

Original Research

Assessment of community pharmacists' communication and comfort levels when interacting with Deaf and hard of hearing patients

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Abstract

Background: Deaf and hard of hearing patients who use sign language face considerable communication barriers while accessing pharmacy services. Low comfort-levels between community pharmacists and Deaf and hard of hearing patients result in poor interactions and increase patient safety risks.

Objective: 1) To examine the way community pharmacists interact with Deaf and hard of hearing patients in Malaysia, and their level of comfort in such interactions. 2) To examine how comfort-levels vary by the preferred communication methods, resources and employer support.

Methods: This cross-sectional study was conducted among registered community pharmacists practicing in Malaysia. Questionnaire items included comfort-levels of community pharmacists when interacting with Deaf and hard of hearing patients, used and preferred communication methods, necessary resources, and perceived employer's level of support. Based on the list of registered pharmacies, the questionnaire with a pre-paid return envelope was mailed out while pharmacies close to the university were approached in person. This questionnaire was distributed online using Google Form. Comparisons between comfort-levels and study parameters were analyzed using independent t-tests and ANOVA.

Results: A total of 297 community pharmacists responded (response rate 29.2%). Higher comfort-levels were reported in those who had received between 1 to 5 prescriptions as compared to those who did not receive prescriptions from Deaf and hard of hearing patients (MD= -0.257, SD=0.104, p=0.042). More than 80% used written information and only 3.4% had used the services of a qualified sign language interpreter throughout their community pharmacist career. Significantly lower comfort-levels (p=0.0004) were reported in community pharmacists who perceived training in sign language as a necessity to interact with Deaf and hard of hearing patients (M=3.6, SD=0.9) versus those who were not interested in sign language training (M=3.8, SD=0.6).

Conclusions: The results suggest that community pharmacists were neither extremely comfortable nor averse when interacting with Deaf and hard of hearing patients. The lack of significant findings in terms of comfort-levels may indicate other potential drivers for their choice of communication method when interacting with Deaf and hard of hearing patients.

Keywords

Hearing Loss; Sign Language; Hearing; Communication Barriers; Patient Safety; Pharmacies; Pharmaceutical Services; Pharmacists; Cross-Sectional Studies; Malaysia

INTRODUCTION

Of the 466 million people who have a disabling hearing loss worldwide, approximately 70 million people are deaf.^{1,2} Throughout this paper, the word deaf is written either with an uppercase 'D' or lowercase 'd'. The lowercase 'd' – deaf is used when referring to the audiological condition of not hearing whilst the uppercase 'D' – Deaf is used when referring to a group of deaf people who share a common

language – sign language – and culture. Individuals who have mild to moderate hearing are referred to as hard of hearing (HOH), and they may communicate through sign language, spoken language, or both.³ Deaf and hard of hearing (DHOH) individuals continue to find the entire healthcare system challenging to navigate, and many are singled out due to limited access to healthcare services.⁴ Effective health communication is the cornerstone of access to care and favourable health outcomes. The success of any clinical encounter between a patient and healthcare provider depends heavily on efficient communication, preferably in one's primary language.⁵ This privilege, however, is not extended to DHOH sign language users which could potentially lead to lower patient satisfaction, medication adherence, and healthcare utilization rates.⁶ An increasing number of studies have shown that the communication barriers faced by DHOH patients create a strained patient-provider relationship which results in healthcare disparities.⁷⁻¹⁰

In order to meet the needs of this population, establishing an effective patient-provider relationship is essential. Patient-centred care is primarily built upon the comfort-levels of healthcare providers when communicating with patients, where low comfort-levels may lead to hesitation

