Development of hearing impairment inventory for religious duties of Muslim adult

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ABSTRACT

Objective: This study is a preliminary work to develop a Malay version questionnaire named '*Inventori Persepsi bagi Muslim yang Memiliki Masalah Pendengaran* (IPM3P)' to assess the perception on Islamic understanding and practice among Muslim adults with hearing impairment.

Methods: The scale development involved three phases: i) generation of domains based on the literature, ii) generation of sub-domains based on literature review and Islamic panel survey, and iii) generation of items.

Results: Preliminary version of IPM3P consists of 59 items was produced, representing three domains: Obligation (18 items), Practice (21 items), and Difficulty (20 items), and seven sub-domains ('*Ibadah*', '*Aqidah*', '*Muamalat*', '*Tasawwuf*', '*Akhlak*','*Da'wah*', and '*Sirah*').

Conclusion: The preliminary version of IPM3P needs to be psychometrically tested. This pioneering study may become an impetus towards more research pertaining to understanding the effect of hearing loss towards religious life in the future in Malaysia.

KEYWORDS:
Muslim adults with hearing impairment, Malay questionnaire, Islamic understanding and practice, hearing loss and religious life

INTRODUCTION

Religion and spirituality is perceived to significantly contribute towards good quality of life.[1] Adherence to religion and spirituality elements has been determined to be a key factor in developing a good coping mechanism among cancer patients.[2] The importance of the religious element is further substantiated by meta-analysis studies showing that the religious belief and practice have a significant effect on the avoidance of criminal behaviour and can significantly improve the values and behaviours of the offenders.[3,4] In addition, parents who have children with disability have found that the reliance on God has given them patience and inner peace to overcome misfortunes in life.[5] All of the findings are in line with the core teachings of Islam which emphasise on the role of Islam in ensuring a good life in this world and in the hereafter (The Quran: 16: 97).[6] Based on the above mentioned facts, we recognised the importance of imparting the religious elements, specifically imparting the Islamic values to our hearing impaired-Muslim patients in order to assist them in coping with their hearing disability. Hence, there is a need to design a scale that could serve as a tool to measure the perception of Muslims with hearing impairment related to the performance of their religious duties. This scale can later be used to assist the clinician to design a rehabilitation strategy which imparts the Islamic values among the Muslim patients with hearing impairment. The development of such scale would be the main focus of this study.

Albeit the importance of religion in life, the acquisition of religious input and knowledge, and religious or Islamic practice may be hindered in people who have hearing impairment. A few studies have shown that hearing impaired Muslim children faced difficulty in reading and reciting the Quran which is the central religious text of Islam.[7,8] In addition, previous studies that have been conducted on students showed that Muslim students with hearing impairment had difficulty in reciting basic recitation during payers, mainly due to poor ability to memorisise.[7,9] These studies have shown that Muslim students with hearing impairment faced difficulty in understanding religious teaching that involved abstract thinking.[7] All these findings showed that the hearing impaired population (specifically teenagers and children) may be lagging behind in terms of Islamic practice as compared to their peers with normal hearing.[8,9] This could be due to improper delivery of Islamic input that caters to the learning needs of children with hearing impairment.[7,10]

There are few studies looking at the aspect of understanding difficulties that are faced by the Muslims with hearing impairment in performing Islamic practices. The available few studies mainly focused on the recitation of the Quranic and Arabic prayers, but not on other religious aspects such as attending religious ceremony, acquiring Islamic knowledge, playing leadership roles in the Islamic community and performing '*Da'wah*' (see definition in table I).[8,9] To our knowledge previous studies have also focused on understanding the difficulties that are faced by those with hearing impairment in religious practice and understanding among the students and children, but no studies have been conducted to understand the scenario in adults.[7-10] Since lifestyle and needs may differ between different age groups,

the effects of hearing impairment towards understanding and practicing Islam among the Muslim adults warrant further investigation. To our knowledge, no related studies have been conducted to understand the impact of hearing loss on religious life among adults, partly due to the absence of tools to investigate the perception of Muslim adults with hearing impairment on their Islamic understanding and practice. Thus, the aim of this study is to develop a Malay version of hearing impairment inventory for religious duties for Muslim adults: *'Inventori Persepsi bagi Muslim yang Memiliki Masalah Pendengaran'* (IPM3P), to assess the Islamic understanding and practice among hearing impaired adults.

