 years old. The demographic information showed that female respondents were slightly more in numbers as compared to their male counterparts. Of the respondents, 70.3%, 19.4% and 10.3% were Malay, Chinese and Indian respectively. Almost half of the respondents had a secondary level of education (49.5%). Only 0.6% had no education.

Table 1: Demographic characteristics of the participants (n= 350)

Characteristics	n (%)
Gender	
Male	158 (39.3)
Female	192 (60.7)
Races	
Malay	246 (70.3)
Chinese	68 (19.4)
Indian	36 (10.3)
Others	0 (0)
Age group (year)	
18-30	89 (25.4)
31-45	131 (37.4)
46-60	89 (25.4)
61-75	41 (11.7)
Education level	
No education	2 (0.6)
Pre-school [a]	3 (0.9)
Primary [b]	30 (8.6)
Secondary [c]	177 (50.6)
Post-secondary [d]	82 (23.4)
Tertiary [e]	56 (16.0)

[a] Kindergarten and equivalent; [b] Year 1 to Year 6 and equivalent; [c] Form 1 to Form 5 and equivalent; [d] Form 6, Matriculation, Diploma and equivalent; [e] Degree and above.

Among the 350 respondents who answered the questionnaire, majority of them (37.4%) had visited the outpatient pharmacy two to three times in the last six months. The main reason for attending the outpatient pharmacy as indicated in Table 2 was to collect medications (84%). The other purposes (2.3%) were returning unused medications, drug enquiries, delivering foods and beverages to workers and cleaning purposes.

Table 2: The number of visits to the OPD pharmacy in the last six months and the reasons (n= 350)

Questions	n (%)
Number of visits to the pharmacy in the last 6 months	
1	115 (32.9)
2-3	131 (37.4)
4-5	55 (15.7)
6-10	33 (9.4)
More than 10	16 (4.6)
Reasons for attending pharmacy*	
For medication collection	284 (84)
Counselling on devices and disease management	8 (2.3)
Pharmacy exhibition/booth	2 (0.6)
Discharged from ward	25 (7.1)
Accompanying family members to obtain medication	88 (25.1)
Others	8 (2.3)

* Respondents were allowed to choose more than one response.

Table 3 and 4 presented the respondents' perception towards the roles of pharmacists and satisfaction on the services provided by pharmacists at the outpatient pharmacy Hospital Tangkak. For the purposes of explanation, the responses of strongly disagree and disagree was merged as 'disagree', whereas responses of strongly agree and agree was merged as 'agree' (Table 3). The responses of very not satisfied and not satisfied was merged as 'not satisfied', whereas responses of very satisfied and satisfied was merged as 'satisfied' for the purposes of explanation (Table 4).

The statistic presented that 65.8% of the respondents perceived that pharmacist knows more about their medicine and its side effects and how to use it than doctor. The majority of respondents (94.6%) mentioned that pharmacist should check their prescriptions for accuracy in terms of drug name, dose, any problem in taking the medications together, etc. before dispensing the medication. 304 out of 350 respondents agreed and strongly agreed that pharmacist is responsible to counsel and reassess the proper technique to handle devices such as inhaler and insulin pen, and majority of the respondents (92.9%) considered the pharmacists as an expert in matters related to drugs. Almost 90% of the respondents perceived that pharmacists as an integral part of the health care system like physicians and nurses.

Table 4 summarised the response to satisfaction related questions. The statistics showed that vast majority of the respondents were satisfied with the services provided. Over 90% of the respondents expressed good satisfactions overall. Among the respondents, 94% of respondents satisfied with the pharmacists' attitude at the counter, their response on drug related questions enquired and the language used during communication. Whereas, 91.5% of them satisfied with the amount of time spend by pharmacist with each patient. The pharmacists' knowledge demonstrated when answering enquires also received good feedback from the respondents, where 92.9% of respondents showed good satisfaction.

The relationship between the demographics of participants and the relationship with median perception, satisfaction and total score are summarised in Table 5. The median perception score and median satisfaction score are 40 (IQR, 6) and 40 (IQR, 10) out of a maximum score of 50 respectively. The median total score based on the responses to all the questions (both perception and satisfaction) was 82 (IQR, 12) out of a possible maximum score of 100, which demonstrates a good score. The median total score and median satisfaction score were found not to be significantly based on the demographics of the participants (gender, race, age group and education level) and the number of visits to pharmacy. In term of median perception score, it was found to be significantly different between age groups (p=0.013), but not with other demographics and the number of visits.

