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## Patient-Reported Outcomes

# Medication Use Questionnaire for Older Adults in Malaysia: Translation, Cultural Adaptation, and Reliability



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## ABSTRACT

**Objectives:** This study aimed to translate the Medication Use Questionnaire into a Malay version, adapt it to Malaysia's culture, and verify its reliability among Malaysia's older adults.

**Methods:** Methodological approaches were used to translate, validate, and modify the questionnaire. The subjects were older adults aged  $\geq 60$  years in primary care settings in Penang, Malaysia. Two forward translations (English to Malay) were developed, reviewed, and back translated to English. The reconciliation phase was conducted to compare the translated and original questionnaires. Five older adults were then interviewed for the cognitive debriefing of the reconciled questionnaire to assess the linguistic and cultural equivalence. Two experts assessed content validity, and the translated questionnaire was proofread and finalized. After that, pilot test was done to examine the internal consistency among 20 older adults.

**Results:** Translation of the questionnaire was done with no major disagreements. The main issues identified in cognitive debriefing and content validity were terms, number of questions, and phrases used in the questionnaire. Most participants reported that the questionnaires were not difficult to complete during the cognitive debriefing phase. The issues were then judged and revised accordingly. Further pilot testing on 20 older adults demonstrated good internal consistency reliability, Cronbach  $\alpha$  (0.902).

**Conclusions:** This study findings suggest promising data supporting the use of translated version of the Medication Use Questionnaire that can be used to identify medication use problems among older adults in Malaysia.

**Keywords:** cultural adaptation, medication use, older adults, questionnaire, translation.

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## Introduction

Older adults tend to develop multiple comorbidities. Consequently, they receive a higher number of medications than individuals of other age groups.<sup>1</sup> This is particularly true when older adults need complex medication regimens because of their multiple chronic conditions.<sup>2</sup> Thus, the rapid growth of older adults globally will substantially affect the already-overburdened healthcare system.<sup>3</sup> The use of multiple concurrent medications in older adult can lead to undesirable outcomes, such as polypharmacy, inappropriate medication, adverse drug events, medication nonadherence, medication discrepancy, poor accessibility, level of satisfaction with medications, and inadequate knowledge of medication, has been associated with older adults.<sup>4</sup>

Several studies have pointed out medication-related problems among older adults. In a recent study, almost 47.7% of older adults in a central region in Portugal were nonadherent to their medications.<sup>5</sup> In Malaysia, in some rural and urban areas in Selangor and Klang Valley, it was reported that 12.7% of older adults reported low adherence, and 36.7% had a medium level of

adherence to their medications.<sup>6</sup> Inappropriate medications are often known to cause different medication use and drug-related problems among older adults.<sup>7</sup> A study by Wucherer et al<sup>8</sup> found that the prevalence of potentially inappropriate medications among people with dementia was 23%, and cognitive impairment was the leading cause of this medication use-related problem. This literature has supported the evidence on medication use problems affecting older adults, especially at the primary care level, given that the support system and structure to help them with the proper management and use of medicines are lacking.

The extent of medication use problems in older adults is often underestimated because of insufficient screening of this population.<sup>9,10</sup> A valid and proper screening tool is needed to capture the medication use problems among older adults. Several instruments have been developed to identify medication use problems among older adults.<sup>11</sup> Advinha et al<sup>12</sup> used the medication regimen complexity index to evaluate medication complexity among institutionalized older adults. Horne et al<sup>13</sup> developed the Belief About Medication Use Questionnaire to assess medication use

adherence and medication belief. Specifically evaluating medication use problems among older adults, Berman et al<sup>14</sup> developed a self-administered Medication Use Questionnaire (MedUseQ) in the United States and validated the tool in the English language. The MedUseQ tool has the potential to empower older adults to communicate with healthcare providers regarding potential medication use concerns. In addition, MedUseQ makes recommendations to address medication-related issues that are detected.<sup>14</sup> In the current study, MedUseQ tool was preferred among other tools because it was a patient-centered tool targeting older adults that can be used to assess a wide range of medication use complexity.

Malaysia is an aging nation with a wide ethnic diversity, and the official language in this region is Malay.<sup>15</sup> Numerous studies have been published about Malaysian geriatric healthcare services and medicine use problems at the primary care level. A study by Neoh et al<sup>16</sup> reported that 75% of older adults in Malaysia did not know the difference between generic and brand names of their various medications. The reason was clear evidence of poor knowledge levels among the older population. Following the pattern, in another study, Omar et al<sup>16</sup> pointed out that most older adults have difficulties adhering to medications because of the number of prescriptions prescribed to them at a primary care level. Another study reported that older populations contributed almost 23% of total adverse drug events in 2015 in Malaysia.<sup>17</sup> The evidence has marked a need for more research and studies to be conducted among older adults. Limited research tools were available to research on understanding the challenges and perspectives of older adults in Malaysia. Despite that, no specific tool is translated into the Malay language to understand the complexity of the medication use problems older adults face. Thus, a geriatric-specific tool that aids in improving the health quality of older adults should be developed to identify the magnitude of medication use problems and come out with solutions.