Overview of Theoretical framework of IPM3P Development
The objective of the IPM3P development was to investigate the perception of Muslim adults with hearing impairment towards their Islamic understanding and practice. To achieve this objective, the IPM3P was designed to investigate the perception of Muslims with hearing impairment in understanding their obligations as Muslims, and how they perceived their practice as a Muslims. Three main components; domain, sub-domain and items; were generated to produce the first preliminary version of IPM3P. The generation of three IPM3P sub-domains which has been based on the Theory of Planned Behaviour which links one's belief and behaviour.[11] The basis of referring to the Theory of Planned Behaviour in developing the domain of IPM3P is further elaborated in phase one in the Methodology section. Under each domain, the sub-domains that were related to the basic areas of Islamic understanding and practice were generated. The generation of the sub-domains has been conducted through a thematic analysis of the literature review and an Islamic panel survey, is discussed in Phase Two. The generation of the sub-domains which was thought to be necessary in order to include a wide area of Islamic understanding and practice under each domain. Items for each sub-domain under its respective domain were developed based on findings of literature review as well as the responses from the Islamic panel survey. The overview of the theoretical framework of IPM3P development is illustrated in Figure 1. A total of 59 items were derived for the initial development of IPM3P (preliminary version of IPM3P) but was later modified and shortened to become 36 items (12 items for each 'obligation', 'difficulty' and 'practice' domain) following the series of psychometric evaluations. This paper will mainly focus on the development of the preliminary version of IPM3P (59 items), while the psychometric evaluation and the finalisation of IPM3P will be discussed in a separate publication.

MATERIALS AND METHODS
There were three (3) phases involved in development of the IPM3P; i) generation of domain, ii) generation of sub-domain, and iii) generation of items. The section below explains the methodological approach of each phases.

Phase One: Generation of domain and the theoretical framework
The IPM3P was formulated based on the Theory of Planned Behaviour. According to the theory, one's intention to perform (or not to perform) a behaviour is the key factor that influences that action.[11] Accordingly, the tendency of Muslims with hearing impairment to perform the Islamic practice and obligation strongly depends on their intention to perform (or not to perform) the practice and obligation. According to the theory, the three factors that have been shown to influence intention are; i) attitude, ii) subjective norm, and iii) perceived behavioural control.[12] Attitude is referred to as a favourable or unfavourable evaluation to do the actions. Subjective norm is referred to the person's beliefs that specific individuals or groups think whether he/she should or should not perform the behaviour. Meanwhile perceived behavioural control is the feeling of ease or difficulty in performing a behaviour. The derivation of domain of IPM3P was based on the aforementioned factors that influence intention and behaviour.

The three domains of IPM3P are as follows: i) *'Persepsi Terhadap Tanggungjawab'* ('Perception towards obligation', denoted as 'obligation' in this paper), ii) *'Perlaksanaan'* (Practice), and iii) *'Kesukaran'* (difficulty). The derivation of each domain has its own specific justification in relation to the theory of planned behaviour. Figure 1 illustrates how the Theory of Planned Behaviour influences the development of domain in IPM3P, and the relation to the question that is intended to be answered in IPM3P. While it is difficult to measure one's intention to practice and understand Islam, the attitudes towards Islamic practice and understanding can be measured by measuring the perception of obligation towards Islamic understanding and practice. According to the Theory of Planned Behaviour, attitudes towards an action or behaviour is determined by dominant beliefs about that action or behaviour. For example, if a Muslim believes that prayer is obligatory for a Muslim and is required by God, he or she will at best find a way to perform the prayer regardless of any circumstances (time constraint, disability, e.g. hearing or physical impairment) that he or she may face. In other words, one's perception towards an obligation of Islamic understanding and practice hypothetically will determine the attitudes towards the Islamic practice, which subsequently influences the intention, and hence his or her Islamic practice and behaviour. This is the basis of deriving the first domain for IPM3P, which is the *'Persepsi Terhadap Tanggungjawab'* (Perception towards obligation, denoted by 'Obligation'), and the second domain which is 'Perlaksanaan' (Practice).