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and reluctance to treat patients.¹¹⁻¹³ The effect of low comfort-levels is particularly salient in high-risk, high-stress interactions such as in healthcare settings. Low comfort-levels have been known to arise when engaging in an interaction which involves groups which lack a shared identity or group membership.^{14,15} Prior research in pain care found that increased anxiety and low comfort-levels influenced clinical decision-making processes of white providers when recommending pain treatments to black patients.¹⁵ Such manifestations are also likely to occur in mixed-hearing interactions as a result of the hearing group's discomfort and uncertainty. In the context of treating DHOH patients, studies have reported feelings of discomfort among healthcare providers and particularly with pharmacists.^{8,16} A study conducted in the United States (U.S.) to explore the pharmacy practice in an area with a large deaf population revealed that 70% of the pharmacists were not comfortable interacting with deaf patients.⁸ Pharmacists' lack of knowledge on Deaf culture may lead to negative assumptions and misguided presumptions of the needs and preferences of DHOH patients. Community pharmacies are retail pharmacies focused on health and well-being which sells prescription only and over-the-counter medicines with oversight of a pharmacist. Considering that community pharmacists are often the first and last point of contact when accessing the healthcare system, they bear a larger responsibility in ensuring effective and meaningful communication.¹⁷ Besides ensuring accessible healthcare, community pharmacists are strategically positioned to provide clear and easily understandable counselling about medication usage and its possible contraindications.

It is well established that communication barriers continue to impede the access of healthcare for DHOH patients and is the key reason why they utilize healthcare services to a lesser extent as compared to the general population.¹⁸ There remains a general lack of sign language interpreters and signing healthcare providers within the healthcare system.^{6,19} Additionally, even when an interpreter is readily available, healthcare providers have been known to opt for other forms of communication methods such as note-writing, informal interpreters such as friends and family, and lip-reading.²⁰ These methods impose risks of miscommunication and suboptimal delivery of healthcare services.²¹ Utilizing family members or friends to interpret in clinical settings is less than desirable due to their familial relationships, lack of formal training in medical terminology and the difficulty in interpreting sensitive situations; all of which can result in adverse drug events and lower medication adherence.^{22,23} Patients experiencing hearing loss have been known to experience higher risk of nonadherence which eventually cause higher healthcare costs, increased morbidity and mortality.²⁴ Due to the possibility of undesirable consequences from miscommunication, routine visits to healthcare providers are often delayed even when deemed necessary.^{25,26}

Many of these issues take on a greater salience in low to middle-income countries such as Malaysia where resources are limited, and healthcare services are stretched due to high patient loads.¹⁸ According to the 2018 Malaysian registry of persons with disabilities, there are 34,447 registered individuals with hearing loss.²⁸ Many countries

have their own unique sign language which has been influenced by local cultures.²⁹ In a study by Hurlbut, two decades ago, it was noted that there were at least four sign languages used in Malaysia at that time, namely Penang Sign Language, Selangor Sign Language, Malaysian Sign Language with its many different dialects spoken in the different states and Manually Coded Malay.³⁰ However, the official sign language currently used by Deaf people in Malaysia is the Malaysian Sign Language (BIM), which was adapted from American Sign Language (ASL).^{30,31} To date, the number of sign language users remain unknown. While some countries have mandated healthcare providers to provide qualified sign language interpreters for Deaf patients, this has yet to be realized in Malaysia.^{32,33} The Persons with Disabilities Act 2008 in Malaysia only states that persons with disabilities shall have equal rights to persons without disabilities in healthcare access and the requirement for other parties to take appropriate measures to ensure this access.³¹ Scholars have warned that health inequalities faced by Deaf patients will continue to worsen as long as communication access is not mitigated.⁷ There remains a small body of evidence-based best practices on ways to address the pharmacy-related communication needs of DHOH patients, especially in Malaysia.⁷ A preliminary study carried out among DHOH Malaysians uncovered that many had difficulties when consulting pharmacists.³⁴ This was further supported in another Malaysian study where community pharmacists found it challenging to communicate with DHOH patients which may have been attributed to their lack of knowledge on the sociocultural aspect of deafness.³⁵ To date, the cultural competency movement in Malaysia's pharmacy education has been slow in uptake. This may be owed to the lack of established accreditation standards addressing cultural competency in pharmacy programmes and the absence of guidelines on cultural competency from the Ministry of Health.^{36,37}

Despite the pertinent roles community pharmacists bear in meeting the health needs of DHOH patients, current literature mainly involves interactions between other healthcare providers and DHOH patients. Therefore, the objectives of this study were to examine: 1) the way community pharmacists interact with Deaf and hard of hearing patients in Malaysia, and their level of comfort in such interactions. 2) how comfort-levels vary by the preferred communication methods, resources and employer support.

