

ORIGINAL ARTICLE

Investigating the Perception of Muslims With Hearing Impairment Towards Islamic Understanding and Practice

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ABSTRACT

Introduction: This study aims to investigate the relationship between; i) the perception of Islamic obligation and Islamic practice, ii) the perception of difficulty in understanding and practicing Islam and the perception of Islamic practice, iii) hearing loss threshold and the perception of difficulty in understanding and practicing Islam; and iv) to compare the perception of difficulty in understanding and practicing Islam between hearing aid users and non-hearing-aid users. **Method:** Seventy-seven (77) subjects with hearing impairment underwent audiological assessments and completed the '*Inventori Persepsi bagi Muslim yang Memiliki Masalah Pendengaran*' (IPM3P) questionnaire (consists of three domains- 'obligation', 'practice', and 'difficulty'). **Results:** Pearson correlation revealed a significant positive correlation ($p < 0.05$) between obligation and practice domain, and between difficulty and practice domain. A significant negative correlation was observed ($p < 0.05$) between hearing threshold and total difficulty domain score. The Independent T-test revealed a significantly greater difficulty in understanding and practicing Islam among non-hearing aid users compared to hearing aid users ($p < 0.05$). **Conclusion:** The study findings emphasized on; i) the importance to instill good perception of Islamic obligation via appropriate Islamic education, ii) the benefit of hearing aid in elevating the difficulty level in understanding and in practicing Islam, thus calls for prompt action to help in funding amplification for Muslims with hearing impairment

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INTRODUCTION

Hearing is one of the most vital body functions which enables human to listen, receive important input and to communicate with one's surrounding. Hearing loss is a result of deterioration in hearing function which causes someone to lose his or her normal hearing ability. Hearing loss can be defined as a hearing threshold of 25 dB or more affecting either one or both ears (1). Hearing loss is estimated to affect nearly 2.5 billion people globally in 2050 (1). The severity of hearing loss can range from mild to a profound level, and it can be

either conductive, sensorineural or mixed hearing loss in nature.

Impact of hearing loss (either congenital or post-lingual) could be detrimental on one's quality of life including the acquisition of a religious life. The main effect of hearing loss can be seen in the decline in ability to communicate with communicative partners such as spouse, colleague and society in general, which may lead to social isolation (2). Hearing loss was observed to be associated with reduced mental health, particularly in the young and middle-aged populations (3). High unemployment rate and rejection of job application were noticed among people with hearing loss (4). Most companies rejected their job applications as hearing-impaired workers have a high tendency to be absent due to mental distress and feeling tired to adapt with

the workload (4). Hearing loss in children may cause a large impact to language acquisition, and subsequently in education (5,6).

The effect of hearing loss is also extended to the ability to perform religious duties. A study conducted among students with hearing impairment in a Polytechnic in Malaysia showed that a majority of the hearing-impaired students have poor ability to perform basic prayers recitation in the Arabic language, in particular the *Al-Fatihah* (compulsory chapter to be read in a prayer) (7). Apparently, difficulty in memorising the recitations in prayer, and the lack of continuous teaching on the recitations in prayers were determined to be the main contributing factors to the poor performance. To explain further on the phenomena, teachers have reported that difficulty of the students in understanding abstract concept in Islamic teachings, poor memorisation skill, poor speech ability, improper classroom setting and environment to fit the teachings of hearing disabled children, as well as the unsupportive parents attitude, are among the challenges in the implementation of Islamic education for children with hearing impairment (8,9).

While most previous studies have investigated the impact of hearing impairment in daily functioning that focus on the quality of life, studies focusing on the impacts of hearing impairment on religious life, particularly in understanding and practicing Islamic teaching are still lacking. Previous studies that probed into the difficulties that were faced by the hearing impaired in performing Islamic practice were very limited, and were mainly focused on Quranic and Arabic prayers recitation, but not on other religious aspects such as attending religious ceremony, acquiring Islamic knowledge, playing leadership roles in Islamic community and in performing '*Da'wah*' (making an invitation to Islam) (7,10). Also, previous studies focused on the student and children population, and to our knowledge no studies have been conducted to understand the scenario in the adult population (7,9). Since lifestyle and needs may be different between the different age groups, the effect of hearing impairment towards understanding and practicing Islam among the adult population warrant further investigation. Moreover, no study has been conducted to understand if hearing amplification is beneficial for Islamic understanding and practice among Muslims with hearing impairment. Thus, this study aims to investigate the relationship between; i) the perception of Islamic obligation and Islamic practice, ii) the perception of difficulty in understanding and practicing Islam and the perception of Islamic practice, iii) hearing loss threshold and the perception of difficulty in understanding and practicing Islam; and iv) to compare the perception of difficulty in understanding and practicing Islam between hearing aid users and non-hearing-aid users. It was hypothesized that; i) the perception of Islamic obligation correlates with Islamic