In other words, the questionnaire is designed to investigate "How Muslims with hearing impairment perceive their obligation towards understanding and performing Islamic practice (obligation domain)?" and "Do Muslims with hearing impairment understand and practice Islamic teaching (Practice domain)?". The third domain in the IPM3P is *'Kesukaran'* (difficulty) which has been derived based on two basis, which are: i) to investigate the level of difficulty that is faced by the Muslims with hearing impairment in different basic areas of Islamic understanding and practice; ii) to investigate whether perceive behavioural control (feeling of ease or difficulty in performing Islamic practice) could be another factor that influences intention towards a behaviour and subsequently determines that behaviour. Thus the 'difficulty' domain has been designed to answer, "What is the level of difficulty that is faced by Muslims with hearing impairment in gaining an understanding of Islamic teaching and in performing Islamic practice?"

Phase Two: Generation of sub-domain
As explained earlier, sub-domains were derived in order to cover a wide area of basic principles of Muslim religiosity, and to further specify basic components that should be understood and practiced as Muslims. These basic principles and components were intended to be assessed in Muslims with hearing impairment. To generate the sub-domain, two sources were referred: i) the literature review, and ii) input from the survey on Islamic panel.

Participants
A total of 12 individuals were identified as the Islamic panel (two university lecturers who hold PhD in Islamic studies, three secondary school religious teachers who hold Bachelor degree in Islamic studies, three workers and four students who are actively involved in Islamic society activities or holding any position in Islamic society), aged between 24 to 55 years old participated in this survey. The selection of panellists from different backgrounds was to ensure that the opinions collected through the survey were from panellist who were involved in various Islamic background. The involvement of different adult age groups among the panellists was to resemble different age group of the real hearing impaired Muslim adults. All participants needed to be able to communicate, read and write in Bahasa Melayu as the survey was conducted in Bahasa Melayu.

Procedure
a) Literature review
Literature review concerning the Islamic worldview and Muslim religiosity were identified.[13,14] The main components forming the Islamic worldview and Muslim religiosity model were identified from the review. These main components is compared and merged later to the ones from the survey on Islamic panels, to form the sub-domain of IPM3P.

b) Survey
A simple Bahasa Melayu written open ended survey was given to the panellists. The panellists were asked to list down the basic Islamic components that a Muslim should understand and practice in order to be good Muslims. The written survey was physically distributed to ten members of the panellists as they were reachable, while the other two panellists were contacted via email. A standardised instruction was given to all panellist to ensure that they had the same understanding regarding the survey. All the responses were recorded and were analysed using thematic analysis to derive the domain for the questionnaire. The final sub-domains were produced upon agreement during a review by an expert committee.

Data analysis
A thematic analysis following the steps proposed by Braun and Clarke (2006) was conducted to analyse the responses from the survey as well as the literature findings, which eventually generated the sub-domains of IPM3P.[15] Firstly, the responses that were given by the Islamic panels were familiarised and repeatedly read in an active way. After that, features of responses that appear more obvious were coded into 'unit analysis'. All unit analysis that shared a common theme were classified under a proposed potential sub-domain. All potential sub-domains were reviewed by an expert committee (consisting of authors and one independent

Islamic expert) to ensure that all the coded unit analysis were mapped into the potential sub-domain. Some of the proposed potential sub-domains changed after the review and the final reviewed sub-domains were identified based on the consensus of the expert committee. The categorisation of the survey responses and literature review findings into seven specific sub-domains were based on the definition listed in Table I.

Phase Three: Generation of items
Generation of items was done based on the findings from a rapid review of literature search and responses from the survey (described in Phase Two). Items were generated for each sub-domain under each respective domain.