METHODS

This study was reported in accordance with the STROBE guidelines.

Study design and sample

This was a cross-sectional study conducted among community pharmacists in Malaysia from July 2016 to December 2016. All independent and chain retail pharmacies in 5 key states in Peninsular Malaysia, namely Selangor, Kuala Lumpur, Perak, Penang and Johor were included as samples in this study. These 5 key states were chosen as they contained the highest concentration of community pharmacies across the country.³⁸ A list of pharmacies registered in Peninsular Malaysia was obtained



from the Malaysian Pharmaceutical Society website.³⁹ Eligible respondents included registered pharmacists practicing in community pharmacies. With an estimated 1017 total number of pharmacies, a minimum effective sample size of 280 was needed to achieve a confidence interval of 95% and a 5% margin of error (<http://www.raosoft.com/samplesize.html>). This was based on the assumption that there is only 1 registered pharmacist working at a particular shift at a time, 1017 pharmacists were approached.

The survey form with a pre-paid return envelope was mailed to all community pharmacies within the 5 states. Pharmacies close to the university were approached in person by a member of the research team and completed surveys were collected by hand a week later. A second data collection using an online survey was utilized due to insufficient responses from the pen paper survey. The online survey using Google Form remained public for 3 months allowing time for community pharmacists to complete it. No financial incentives were offered to the respondents, and no reminders were sent.

The study protocol was approved by the university's institutional review board with the registry number of 2016-7034-6863.

Study instrument

A self-administered questionnaire was developed based on study objectives and prior research with pharmacy practice involving Deaf patients. Face and content validation were done using a proposed 3-round Delphi Iteration involving 10 experts. This included a member of the Malaysian Federation of Deaf, experts in pharmaceutical care, experts in survey design, and experts in English. Panelists were engaged in the study remotely, and all responses were anonymous.⁴⁰ The Delphi procedure is as follows: Prior to the full dissemination of the survey, the survey instrument was emailed to those who agreed to be panelist with instructions to email the researchers with their comments upon completion. All responses were collated and inserted in an MS Excel spreadsheet where two researchers reviewed all the comments in detail and made changes accordingly. Any discrepancies or ambiguity with regards to the comments were discussed with each expert individually. A second letter was then sent to each expert along with the amended survey form and a summary of the suggestions and comments from each expert, identified only by an assigned random number. Experts were then asked to review the survey form once again where necessary, based on the feedback from the other experts in the first round. Experts were then emailed the survey form and they provided comments to the researchers upon completion. The survey form was again checked thoroughly. However as expertise consensus was achieved after the second round, the iteration was deemed sufficient and ended.⁴¹⁻⁴³

Survey measures

The survey consisted of 14 close-ended items subdivided into 5 sections covering 1) comfort-levels of community pharmacists when interacting with DHOH patients, 2) used and preferred communication methods, 3) resources/skills needed to communicate, 4) perceived employer's level of support and 5) sociodemographic characteristics of

respondents. The single item measure used in the first subsection assessed the pharmacists' comfort-levels. The fourth subsection utilized the 5-point Likert Scale from "Strongly Agree" to "Strongly Disagree". Respondents were also asked to select all applicable used and preferred communication methods and resources needed to communicate with DHOH. Demographics (e.g. gender, years since graduation, years of work experience and highest qualification) and practice site characteristics (e.g. daily interaction and daily prescriptions from DHOH patients, and type of pharmacy) were also collected. None of the questions in the online version of the survey required a forced choice. The survey was available in the English language and took between 10 to 15 minutes to complete.