practice, ii) the perception of difficulty in understanding and practicing Islam correlates with the perception of Islamic practice, iii) the higher the hearing loss threshold, the greater the difficulty faced by the subjects in understanding and practicing Islam; and iv) hearing aid-users perceive lesser difficulty in understanding and practicing Islam as compared to non-hearing-aid users.

The '*Inventori Persepsi Bagi Muslim yang Memiliki Masalah Pendengaran*' (IMP3P) questionnaire that was developed and validated was used in this study to investigate the perception of adults with hearing impairment towards various aspects of Islamic understanding and practice (11). Findings from this study are hoped to create awareness about the importance of religion among the hearing-impaired individuals. This study also highlights the difficulties that are faced by Muslim adults with hearing impairment in understanding and practicing Islam in their daily life. Understanding the difficulty and perception of individuals with hearing impairment will give an insight on how to facilitate the Islamic understanding and practice among those in this population.

MATERIALS AND METHODS

Research design and study population

This study is a cross-sectional study in which hearing tests have been conducted and the IMP3P questionnaire has been distributed to all the participants. Seventy seven (77) subjects who fulfilled the inclusion criteria: i) Muslim, ii) has hearing impairment with pure tone average of air conduction above 25 dB HL at 0.5kHz, 1kHz, 2kHz and 4 kHz, iii) aged above eighteen (18) years old, were recruited. Subjects who could not understand Bahasa Malaysia were excluded in this study.

Instrumentation

For preliminary testing, Heine Beta 200 LED F.O. Oscope was used for otoscopic examination, Grason Stadler GSI Tymptar Middle Ear Analyser was used for tympanometry and acoustic reflex testing, and AC 40 Clinical Audiometer was used for Pure Tone Audiometry testing. To investigate the perception of the subject with hearing impairment towards Islamic understanding and practice, the validated '*Inventori Persepsi Bagi Muslim yang Memiliki Masalah Pendengaran*' (IPM3P) questionnaire was used (12). This questionnaire is made up of thirty-six (36) items consisting three domains which are: i) 'obligation', ii) 'practice', and iii) 'difficulty' in understanding and practicing Islam. The items under obligation domain were mainly assessing the perception of Muslim with hearing impairment towards their obligation to understand Islamic teaching, and performing Islamic practice. The items under practice domain were designed to investigate the perception of Muslim with hearing impairment regarding their Islamic practice (i.e., how frequent they perform the Islamic

practice). On the other hand, the items under difficulty domain were designed to assess the difficulty level faced by the subject in understanding and practicing Islam. Sixteen (16) items are negative statements while twenty (20) items are positive statements. The Likert's Scale was used for the scoring method. For Domain 'obligation' and 'difficulty', response is rated as (1) '*sangat tidak setuju*' (totally disagree), (2) '*tidak setuju*' (disagree), (3) '*tidak pasti*' (not sure), (4) '*setuju*' (agree), to (5) '*sangat setuju*' (totally agree). For Domain perception towards practice, the response is rated as (1) '*sangat tidak kerap*' (very rarely), (2) '*tidak kerap*' (Rarely), (3) '*tidak pasti*' (not sure), (4) '*kerap*' (frequent), to (5) '*sangat kerap*' (very frequent).