To date, MedUseQ has not been translated into other languages before, and the Malay version of MedUseQ had not been developed. Therefore, this study aimed to translate and develop the tool to be culturally adapted and verify its reliability among older adults in Malaysia or other Malay-speaking older adult populations, to be used among researchers for clinical practice and research.

## Methods

### Study Design, Settings, and Participants

Methodological approaches, which involved sequential steps using the guideline from the World Health Organization, were used to translate, validate, and modify the questionnaire to be culturally adapted to the Malaysian context.<sup>18,19</sup> The study consisted of 3 steps: (1) linguistic validation, (2) cognitive debriefing and content validation, and (3) evaluation of the internal consistency reliability. A cross-sectional study design was adopted to administer the questionnaire through phone calls or via the Qualtrics survey link for the pilot study and manually printed questionnaire for those who do not know how to use the electronic survey. Convenience sampling was used to recruit 20 study participants attending primary care settings in Penang. Participants were included if they were (1) aged 60 years and older, (2) taking medications at primary care settings in Penang, and (3) able to read and answer the questionnaire in the Malay language. Patients who were terminally ill, cognitively impaired, and unable to give consent were excluded.

### Ethical Consideration

The study had ethical approval from the Malaysia Research Ethics Committee of the Ministry of Health Malaysia, NMRR-20-3136-56763 (IIR), and the Monash University Human Research Ethical team (28486).

### Description and Psychometric Properties of the Original Instrument

MedUseQ is a validated, self-administered tool for older adults that may be used in clinical and community settings to assess a wide range of medication use concerns and recommend education, intervention, or additional assessment areas. The original questionnaire contains 24 self-administered questions comprising 6 domains: confusion, control over medications, deception, belief about medications, problems taking medication, and interpersonal and systematic factors. In addition, we have added another satisfaction domain to evaluate older adults' perspectives and preferences on medication use services. This questionnaire is intended for older adults who live in the community and collect their medications from primary healthcare facilities. There is some evidence for the feasibility of using similar self-administered screeners in primary care settings.<sup>20</sup> The overall internal consistency reliability was 0.87, person reliability was acceptable with 0.74, and item reliability was 0.96.<sup>14</sup> The 5-point Likert-type of response options from the current scales of the questionnaire were (1) never, (2) rarely, (3) sometimes, (4) often, and (5) always. In the current questionnaire, questions on sociodemographic characteristics were added, that is, sex, marital status, educational background, occupation, number of medications, financial burden, and type of primary care visitation.

### Preparation

Permission to translate and modify the questionnaire was obtained from the original authors. The details and proposal of the study were discussed with the organization team of the original questionnaire developers. Feedback and discussion were made throughout the process of developing the Malay version of the questionnaire.

### The Linguistic Validation Processes

This process consists of forward translation, back translation, reconciliation, and cognitive debriefing. The translation process was followed according to the World Health Organization guidelines.<sup>19</sup> The translation protocol aims to achieve the different linguistic versions of instruments, which are conceptually equivalent in different cultures.<sup>21</sup> The translation process of the current study focused on cross-cultural adaptation based on the Malaysian context is presented in Figure 1.