Comfort-levels scale

The survey item "I am comfortable providing service to Deaf or HOH patients" was used to capture the level of comfort in serving DHOH patients. This item was rated on a scale of 1= strongly disagree to 5= strongly agree. Higher scores are indicative of higher comfort-levels. Overall, community pharmacists reported a mean of 3.66 (SD=0.85) in comfort-levels, which is slightly above the midpoint of the scale ranging from 1 to 5. In the following sections, comparisons between comfort-levels and study parameters (used and preferred communication methods, resources, employer support, demographics and practice site characteristics) will be made.

Data analysis

Descriptive statistics were used to describe the communication modalities used and preferred. Normality of continuous data was determined using Kolmogorov-Smirnov test. Mean scores of comfort-levels were compared between demographics, used and preferred communication methods, resources and employer support using independent t-tests and one-way analysis of variance (ANOVA). All statistical analyses were conducted using IBM SPSS Version 25.0 (IBM Corp., Armonk, NY). Statistical significance was set at $p < 0.05$. The responses for the item on daily interactions with DHOH patients were recoded to 'yes' for those who answered < 5 , 5 to 10 , > 10 and 'no' for never. The final 5-point Likert scale question addressing employer support was collapsed into 3 categories where 'strongly agree' and 'agree' responses were recoded as 'agree' while 'strongly disagree' and 'disagree' responses were recoded as 'disagree'. Incomplete responses were excluded from the statistical analysis.

RESULTS

A total of 297 community pharmacists responded (response rate=29.2%), of which 125 (42.1%) of them were online responses and the rest were from hand surveys. The majority of the responses were female ($n=186$, 62.6%). Their median age was 36 (21-78), whereby the prominent age group was between 30-39 years (40.1%). The majority ($n=187$, 63%) of the respondents received less than 5 prescriptions daily from DHOH patients. The highest qualification for many respondents was a Bachelor of Pharmacy ($n=243$, 82%) followed by a Master of Pharmacy ($n=45$, 15%), with only 10 respondents (3%) having some level of postgraduate qualification.

Characteristic	n	Mean (SD)	t-test / F
Gender	Male	108	3.7 (0.8)
	Female	184	3.7 (0.9)
Duration since graduation (years)	<5	69	3.7 (0.9)
	5-10	68	3.7 (0.8)
	>10	155	3.6 (0.8)
Work experience as a community pharmacist (years)	<5	104	3.8 (0.8)
	5-9	49	3.7 (0.8)
	10-14	58	3.7 (0.9)
	15-19	37	3.5 (0.9)
	≥20	44	3.5 (0.8)
Interactions with Deaf and hard of hearing patients	No	29	3.2 (1.2)
	Yes	263	3.7 (0.8)
Number of daily prescriptions from Deaf and hard of hearing patients	Never	102	3.5 (0.9)
	<5	186	3.8 (0.8)
	5 – 10	4	3.8 (0.5)
Type of pharmacy ^c	Chain	122	3.7 (0.8)
	Independent	163	3.6 (0.9)

^a The analysis was repeated between the hand and online surveys, and it revealed no significant differences except for daily prescriptions from Deaf and hard of hearing patients (p=0.031) and experience interacting with Deaf and hard of hearing patients (p=0.006)

^b Post-hoc analysis: Significant difference between never and <5 (mean difference= -0.26, SE=0.104, p=0.04)

^c Pharmacy types which were not indicated were excluded from means comparison

* significant at p<0.05

The number of daily prescriptions from DHOH had a significant impact on community pharmacists' comfort-levels, $F(2,289)=3.09$, $p=0.047$ (Table 1). Pairwise comparisons of the means indicated only one significant comparison: respondents who received between 1 to 5 prescriptions from DHOH daily reported higher comfort levels than respondents who did not receive prescriptions from DHOH patients, $p=0.042$, $d=0.30$. Prior experience interacting with DHOH patients was associated with significantly higher comfort-levels as compared to those

who had never interacted with a DHOH patient, $p=0.044$, $d=0.46$. Neither gender nor years of work experience as a community pharmacist had a significant influence on their comfort-levels when interacting with DHOH patients.