Procedure

Ethical clearance was obtained from the IIUM Research Ethics Committee (IREC 2018-265). There were two stages in this study; i) preliminary testing, and ii) questionnaire distribution. Preliminary testing included history taking, tympanometry testing, Pure Tone Audiometry (PTA) testing and Acoustic Reflex testing. The results were crucial in order to determine whether the subjects had hearing loss and fulfilled the inclusion criteria. The otoscopic examination was conducted to identify any abnormalities of the external auditory canal, evidence of surgery, foreign body and collapsing ear canal. The tympanometry test was conducted to identify the function of the middle ear status. Pure Tone Audiometry was conducted to determine the subjects' hearing level. This procedure was carried out using modified Hughson-Westlake method for frequencies of 250Hz, 500Hz, 1kHz, 2kHz, 4kHz and 8kHz (13). The subject with the hearing level of more than 20dBHL at any of the tested frequencies was considered as hearing-impaired and thus fulfilled the inclusion criteria.

For the second stage, the '*Inventori Persepsi Bagi Muslim yang Memiliki Masalah Pendengaran*' (IPM3P) was distributed to the subjects. The subjects were required to fill in the questionnaire by choosing the most appropriate response, rated in a five-Likert scale for each of the statements. The score for each subject was calculated and analysed based on the objectives of the study.

Data analysis

For the positive statement, the score had been given according to the rating of the Likert's scale (as described in Instrumentation). Meanwhile, reverse scoring was applied for the negative statement. The total score for each domain ('obligation', 'practice' and 'difficulty') was calculated, and described as mean and standard deviation in Table I. The higher mean score of each domain showed a better perception of obligation, the higher the perception of practice and the higher the perception of difficulty, that were faced by the hearing-impaired people towards understanding and practicing the Islamic teaching. All the collected data was analysed

using the SPSS version 20 software.

Table I: Mean (\pm s.d.) of total score for perception of obligation, perception of practice and perception of difficulty domain.

IPM3P domain	Total score Mean \pm s.d
Perception of obligation	54.97 \pm 6.82
Perception of practice	50.71 \pm 7.43
Perception of difficulty	45.97 \pm 11.47

The average PTA threshold was taken from an average of better ear air conduction threshold at 500Hz, 1 kHz, 2 kHz, and 4 kHz. Pearson correlation analysis was used to find the correlation between; i) the perception of Islamic obligation and Islamic practice, ii) perception of difficulty in understanding and practicing Islam and the perception of Islamic practice, iii) average hearing loss threshold and the perception of difficulty in understanding and practicing Islam. All assumptions for the Pearson correlation analysis were met (random sampling, all observations were independent and the relationship between two variables had a joint normal distribution).

In comparing the perception of difficulty between subjects who wore and those who did not wear hearing aids, the independent sample T-test was used for the analysis. All the assumptions for T-test (random sampling, independent variable, normality assumption) were met except for the equal variance assumption. The Levene's test revealed a p-value of <0.05, showing unequal variance. Thus, the analysis took the consideration of the unequal variance and the result was derived from the unequal variance assumption.

RESULT

Correlation between perception of Islamic obligation and perception of Islamic practice.

To understand the relationship between perception of Islamic obligation and perception of Islamic practice, the correlation between the total obligation domain score and the total practice domain score was determined. Figure 1(a) shows the scatter plot for the total practice domain score against the total obligation domain score among the subjects. Pearson correlation analysis revealed a positive moderate significant correlation ($p < 0.01$, $r: 0.49$) between the perception of Islamic obligation score and perception of Islamic practice score among the subjects. This result suggested that the clearer the perception of the subjects regarding the Islamic obligation, the more they perform the Islamic practice. This finding was consistent with this study's hypothesis which predicts a positive relationship between perception of the subjects regarding the Islamic obligation and their Islamic practice.

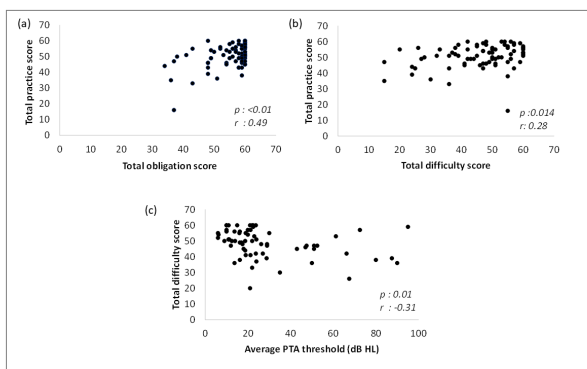


Figure 1: Different scatter plots for correlation between; (a) perception of Islamic obligation and perception of Islamic practice, (b) perception of difficulty in understanding and practicing Islam and perception of Islamic practice, (c) average of PTA threshold and perception of difficulty in understanding and practicing Islam.