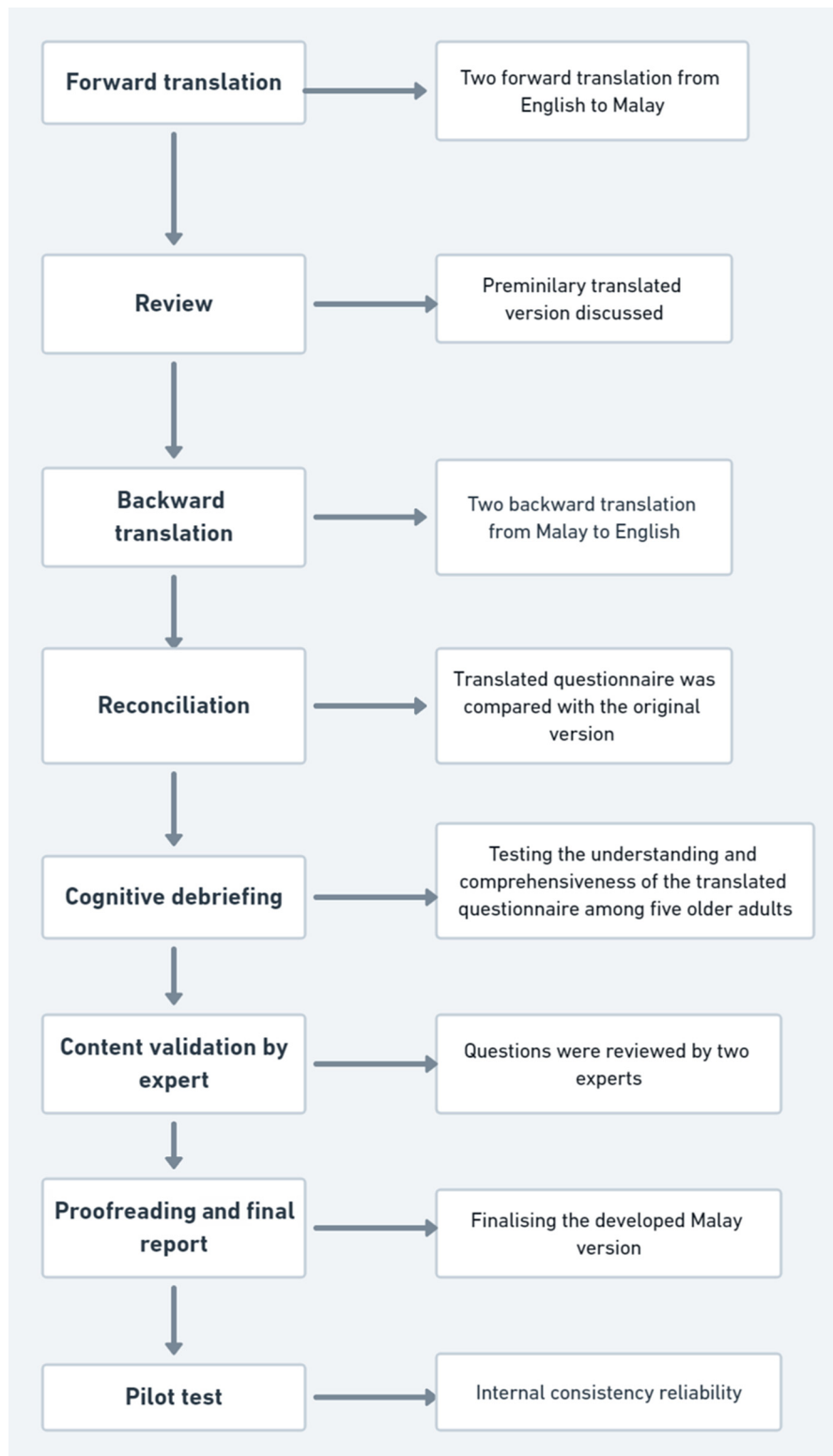
#### Forward Translation

Two independent bilingual speakers translated from the English version to the Malay version. Both are pharmacists by occupation, and their native language is Malay. One of them is an experienced geriatric pharmacist who knows well the simple sentence and word structure suitable for older adults. Nevertheless, the translators were not informed about the content of the tool before the translation process.

#### Back Translation

After review, back translation was performed by another 2 independent pharmacists who have a good command of both

**Figure 1.** Translation and validation of Malay version MedUseQ.



MedUseQ indicates Medication Use Questionnaire.

languages and their native language, English. Both of them were experienced researchers in the translation and validation of questionnaires. The back translators were blinded and unaware of the original instruments.

### **Reconciliation**

The translated questionnaire was compared with the original version through meetings between the authors and the

**Table 1.** Major comments resolved in cognitive debriefing phase.

Participants	Education background	Socioeconomic background	Comments by participants	Revision by researcher
A	Primary education	Housewife	a) Found the question repetitive b) Could not understand primary care and community pharmacy term. Participant related it to a shop for community pharmacy	We reviewed the questions and tried to combine some questions if they were similar. We revised the word community pharmacy to be bracketed to be pharmacy shop
B	Primary education	Unemployed	The participant mentioned too many questions and repetitive	Combined some questions that are similar and reduced the number of questions
C	Secondary education	Housewife	a) Participant could not understand the word primary care and community pharmacy. b) Participant did not understand question 2	We revised the word primary health facilities to health clinics and community pharmacy (pharmacy shop). Restructured question number 2
D	Secondary education	Unemployed	a) Participant could understand. b) Took some time to complete	We reviewed the questions and tried to combine some questions if they were similar
E	Secondary education	Unemployed	a) Participant mentioned too many questions. Felt should be short, so that does not take long b) Confused with the word community pharmacy as she mentioned never heard about it	We revised the questions to be short. Revised the word community pharmacy to be bracketed to be pharmacy shop

translators. Based on an extensive literature review and the expert translation panels' opinions, single new items were added. Any discrepancies were discussed, and the questionnaire was modified and revised as discussed according to cross-cultural adaptation based on the Malaysian context on medication use among older adults. The authors compared the new translated tool with the original MedUseQ to verify the quality of translation and ensure that all elements of the intended meaning are maintained.