Based on the communication modalities listed (Figure 1), the majority (89.6%) of respondents resorted to writing information down when interacting with DHOH patients and 83.5% acknowledged that it was their preferred mode of communication. Meanwhile, more than one-third (37%)

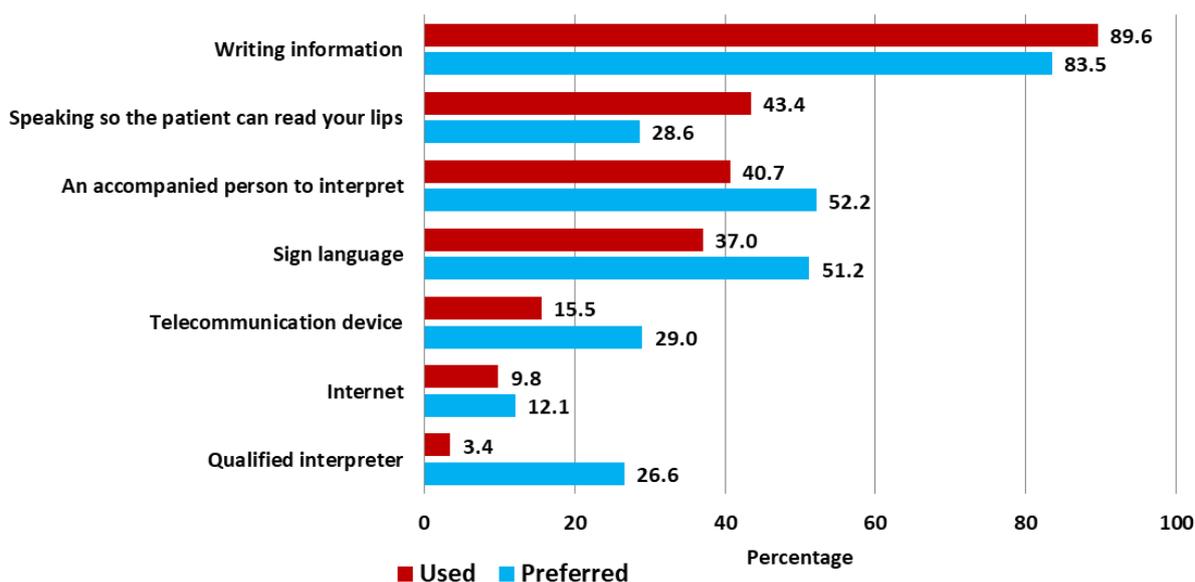


Figure 1. Methods community pharmacists have used or preferred to communicate Deaf and hard of hearing patients

Table 2. Comparison of mean comfort-levels^a when interacting with Deaf and hard of hearing between used and preferred methods of communication

Methods to communicate with Deaf or HOH patient		Used ^b			Preferred		
		n	Mean (SD)	t-test	n	Mean (SD)	t-test
Qualified interpreter	No	253	3.7 (0.8)	-0.39	214	3.6 (0.9)	-0.58
	Yes	10	3.8 (0.4)		78	3.7 (0.7)	
Writing	No	15	3.7 (0.5)	0.25	49	3.6 (0.8)	-1.42
	Yes	248	3.7 (0.8)		243	3.7 (0.9)	
Speaking so the Deaf patient can lip-read	No	142	3.7 (0.8)	0.64	207	3.6 (0.9)	-1.69
	Yes	121	3.7 (0.8)		85	3.8 (0.8)	
Accompanied person	No	146	3.7 (0.8)	-0.73	139	3.7 (0.8)	0.64
	Yes	117	3.7 (0.8)		153	3.6 (0.9)	
Sign language	No	157	3.7 (0.8)	0.56	141	3.6 (0.8)	-0.10
	Yes	106	3.7 (0.8)		151	3.7 (0.9)	
Internet ^c	No	235	3.7 (0.8)	-1.33	256	3.6 (0.9)	-0.70
	Yes	28	3.7 (0.8)		36	3.8 (0.8)	
Telecommunication device	No	221	3.7 (0.8)	-1.36	206	3.7 (0.8)	1.29
	Yes	42	3.9 (0.8)		86	3.6 (0.9)	