Procedure
Rapid review method was carried out to investigate the perception on obligation, practice and difficulties in understanding and practicing Islam among the hearing impaired population that were reported in the previous literature. The literature search was conducted using several free online databases such as PubMed, Google scholar, Science direct, IIUM Database, freefullpdf, Web of Science, Medline, ProQuest and google book, using "effects of hearing loss to religion", "hearing impaired adult and religious life", "hearing loss and religion", "hearing loss and religious life" as key phrases. Findings from the review were categorised into the predetermined domains and sub-domains. These findings were used in generating the items under the relevant domain and sub-domains.

Apart from finding of the rapid literature review, individual responses from the Islamic panel survey (derived from Phase Two) were also used to generate items under the respective sub-domain and domain. The items were generated with a consensus from the research team. Table III specify the example of generation of an item in IPM3P, specifically item no.1 under 'Obligation' domain and *'Ibadah'* sub-domain. The item was generated based on findings from the rapid literature review and Islamic panel survey. Five Likert's Scale was used for the scoring method.

RESULTS
Phase One: Generation of domain
The derivation of domain for IPM3P was based on the Theory of Planned Behaviour. Three domains were generated: i) Obligation, ii) Practice, and iii) Difficulty. The theoretical framework for domain derivation can be referred in the earlier section.

Phase Two: Generation of sub-domain
From the literature review, Kraus and Hamzah (2010) have suggested a comprehensive model for measuring Muslim religiosity that is mainly based on the Islamic worldview and *tawhidic* paradigm which mainly covers the concept of *'Aqidah'*- believe in oneness of God.[13] This Islamic worldview should be manifested in religious personality, in the act of worship *('Ibadah')*, Islamic character *('Akhlak')* and interaction with other human beings *(Muamalat)*. Thus from the literature review four basic components of Muslim religiosity were identified: i) *'Aqidah'*, ii) *'Akhlak'*, iii) *'Ibadah'*, and iv) *'Muamalat'*.

Table I: Final reviewed sub-domain and its definition

Sub-domain	Definition
'Aqidah'	Article of faith, belief or creed. Something that one has a firm belief in and in this context, it refers to Islamic belief.[21]
'Ibadah'	Submission or worship, including speech and actions with the purpose of seeking Allah's pleasure.[21]
'Akhlak'	Practice of virtue and moral values.[21]
'Muamalat'	Transactions or dealings involves human beings and other creation.[21]
'Tasawwuf'	Tasawuf teaches one to purify one`s inner side of the life, improve one`s moral character, and build up one's inner and outer life in order to attain perpetual pleasure of Allah, resulting in a state of perpetual bless. Its subject matter is the purification of the soul, and its end or aim is the attainment of eternal satisfaction and blessedness.[22]
'Da'wah'	The call to Islam (to invite people to Allah or to Islam).[21]
'Sirah'	The biography or scholarship of the life of Prophet Muhammad.[21]

Table II: Relevant literature search findings

No	Study	Findings	Domain	Sub-domain
1	Ghadim et al.[17]	Perception of family members which believe that hearing impaired child does not necessary to receive the same level of education as normal children do particularly Islamic education and reciting the Quran.	Obligation	*Ibadah*
		Schools are not familiar with the methods of teaching the Quran to the deaf and there are not many teachers who are expert in this area.	Difficulty	*Ibadah*
2	Abdullah & Ali[16]	The mastery of prayer among hearing- impaired- student is at a weak level due to cognitive disability, weak language proficiency and the limitation of communication of hearing-impaired students to the study of religion.	Difficulty	*Ibadah*
3	Awang et al.[7]	Students could not read Al-Quran and the teaching of component in recitation Al-Quran cannot be conducted due to their difficulty in communication.	Difficulty	*Ibadah*
		Hearing impaired students could not understand the content of the *Fardhu Ain* class	Difficulty	*Ibadah*
		The students may easily forget what they have learned due to poor memorising ability.	Difficulty	*Ibadah*
		Hearing impaired students do not want to go to Fardhu Ain class as they perceive the class is not interesting	Practice	*Ibadah*
		Hearing impaired students faced difficulties to understand abstract information and the terms in Islam. Abstract thinking includes matter related to faith (*'Aqidah'*) and *'Sam'iyyat'*	Difficulty	*Aqidah*
4	Harun[9]	100% of respondents in Politeknik agree that they are easily forget the basic recitation in prayers	Difficulty	*Aqidah*
		100% of respondents in Politeknik performed their prayers with physical movement only, not including recitation	Practice	*Ibadah*
5	Saari, Umat and Mat[8]	Hearing impaired children poorly recognize the basic Al-Quran phonemes.	Difficulty	*Ibadah*
		Hearing impaired children admitted their difficulties in producing Al-Quran phonemes.	Difficulty	*Ibadah*