Correlation between perception of difficulty and practice.

To understand the relationship between perception of Islamic obligation and perception of difficulty faced by the subjects, the correlation between the total difficulty domain score and total practice domain score was determined. Figure 1(a) shows the scatter plot for the total difficulty domain score against the total practice domain score among the subjects. Pearson correlation analysis revealed a small positive significant correlation ($p: 0.014, r: 0.28$) between the perception of difficulty score and perception of practice score among the subjects. This result suggested that the more the difficulty faced by the subjects in understanding and practicing Islam, the more they practiced and understands Islam. The possible explanation of the result and the implication towards theoretical framework of IPM3P will be discussed in discussion.

Correlation between Average Threshold of Pure Tone Audiometry (PTA) and Perception of Difficulty.

To determine the relationship between the severity of hearing loss and perception of difficulty in understanding and practicing Islamic teaching, the correlation between the average PTA threshold and the total difficulty domain score was determined. Figure 1(b) shows the scatter plot for the total difficulty domain score against the average threshold of pure tone audiometry among the subjects. Pearson correlation analysis revealed a significant negative fair correlation ($p: 0.01, r: -0.31$) between the average PTA threshold and the perception of difficulty score among the subjects. This result showed that the higher the average PTA threshold, the lesser the difficulty that was faced by the subject to understand and practice Islamic teaching. This finding was inconsistent with this study’s hypothesis, and a possible explanation for this will be discussed in discussion.

Perception of Difficulty towards the Subjects Who Wear and Who Do Not Wear the Hearing Aid

To compare the perception of difficulties to understand

and practice Islamic teaching between hearing aid users and non-hearing-aid users, the independent T-test was conducted. The T-test analysis showed that there was a significant difference in the perception of difficulties between hearing aid users and non-hearing-aid users (refer Table II). The result showed that non-hearing-aid users faced a significantly greater difficulty compared to hearing aid users. This finding was consistent with this study’s hypothesis.

Table II: Comparison of total score for difficulty domain between hearing aid users and non-hearing-aid users using independent T-test

	Hear- ing aid users (n=17)	Non- hearing- aid users (n=60)			
	Mean ± s.d.	Mean ± s.d.	Mean difference (95% CI)	T-Stat- istic (df)	p-value
Total score for dif- ficulty domain	39.35 ± 13.72	47.85± 10.12	-8.49706 (-15.93, -1.07)	-2.378 (21.178)	0.027
Average hearing thresh- old	56.14 ± 8.25	23.01 ± 2.10			

DISCUSSION

The theoretical framework of the IPM3P that was based on the Theory of Planned Behavior (TPB) by Ajzen (14) was tested by looking into the correlation between the domains. Figure 2 shows the relationship between the Theory of Planned Behavior by Ajzen (14) and the framework of the IPM3P domains development. The perception towards Islamic obligation and the perception of difficulties faced by Muslims with hearing impairment to understand and to practice Islam (which represent attitude and perceived behavioral control in TBP respectively) were hypothesized to influence the intention to understand and to practice Islam. This intention subsequently influences the Islamic understanding and practices (representing behavior in TPB). It is difficult to measure the intention to practice and to understand Islam. Therefore, the direct relationship between the perception of obligation and practice, and the relationship between the perception of difficulty and practice were investigated in this study.