Table 3: Respondents' perception towards the roles of pharmacists (n= 350)

No.	Items	n (%)		
		Disagree	Neutral	Agree
1	My pharmacist knows more about my medicine and its side effects and how to use it than my doctor.	48 (13.7%)	72 (20.6%)	230 (65.8%)
2	Pharmacist should check my prescriptions for accuracy in terms of drug name, dose, any problem in taking the medications together, etc. before dispensing the medication.	8 (2.30%)	11 (3.1%)	331 (94.6%)
3	Pharmacists are allowed to intervene and to modify prescriptions.	73 (20.8%)	73 (20.9%)	204 (58.20%)
4	Pharmacists ask about the history of previous drug allergy, disease details, etc. before dispensing the medications.	19 (5.4%)	40 (11.4%)	291 (83.2%)
5	Pharmacists ask about the use of other medications and traditional herbs to avoid unwanted interaction.	29 (8.3%)	53 (15.1%)	268 (76.5%)
6	Pharmacists always explain the dose, frequency, indication and time of administration of medications clearly and understandable.	6 (1.7%)	32 (9.1%)	312 (89.1%)
7	Pharmacists responsible to counsel and reassess the proper technique to handle devices such as inhaler and insulin pen.	10 (2.8%)	36 (10.3%)	304 (86.9%)
8	Pharmacists provide information related to proper storage of medications.	10 (2.8%)	27 (7.7%)	313 (89.4%)
9	I consider the pharmacists as an expert in matters related to drugs	6 (1.7%)	19 (5.4%)	325 (92.9%)
10	Pharmacists as an integral part of the health care system like physicians and nurses	9 (2.5%)	28 (8.0%)	313 (89.4%)

Note: The responses of strongly disagree and disagree was merged as 'disagree', whereas responses of strongly agree and agree was merged as 'agree' for the purposes of explanation.

Table 4: Respondents' satisfaction on the services provided by the pharmacists (n= 350)

No.	Items	n (%)		
		Not satisfied	Neutral	Satisfied
1	I am satisfied with clean and comfortable environment in the pharmacy.	5 (1.4%)	23 (6.6%)	322 (92%)
2	I am satisfied with the pharmacist's attitudes which are polite, friendly and comfortable to approach.	4 (1.1%)	18 (5.1%)	328 (93.8%)
3	I am satisfied with the pharmacists who are patient enough and listen to what I have to say.	5 (1.5%)	25 (7.1%)	320 (91.4%)
4	I am satisfied with the medications with clear drug label and instructions provided by pharmacists.	4 (1.2%)	23 (6.6%)	323 (92.3%)
5	I am satisfied with the level of knowledge that pharmacists demonstrate in drug related problems.	4 (1.2%)	21 (6.0%)	325 (92.9%)
6	I am satisfied by the amount of time spend by my pharmacist with each patient.	7 (2%)	23 (6.6%)	320 (91.5%)
7	I am satisfied with the kind of response pharmacists provide on questions related to drugs.	4 (1.2%)	17 (4.9%)	329 (94%)
8	I am satisfied with the language used by the pharmacist in discussing drug related matters.	5 (1.5%)	16 (4.6%)	329 (94%)
9	I am satisfied with the relationship that the pharmacist tries to maintain with the patients.	5 (1.4%)	23 (6.6%)	322 (92%)
10	I am satisfied with the privacy maintained by pharmacist while discussing with patients and dispensing medications.	6 (1.8%)	24 (6.9%)	320 (91.4%)

Note: The responses of very not satisfied and not satisfied was merged as 'not satisfied', whereas responses of very satisfied and satisfied was merged as 'satisfied' for the purposes of explanation.