Table III: Example of items generation based on findings from literature search and Islamic panel survey for sub-domain Ibadah under 'perception on obligation' domain

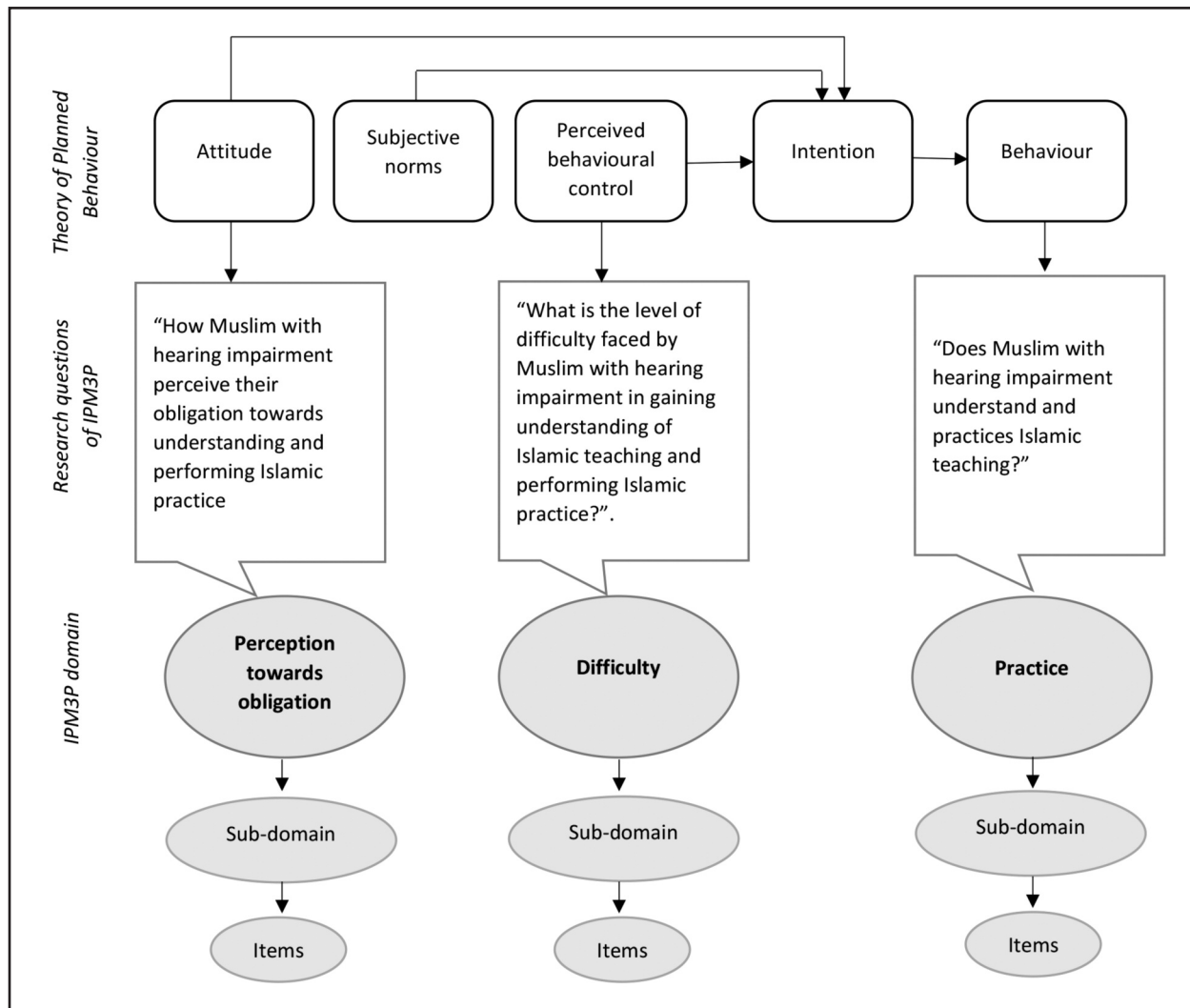| DOMAIN: PERCEPTION TOWARDS OBLIGATION						
Sub-domain	Item number	Findings	Analysis unit	Source (Reference) Version'	Generated Items *'Bahasa Melayu*	Statement (+/-)
Ibadah	1	Perception of family members which believe that hearing impaired child does not necessary to receive the same level of education as normal children do particularly Islamic education and reciting the Quran.	Gaining knowledge	Literature review (Ghadim et al).[16]	***I must learn Islamic knowledge as other Muslims do*** *'Saya perlu mempelajari ilmu agama Islam seperti orang lain'*	+
		Gaining knowledge about Fadhu Ain and Fardhu Kifayah and understand its importance	Gaining knowledge on Fardhu Ain and Fardhu Kifayah	Survey (Panellist A2)		
		Attending class on various discipline	Attending class	Survey (Panellist A8)		