Findings from this study were in line with the hypothesis that was based on the Theory of Planned Behavior by Ajzen (14) which showed a moderate significant correlation ($p: < 0.01, r: 0.49$) between the perception of Islamic obligation and the perception of Islamic practice among the subjects. The result showed that the clearer the perception of obligation, the higher the Islamic practice of the subjects. Since a bivariate Pearson’s correlation was used to analyze the data, the result

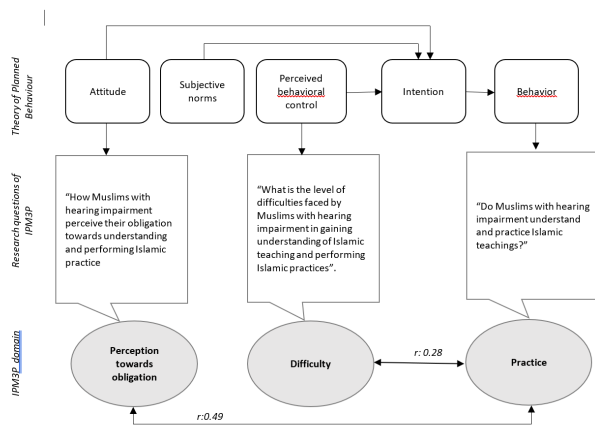


Figure 2: The theoretical framework of IPM3P development. Figure was adapted from Fig. 1 in Rahmat et al. (12)

could also be interpreted in the opposite direction, i.e. the higher the Islamic practice, the better the perception of Islamic obligation among the subjects.

In addition, the findings from this study also revealed a significant small positive correlation ($p: 0.014$, $r: 0.28$) between the difficulty and the practice domains. This result may seem contradictory to the hypothesis, which expected a negative correlation observed between the difficulty and the practice domains. The more one perceives Islamic practices to be difficult, the lesser they perform those Islamic practices. In contrary, findings from this study suggested that the more the subjects faced difficulties in understanding and practicing Islam, the more Islamic practices they performed, or vice versa. However, the result would be sounder if it is interpreted in the opposite direction, i.e., as more Islamic practices were performed by the subjects, the more challenging the difficulties they faced due to their hearing impairment. Looking at correlation strengths, the relationship between the obligation and the practice domains yielded a higher correlation coefficient ($r: 0.49$) as compared to the relationship between the difficulty and the practice domains ($r: 0.28$). The higher value of the correlation strength between the obligation and the practice domains suggested that the perception of obligation had a much higher influence on practice as compared to the difficulty level.

Looking at the overall relationships between the domains of IPM3P, it can be suggested that the higher the perception of obligation to perform Islamic practices, the more the subjects performed those practices. As they performed more Islamic practices, they struggled more in performing those practices due to their hearing impairment. This result indicated the importance of having a good perception of obligation towards Islamic practices and Islamic understanding, as perception was highly correlated with carrying out Islamic practices. One of the main ways of instilling good perceptions of obligation towards Islamic practices and Islamic understanding among Muslims with hearing impairment

is through providing an effective Islamic education (8).

Several approaches that can be used to ensure Muslims with hearing impairment have good Islamic input are discussed in a review by Rahmat et al. (15) Among the established approaches in imparting Islamic knowledge among those in the hearing-impaired population are the FAQIH method and the IT-facilitated technique (15,16). In the FAQIH method, several techniques, including color technique and hand sign technique, are used by the hearing-impaired population to learn Arabic letters, Tajwid knowledge and even the recitation of Al-Quran. This technique may ease the difficulties faced by the hearing-impaired population in understanding and practicing Islam. In addition, the IT-facilitated learning incorporating video elements may also be used to help Muslims with hearing impairment to better understand Islamic teachings. Appropriate knowledge on Islamic teachings may help Muslims with hearing impairment to improve their perception of obligation towards Islamic understanding and practice, which subsequently may increase their Islamic practice.

Meanwhile, in investigating the relationship between the severity of hearing loss and perception of difficulty that were faced by hearing-impaired subjects to understand and practice Islamic teaching, it was hypothesised that the higher the hearing threshold, the greater the difficulty that was faced by hearing-impaired Muslims in understanding and practicing Islam. This hypothesis was based on findings from a previous study showing that an increase in the severity of hearing loss resulted in the increased of difficulties to carry out daily routine and affect the daily performances of individuals who are with hearing impairment (5). However, a significant negative correlation ($p: 0.01$, $r: -0.31$) between the average PTA threshold and the perception of difficulty score among the study's subjects contradicts the hypothesis and previous findings. This study found that the higher the hearing threshold (the more severe the hearing loss), the lesser the difficulties that were faced by hearing-impaired subjects to understand and practice Islam. This result may be explained by the usage of hearing aids among subjects who had higher hearing threshold. According to the data of this study, the subjects who wore hearing aids had higher mean hearing threshold (56.14 ± 8.25) compared to subjects who did not wear hearing aids (23.01 ± 2.10). The data suggests that there was a possibility that subjects who had higher hearing threshold faced less difficulties to understand and practice Islam due to the use of hearing aids. This explanation was consistent with this study's finding in 'Perception of Difficulty towards the Subjects Who Wear and Who Do Not Wear the Hearing Aid' which shows that hearing aid users faced significantly lesser difficulties in understanding and practicing Islam in comparison to non-hearing aid users (refer Table II). Therefore, the result of this study strongly suggests that the hearing aid seems beneficial in alleviating the