Table 5: Demographics of participants and relationship with median perception, satisfaction and total score

Characteristics	Median perception score (IQR)	P-value	Median satisfaction score (IQR)	P-value	Median total score (IQR)	P-value
Gender						
Male	40 (6)	0.682 [a]	41 (9)	0.789 [a]	82 (12)	0.996 [a]
Female	40 (6)		40 (10)		82 (13)	
Races						
Malay	40 (6)	0.104 [b]	41 (10)	0.942 [b]	81 (12)	0.285 [b]
Chinese	40 (6)		40 (10)		82 (11)	
Indian	41 (9)		42 (10)		87 (11)	
Others	-		-		-	
Age (year)						
18-30	39 (7)	**0.013** [b*]	40 (8)	0.144 [b]	80 (15)	0.090 [b]
31-45	40 (6)		41 (5)		84 (8)	
46-60	40 (6)		41 (5)		83 (9)	
61-75	40 (5)		42 (5)		82 (8)	
Education level						
No education	26 (-)	0.203 [b]	27 (-)	0.243 [b]	53 (-)	0.224 [b]
Pre-school	38 (-)		40 (-)		78 (-)	
Primary	40 (5)		40 (10)		85 (11)	
Secondary	40 (5)		41 (10)		82 (13)	
Post-secondary	40 (8)		40 (8)		81 (12)	
Tertiary	40 (6)		44 (9)		86 (12)	
Number of visits to pharmacy in the past 6 months						
1	40 (6)	0.221 [b]	40 (7)	0.154 [b]	80 (12)	0.128 [b]
2-3	40 (6)		41 (5)		82 (12)	
4-5	40 (6)		40 (9)		83 (12)	
6-10	40 (6)		44 (10)		88 (13)	
More than 10	42 (14)		47 (10)		86 (19)	

[a] Mann–Whitney test, n= 350; [b] Kruskal–Wallis test, n=350

[*] Statistically significant at p<0.05.

Discussion

Pharmacists play a significant role in healthcare delivery because of their experience and proximity to patients (2). There are several studies conducted in Malaysia which are related to pharmacists' roles and services (3, 4, 8). This was the first study conducted among the general population at the outpatient pahrmacy of a district hospital in Tangkak, Johor to provide insight into the ways how the public look at the roles of pharmacist and also further assess their satisfaction towards the services provided here. There are four wards with a total of 72 beds in Hospital Tangkak. The number of patients who visits the pharmacy counter is around 100 patients per day.

From this study, the majority of the respondents (37.4%) had visited outpatient pharmacy Hospital Tangkak for about two to three times in the past six months, followed by 32.9 % of respondents that visited outpatient pharmacy for only once. This finding was different from Jose et al study which showed the majority of the respondents (34.6%) had visited to pharmacy more than 10 times last year (7). However, this comparison might be invalid since Jose et al study was conducted before COVID-19 pandemic. The number of visits to the hospital had been reduced as hospital is one of the high-risk areas. Besides, the low number of visits to the outpatient pharmacy at Hospital Tangkak can be explained as some of the publics might self-medicate by visiting the community pharmacy for minor illnesses such as headache, fever and cold. Respondents might believe the pharmacist is an expert in providing treatments for minor ailments, and think that if the condition is not serious enough to contact a physician, they will seek help from the community pharmacist (7).

The main reason for most respondents attending outpatient pharmacy Hospital Tangkak was to collect medications (n=284, 84%). Our finding was similar to Cheah et al study that demonstrated a vast number of the respondents (76.3%) visited pharmacy for medication collection (4). However, this cannot be used to compare since the respondents in Cheah et al study attend both public and also private pharmacy. Interestingly, only 0.6% (n=2) of the respondents in our research attended the pharmacy for pharmacy booth and exhibition. This could be owing to a shortage of exhibitions, as there have only been two in the last six months due to the COVID-19 pandemic. At the same time, due to a lack of publicity, the participants were unaware of the pharmacy department's activities, or perhaps due to an insufficient publicity approach to attract the participants' attention to the booth.

A total of 350 participants responded to the questionnaire provided. Overall, the participants showed good perception with a median perception score of 40 out of a possible maximum score of 50. When comparing the responsibility between pharmacists and doctors, this study showed that most of the participants perceived pharmacist knows more about medicine, its side effects and its usage. In addition, participants who attended OPD also considered pharmacists as a drug expert. This positive outcome was also demonstrated by other studies (4, 7, 9, 10), which showed that majority of the participants perceived pharmacists as drug experts. The participants agreed, based on the responses, that pharmacists should be completely involved in medication management, from screening prescriptions to confirming correctness in terms of the drug name, dose, and drug-related concerns to dispensing medications to the public. Aside from that, the respondents believed that pharmacists provide important information on how to utilize medical devices like an insulin pen and an inhaler. The situation may differ for the pharmacists working in community settings. In a study conducted in Poland, the role of pharmacists is poorly understood and is frequently perceived as a retailer or dispenser of pharmaceutical product rather than a health and illness advisor (11). Similar public perceptions towards community pharmacists were also found in other studies (5, 12).