Fig. 1: Theoretical framework of IPM3P development.

A total of 182 responses were gathered from an Islamic panel survey (*'Aqidah'*: 39, *'Ibadah'*: 77, *'Muamalat'*: 25, *'Da'wah'*: 4, *'Akhlak'*:16, *'Tasawwuf'*:19, *'Sirah'*: 2). A thematic analysis of the survey responses shows partly similar basic components that should be mastered as a Muslim to that from the literature review, with six basic components (*'Aqidah'*, *'Ibadah'*, *'Muamalat'*, *'Da'wah'*, *'Akhlak'*, *'Tasawwuf'*) that should be practiced, and seven basic components (*'Aqidah'*, *'Ibadah'*, *'Muamalat'*, *'Da'wah'*, *'Akhlak'*, *'Tasawwuf'*, *'Sirah'*) that should be understood by a Muslim. Thus taking into account the findings from the literature review and the survey, six sub-domains (*'Aqidah'*, *'Ibadah'*, *'Muamalat'*, *'Da'wah'*, *'Akhlak'*, *'Tasawwuf'*) were used to generate the items under the 'practice' domain, and seven sub-domains (*'Aqidah'*, *'Ibadah'*, *'Muamalat'*, *'Da'wah'*, *'Akhlak'*, *'Tasawwuf'*, *'Sirah'*) were used to generate the items under the 'obligation' and 'difficulty' domain during the initial stage of IPM3P development. Details on the generation of items will be discussed in the following section.

Phase Three: Generation of items
Five relevant studies were identified from the rapid literature review.[7–9,16,17] The findings from the rapid review were mapped into the pre-determined domain ('Obligation', 'Practice' and 'Difficulty'), and sub-domain (*'Aqidah'*, *'Ibadah'*, *'Muamalat'*, *'Da'wah'*, *'Akhlak'*, *'Tasawwuf'*, *'Sirah'*). Findings on perception of obligation showed that parents perceived that the hearing impaired children were less obliged to learn Islam.[17] While findings for domain practice showed that Muslim students with hearing impairment did not practice *'Ibadah'* completely (missing *'Fardhu ain'* class and performing prayers with physical movement only, not including recitation).[7,9] Most of the study showed that the hearing-impaired population had difficulties in the sub-domain *'Ibadah'* such as in performing prayers, reciting Al-Quran and attending *'Fardhu ain'* classes.[7–9,16,17]

A total of 59 close-ended items were derived for the first preliminary draft of IPM3P; 18 items for perception towards obligation domain, 20 items for practice domain, and 21 items for difficulty domain. These items were made from a

total of 36 positive and 23 negative statements. For domain 'perception towards obligation' and 'difficulty', the 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 '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). The first preliminary draft of IPM3P (59 items) underwent further psychometric evaluation, which will be described in our next publication.