difficulties that are faced by hearing-impaired subjects in understanding and performing Islamic practice. This finding is consistent with a previous study showing that the hearing aid has helped to reduce the difficulties that are faced by hearing impaired subjects in performing their daily activities (17).

Although hearing aids are proven beneficial in facilitating Islamic understanding and practice, the data in this study have shown that the usage of hearing aids among the subjects who have been recruited is still low. Out of seventy-seven (77) subjects, only seventeen (17) of them wore hearing aids. This might happen due to the lack of awareness about the importance and benefit of hearing aids or amplification for hearing-impaired individuals. To increase the awareness among the subjects, the audiologist has to play an important role in encouraging the use of hearing aids as well as educating the hearing-impaired population on the importance of the hearing aid. This will help in facilitating communication among those in the hearing-impaired community. Another possible reason for low hearing aids usage was financial problem which may lead to the difficulty in getting treatment for hearing loss. According to the record of this study, only 14.29% of the participating subjects have received funding to treat their hearing loss. The low funding rate could indicate two things; either: i) the subjects can afford treatment up to the extent that they did not need any external funding to treat their hearing loss, or ii) there was lack of funding provided by funding agencies to facilitate treatment for hearing-impaired individuals.

Hearing is an important sense that is needed in attaining good faith and in performing Islamic obligation (15). The provision of assistance and treatment for people with hearing impairment has been argued to be a collective Islamic responsibility (15). At the government level, the responsibility includes: i) providing good facilities that can ease the hearing-impaired subjects to learn about Islam, and ii) providing good financial support to ensure every hearing-impaired person has the opportunity to get funding for treating hearing loss (e.g. funding for hearing aid or cochlear implant). Zakat institution for example should play a pro-active role to facilitate the process of funding to ensure that the welfare and support system provision reaches all Muslims with hearing impairment. At the community level, the Muslim with hearing impairment could be assisted by: i) providing a supportive environment for the Muslim with hearing impairment to function in daily activities, ii) providing an inclusive environment where the Muslim with hearing impairment can participate within a community (e.g. do not exclude them from holding any position in the Islamic organisation), iii) avoiding discrimination among Muslims with hearing impairment whenever they seek for help (15). Besides, Muslim audiologists should play an active role to ensure that Muslims with hearing impairment are aware of

the importance of hearing aids usage in reducing the difficulties to understand and perform Islamic practices. This could be done through hearing aid counseling which incorporates the Islamic values and awareness on the benefit of using the hearing aid to facilitate Islamic practice such as to perform Quranic recitation, and to attend religious talk. Finally, the biggest responsibility falls upon the individual himself or herself. Muslims with hearing impairment hold the responsibility to seek for treatment and to actively find the most effective way to learn about Islamic teaching so that they are able to perform their duties as a good Muslim.

CONCLUSION

In conclusion, this study showed that: i) Perception of Islamic obligation highly influenced the Islamic practice, ii) as subject performed more Islamic practices, they struggled more in performing those practices due to their hearing impairment, iii) the higher the average hearing threshold, the lesser the difficulty that was faced by the subjects in understanding and practicing Islam, iv) subjects who wore hearing aids perceived lesser difficulties in understanding and practicing Islam as compared to those who did not wear hearing aids. Besides, this study also calls for the urgent need to help in funding amplification among hearing-impaired Muslims as hearing aids usage may facilitate Islamic practice. This study also suggests the role of every party (i.e., government, community, Muslim Audiologist, and the hearing-impaired individuals themselves) in assisting the Muslims with hearing impairment in understanding and practicing Islamic teaching.

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