^aThe analysis was repeated between the hand and online surveys, and it revealed no significant differences
^bResponses without a previous interaction with a Deaf and hard of hearing individual were excluded from the analyses
^cThe internet refers to any platform on the internet that enables communication.

of respondents reported relying on lip-reading, an accompanied person to interpret, and sign language to communicate with DHOH patients. Besides that, only 10 (3.4%) respondents had used the services of a qualified sign language interpreter throughout their experience as a community pharmacist.

None of the methods of communication the respondents' had used and preferred had a significant effect on the respondents' comfort-levels (Table 2).

Community pharmacists who reported significantly higher comfort-levels did not perceive training in sign language as a necessity to interact with DHOH patients, $p=0.004$, $d=0.45$ (Table 3). While those who had lower comfort-levels felt the need for training in sign language.

The analysis of variance showed that the effect of employer support to utilize resources for improving communication with DHOH patients significantly influenced comfort-levels, $F(2,274)=8.195$, $p<0.001$. Post hoc analyses using Bonferroni's post-hoc criterion for significance indicated that community pharmacists who disagreed with having employer support ($M=3.38$, $SD=0.9$) was significantly less comfortable than those who agreed ($M=3.85$, $SD=0.8$), $p<0.001$, $d=0.55$ and those who neither agreed or disagreed ($M=3.70$, $SD=0.7$), $p=0.04$, $d=0.38$.

DISCUSSION

Effective communication is crucial when pharmacists provide medication information to patients as a failure to do so can result in adverse health outcomes. Communication barriers may compromise the comfort-levels between DHOH patients and pharmacists. This study explored the way community pharmacists interact with DHOH in Malaysia, and their level of comfort in such interactions. The findings suggest that community pharmacists were neither extremely comfortable nor averse when interacting with DHOH patients. Respondents were generally in favour of using written information when communicating with DHOH patients while sign language services were the least popular communication method. The number of daily prescriptions and previous DHOH interactions were seen to have a significant impact on the respondents' comfort levels. Community pharmacists who desired training in sign language were significantly less comfortable when interacting with DHOH patients as compared to those who did not. Lastly, employer support to improve communication with DHOH patients was seen to have a significant influence on the respondents' comfort-levels.

No significant differences were associated between the comfort-levels and the years of work experience as a community pharmacist. However, pharmacists who received between 1 to 5 daily prescriptions from DHOH

Table 3. Comparison of mean comfort-levels^a between resources required to communicate with Deaf and hard of hearing

Resources needed to communicate with Deaf or HOH patient	Comfort-level when interacting with Deaf and hard of hearing			
		n	Mean (SD)	t-test
Training in sign language	No	93	3.8 (0.6)	2.94**
	Yes	199	3.6 (0.9)	
Service of an interpreter	No	210	3.7 (0.9)	0.91
	Yes	82	3.6 (0.8)	
Telecommunication devices	No	144	3.7 (0.8)	1.15
	Yes	148	3.6 (0.9)	
Specialized medical labels / posters	No	148	3.7 (0.8)	0.51
	Yes	144	3.6 (0.9)	
Specialized booklets and handouts with pictures	No	113	3.7 (0.8)	0.66
	Yes	179	3.6 (0.9)	

^aThe analysis was repeated between the hand and online surveys, and it revealed no significant differences.
*significant at $p<0.05$
**significant at $p<0.005$

reported higher comfort-levels compared to those who never received a prescription from this population. Higher comfort-levels were similarly seen for pharmacists who had experience interacting with DHOH patients versus those who had not. This corroborates previous scholarship which recognizes that increased contact with an individual from the outgroup (in this study, DHOH patients) could increase the comfort-levels of individuals from the ingroup (in this study, community pharmacists).⁴⁴ A 2014 study conducted among pharmacy students also reported higher levels of comfort in those who had more experience interacting with persons with disabilities.¹² Labelle *et al.* also noted that increased contact with Deaf people had the potential to correct misconceptions, prejudice, and improve attitudes.⁴⁵