Patient satisfaction is a frequently used metric for assessing healthcare quality and finding areas for improvement. Overall, the participants expressed high satisfaction with all of the items in the questionnaire, according to our research. Almost all of the respondents (94%) were satisfied with the pharmacist's language when discussing drug-related issues. They are able to comprehend the information given by pharmacists. Even if there is a language barrier, pharmacists will make every attempt to offer patients the most accurate information possible in layman's terms. Communication skill is one of the top four pharmacist qualities that most respondents desired, especially in community settings (5). From our study, there is a minority of the population who are dissatisfied with the language used. Some non-Malay publics had difficulty understanding the language used during dispensing and the labels on the medicines. By training the pharmacists regarding the common basic Mandarin phrases used and providing label in Mandarin, the language barrier can be reduced. This is comparable to Jose et al study, which indicated that many pharmacists work in Oman's health sector, particularly in community pharmacies with the majority hailing from non-Arabic speaking nations (7). This could have an impact on their fluency when communicating with patients, as well as the patient's satisfaction. However, the general public in the Sultanate of Oman also showed great satisfaction towards the pharmacist's communication there (7).

Long waiting time in OPD is often the major reason for patients' complaints or dissatisfaction about their experiences of visit. Overall, the majority of respondents in this study were satisfied with the waiting time. According to the Client Charter for OPD at public hospitals, pharmacists are responsible for ensuring that the public who visit OPD receive medications within 30 minutes (13). Pharmaceutical Services Division is offering the VAS as a strive to enhance the quality of public services (14). VAS such as *Kad Temu Janji* (KTJ), *Sistem Pendispensan Ubat Bersepadu* (SPUB) *and Ubat Melalui Pos* (UMP) are provided by outpatient pharmacy at Hospital Tangkak. After a considerable rise in VAS utilisation, the percentage of prescriptions served within 30 minutes improved from 83.2% to 90.3%, according to a study conducted at Hospital Queen Elizabeth in Sabah (15). If there is a pharmaceutical care concern with the prescription, such as an incomplete prescription, an inappropriate regimen, or medications that are not available, the pharmacists will intervene after consulting with the doctor. This extended waiting time resulting from the consultation with doctor could be one of the factors contributing to some respondents' displeasure (2%) with the waiting time.

The median perception score did differ significantly (p= 0.013) based on the age of the respondents. Respondents with ages ranged 31-45 years old, 46-60 years old and 61-75 years old provide the equal highest score (42 out of 50), whereas age ranged 18-30 years old provided the lowest score (40 out of 50). However, this outcome was different from Qatar's study where the median perception score is not associated with age, but associated with employment status and the number of visits to pharmacy (5). Due to inadequate evidence to support our findings, further study on identifying factors has been encouraged.

For our investigation, there were certain limitations. The study was undertaken during the COVID-19 epidemic, which resulted in a paucity of the sample, making the results insignificant. In addition, this study was conducted in a small district hospital in Johor only. As a result, the respondents' impressions of pharmacists' roles may not represent the general public's perceptions of pharmacists in Malaysia's district hospitals. More than 85% of our responders have a secondary or higher degree of education. Due to the

lack of respondents with a low level of education, we were unable to examine their perspectives and satisfactions, and hence could not compare them across education levels.

For future studies, it is recommended that larger samples should be recruited from multiple district hospitals in Malaysia to represent the general public's perspectives and satisfaction. Pharmacists collaborate with other healthcare practitioners to deliver high-quality services for the public's health, and their contributions to the healthcare system cannot be overstated. A study can be undertaken to find out how the other healthcare providers feel about pharmacists and how satisfied they are with them. As a result, it is possible to identify pharmacists' limitations and improve their services.

Conclusion

This study yielded some information about the public's perceptions of pharmacists' roles and satisfaction with the services given by pharmacists at OPD HTGK. Overall, the public had a positive impression of pharmacists' roles, with the majority of people seeing pharmacists as drug experts and agreeing that pharmacists' knowledge of pharmaceuticals is superior to that of other healthcare providers. The public reacted positively to the pharmacists' services, with the majority of the public rating 'satisfied' or 'very satisfied' for all of the items accessed. As a result, effective pharmacist services should be maintained, and limitations should be addressed in order to preserve and improve public satisfaction.

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