DISCUSSION

The aim of this study was to develop a tool (IPM3P) to measure the perception of Muslim adults with hearing impairment towards their Islamic understanding and practice. The focus of an adult group was merely due to the absence of study in understanding the process in the adult population, as compared to the few studies that had been conducted among Muslim children with hearing impairment.[8,10] To understand the behaviour or the action of Muslims with hearing impairment regarding Islamic understanding and practice, the theoretical framework of the development of IPM3P is based on the Theory of Planned Behaviour which suggests a few factors affecting the behaviour of an individual.[11] The translation of the Theory of Planned Behaviour into the theoretical framework of IPM3P is illustrated in Figure 1. To confirm the theoretical framework of IPM3P, further study is needed to understand: i) the relationship between perception of obligation and practice as a Muslim among adults with hearing impairment, ii) the relationship between the level of Islamic practice and the level of difficulty in understanding Islamic teaching and performing Islamic practice among Muslim adults with hearing impairment.

The inclusion of the sub-domain that was gathered from the response of an Islamic panel survey and the literature during the development stage was mainly intended to generate items that were comprehensive in assessing a wide area of Islamic understanding and practice. The assessment of a wide area of Islamic understanding and practice was intended to address the gap of previous research in this area where the findings had mainly focused on the aspect of *'Ibadah'*.[7–9] Apart from *'Ibadah'*, there are other components which are considered important for a Muslim, from the perspective of an Islamic world view. The main components of Islamic and *'tawhidic'* (Oneness of God) worldview is *'Aqidah'*, which can be manifested through the act of worship (*'Ibadah'*), good Islamic character (*'Akhlak Islamiyah'*) as well as relationship with other human beings (*'Mua'malat'*).[13,14] Apart from that, the purpose of Islam is to purify the inner life of man through having a good concept of *'Tasawwuf'*, and thus may be considered as important components of Muslim's religiosity. These components, in addition to *'Sirah'* and *'Da'wah'* (which are also considered important as a Muslim from the view of Islamic panel), form the basis of generating the sub-domain of IPM3P. During the thematic analysis for sub-domain generation, recurring sub-domain was identified from the literature and survey findings showing that the data had reached a saturation point.[18] This

data saturation indicates that the identified sub-domains appear very important in moulding a good Muslim character and practice. The inclusion of all the sub-domains is hoped to enable a holistic assessment on the effects of hearing loss towards Islamic understanding and practice.

During the initial stage of the development of IPM3P item, the initial version of IPM3P consisted of quite a large number of items representing each domain and sub-domains (59 items), in order to prepare for any item deletion following the later stage of psychometric analysis.[19] Unlike other sub-domains which consist of quite a large number of items, the preliminary version of IPM3P only includes two items under the sub-domain *'Sirah'*. This was because the item under the sub-domain *'Sirah'* was slightly more difficult to be generated to suit each domain. In addition, only two responses concerning *'Sirah'* were gathered out of 182 responses during an Islamic panel survey, as compared to other sub-domains which yielded a higher number of responses. Thus less weight of item generation was given for the sub-domain *'Sirah'*.

CONCLUSION

In conclusion, this study offers an early information on how measurement can be developed to assess the perception of Muslim adults with hearing impairment towards their Islamic understanding and practice. Preliminary version of IPM3P consists of 59 items that has been produced, representing three domains: 'Obligation' (18 items), 'Practice' (21 items), and 'Difficulty' (20 items), and seven sub-domains (*'Ibadah'*, *'Aqidah'*, *'Muamalat'*, *'Tasawwuf'*, *'Akhlak'*, *'Da'wah'*, and *'Sirah'*). The preliminary development of IPM3P served as a preliminary step to further understand the religious need and religious difficulty among Muslim adults with hearing impairment.

RECOMMENDATIONS

The preliminary version of IPM3P needs to undergo a series of psychometric evaluation including content, face and construct validity, as well as reliability assessment, before it can be used on a wider Muslim population with hearing impairment.

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