Majority of the respondents used and preferred written information when communicating with DHOH individuals which were also reflected in other studies.^{8,46-48} Despite being the most reported form of communication, it had no significant impact on their comfort-levels. This suggests that the drive to use or prefer written information may not be related to comfort-levels. A study that explored the healthcare providers' perspective of deafness in Australia, reported that the respondents continued to use methods like writing despite acknowledging the miscommunication risks.⁴⁹ The study respondents felt that they were doing the best they could give the limited resources and constraints of the healthcare system. Unfortunately, the sole reliance on written information remains widespread as the healthcare system often favours the hearing and are ill-prepared to meet the needs of DHOH patients. Further compounding this issue is the accepting and non-questioning behaviour of Deaf patients.^{18,47} This may be due to their reluctance in disclosing their impairment to community pharmacists.⁵⁰ Hence, proving difficult for pharmacists to detect any miscommunication or lack of understanding. Deaf patients have acknowledged that written information by pharmacists often contains complex medical terminologies and overwhelming information.^{7,51} This is because sign language is an independent language and is structurally different from an audible language.⁵² It is essential to note that the reading and writing abilities of DHOH patients depend on the stage of life in which they had lost their hearing. Hence, their reading and writing abilities may be suboptimal and could potentially lead to compromised care.^{8,53} Apart from that, lip-reading is not a viable method as the risks for medical misunderstandings are high.⁵² Only 30% of an audible language may be understood through lip-reading as factors such as lighting, surgical masks, and facial hair may hinder the visibility of the lips.⁵ In the context of healthcare where there is little room for error and guesswork, misinterpretation could lead to adverse events.

It is interesting to note that slightly more than 37% of the respondents had used sign language to communicate with DHOH patients. On the contrary, a similar study conducted among community pharmacists in the U.S. showed that only 10% had used American Sign Language (ASL) when interacting with Deaf patients.⁸ Respondents in this current study may have mistook sign language as hand gestures. In actuality, sign language and gestures represent separate entities whereby sign language replaces the spoken language and allows Deaf people to communicate while

gestures contain no linguistic structure and are adapted by hearing people.⁵⁴ It was encouraging to note that half of our respondents had preferred to communicate in sign language; however, this had no significant impact on their comfort-levels. Although having an accompanied person, communicating through sign language, using a telecommunication device and qualified interpreter were mentioned as the study respondents' preferred choices, they fell short in terms of real-world usage. While healthcare providers in the U.S. are obligated to provide effective communication methods when interacting with DHOH patients as stipulated in the American with Disabilities Act (ADA), such legislations do not exist in Malaysia. The lack of explicit legislation and policies in ensuring effective and meaningful health communication for DHOH patients may explain the low utilization rates of qualified interpreters and its insignificant impact on the respondents' comfort-levels as a means of communication. Besides, low to middle-income countries such as Malaysia often experience a shortage of qualified sign language interpreters.^{56,57} Thus, proving difficult for community pharmacists to engage with a qualified sign language interpreter due to the absence of an established network and protocol.

Upon comparing the resources required by community pharmacists to communicate with DHOH against the respondents' comfort-levels, only training in sign language had a significant impact. Lower comfort-levels were reported in community pharmacists who were interested in attending sign language training classes versus those who were not keen. This suggests that they may be aware of the language barriers that exist for Deaf people and the inadequacy of their current communication measures. Indeed, research has shown that language-concordant patient-provider communication is associated with greater use of preventative health services among Deaf sign language users.⁶ A study conducted among pharmacy students to evaluate a co-curricular ASL training which encompassed basic ASL and Deaf culture reported increased perceived confidence when working with DHOH patients.⁵⁸ Malaysian DHOH individuals have also expressed that pharmacists should attend sign language training which would help them learn about Deaf culture.³⁵ Solutions to providing accessible healthcare to DHOH patients should not only be limited to ensuring accessible communication in sign language but also, extended towards providing culturally sensitive Deaf services.

Resources such as health promotion videos and lectures accompanied with written material tailored to the literacy level of Deaf people have been shown to improve their knowledge and understanding.^{59,60} However, such resources did not affect the comfort-levels of the respondents in this study. We consider that the lack of significant impact of these resources might have been due to the accompanying cost and effort associated with such accommodations. Community pharmacies commonly battle issues of inadequate time, shortage of human resources and budget constraints. Furthermore, community pharmacy ownership in Malaysia is not limited to registered pharmacists but open to businesspersons or through partnerships.⁶¹ Without full decision-making authority, community pharmacists may be subjected to

more business-driven activities that have little consideration for effective communication and pharmaceutical care. Thus, resulting in lower comfort-levels amongst those who felt their employer would oppose the utilization of resources when communicating with DHOH patients.

Recommendations

Overall, our findings indicate that the low comfort-levels may be attributed to a lack of DHOH cultural awareness. Thus, raising the question as to how community pharmacists can be better prepared to serve the DHOH population with improved comfort-levels. One strategy is to include cultural competency training in pharmacy practice. While countries like the U.S., Australia and New Zealand have been familiar with cultural competency for over a decade, curricular efforts were only taken seriously when this concept was finally incorporated into accreditation standards.^{62,63} By incorporating cultural competency within the Malaysian standards of pharmacy education, pharmacists will be better educated and prepared to provide pharmaceutical care to DHOH patients and gain skills which are transferrable to other culturally and linguistically diverse populations. In an increasingly competitive market, culturally competent pharmacists may gain an added advantage as they have an increased capacity to care for a more diverse clientele and ultimately have improved customer satisfaction and loyalty. Sign language classes specific for medical terminology would be helpful for community pharmacists but simply learning a few phrases would only serve as temporary knowledge that may not be retained for their next encounter with a DHOH signing patient. Instead, the onus must be on healthcare systems, policies and educational institutions to accommodate the needs of DHOH patients.

Limitations

While the number of respondents was greater than the minimum sample size required, the response rate was low. Also, the sampling plan only targeted urban community pharmacies. They may have differing comfort-levels as they deal with DHOH from rural settings. Hence, the findings may not be representative of all community pharmacists and pharmacists practicing in tertiary care in Malaysia. Since participants could decide for themselves whether they would like to respond to the questionnaire, there is a potential of self-selection bias. There was no way to ascertain how community pharmacists identified DHOH patients. Previous research has shown that DHOH patients did not always disclose their sensory impairment.⁶⁴ Thus, there is a likelihood that the number of DHOH interactions could have been higher than reported. The authors acknowledge that DHOH individuals are culturally distinct where HOH patients may not be as reliant on sign language as compared to Deaf patients. Hence, the community pharmacists' comfort-levels in this study were unable to capture the nuances between the two groups. As the authors of this study did not define sign language in the survey, the respondents may have mistaken sign language

as common gestures. Although it would have been useful to mail the survey forms to all community pharmacies throughout the nation, budgetary constraints precluded additional collection.

CONCLUSIONS

This study provides a greater understanding of the comfort-levels community pharmacists possess when interacting with DHOH patients in their pharmacy practice. Results indicate that community pharmacists were generally comfortable serving DHOH patients. Despite this, there was a lack of significant findings in terms of comfort-levels and communication methods which may point towards other potential drivers for their methods of choice when interacting with DHOH patients. Findings also shed light on the current pharmacist-patient communication landscape for DHOH individuals in Malaysia which serve as primer evidence for future studies which explore healthcare access among this population in Malaysia. Lower comfort-levels were seen in community pharmacists who were interested in learning sign language. Future research is needed to explore approaches to increase comfort-levels among community pharmacists when serving DHOH patients. An expansion of this study should investigate the perspectives of the DHOH population as they seek pharmaceutical care.

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CONFLICT OF INTEREST

The authors declare that they have no conflict of interest.

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