### Cognitive Debriefing

The next step is to test the translated and modified questionnaire to review whether it suits the older person and whether they understand the questions. Five older adults were purposively selected to complete the questionnaire. These participants with various educational and work backgrounds were selected to obtain a balanced demographic profile. All of them were asked about their understanding of each item of questions and were asked to clarify their doubts and comment on the questions and response choices. They were also asked whether the words and terms used in the Malay version were clear, relevant, and understandable. The process was able to identify any flaws in the translated version. Modifications of words and items, improvements, and cross-cultural adaptations were refined after the cognitive debriefing to ensure cultural equivalence. After cognitive debriefing, we verbally discussed the issues with geriatric pharmacists and community pharmacists to get their input on the adapted and translated questionnaire.

### Content Validation

Two experts were consulted to review the questions and give their comments. One is an experienced academician, a practicing pharmacist, and another is an experienced family medicine specialist in a primary healthcare facility. Their comments and inputs regarding each question's clarity, appropriateness, and relevance were noted.

### Finalization

The Malay version of MedUseQ was finalized by proofreading by a native Malay language speaker. This step was essential to avoid any grammatical errors. Consequently, the final Malay version of MedUseQ was developed.

### Pilot Testing and Internal Consistency Reliability

After translation, cognitive debriefing, and content validation, the questionnaire was pilot tested among 20 older adults to assess the feasibility of administering the questionnaire and measure the internal consistency reliability. Older adults older than 60 years and who have visited any primary care setting in Penang, Malaysia, were recruited to complete the self-administered questionnaire. Participants were recruited through phone calls and sharing the survey link through the WhatsApp platform. For participants who were having difficulties in reading and writing, the researcher administered the questionnaire for them by reading and writing the answers with the aid of standardized protocol questions. Internal consistency reliability was tested using SPSS version 26 (IBM SPSS Statistics for Windows, Version 26.0; IBM Corp, Armonk, NY). Cronbach's  $\alpha$  is a widely used measure of reliability that quantifies the degree of random measurement error in a multi-item measuring scales sum score or average.<sup>22</sup>

## Results

### Translation Items

Questions about demographic characteristics were added to the questionnaire. It included age, ethnicity, educational level, living style, financial assistance, insurance, number of medications, and primary healthcare facility visitation type. Items of the questionnaire were reviewed carefully by study investigators based on conceptual and Malaysian's cultural context. The item on alcohol consumption was removed to prevent insensitivity as

**Table 2.** Comparison of the translated and modified version MedUseQ with the original version.

No.	Original version MedUseQ	Translated and adapted version of MedUseQ	Amendments
1	Responses of each questions were 3-point Likert scales: never, once in a while, often	Responses of each questions were 5-point Likert scales: always, often, sometimes, seldom, never	5-point Likert scale is ideal because it can give variation in response and flexibility for participants who agree with their response at a certain scale rather than having extreme responses choice only
2	How often have you had problems taking your medications as instructed because you did not have an organized way to keep track of them?	How often do you feel you have many medications to take?	Removed the question and added new question on polypharmacy
3	How often have you had problems taking a medication as instructed because you needed help and it was not available?	How often do you find it is easy to get your medication information from your primary healthcare providers?	Removed the question and added new question on accessibility of medication information
4	How often did you take less of a medication than instructed or skip it because of the side effects?	How often do you skip your medication or take less than instructed because of the side effects of medication disturbing your daily activities? (eg, needing to go to the bathroom too often, feeling tired, or not being able to think clearly)	Combined the questions to become as one question
5	How often did you take less of a medication than instructed or skip it because you were worried about how your medications might interact with each other?		Removed the question
6	How often have you taken an over-the-counter medication, supplement, or alternative product without knowing how it interacts with your prescriptions?	How often do you have to take several medications together at the same time?	Revised the question to be more specific and easy to understand
7	How often have you taken an alternative product instead of a medication your provider prescribed or recommended?	Do you know the proper use each of your medication? 1. Timing 2. Right dose 3. Indication of each medication 4. Side effects of each medication	Removed the question and added a new question on medication use knowledge
8	How often have you decided on your own what medication you should take?	How satisfied are you with medication use services provided by: 1. Government health clinics 2. Private clinics 3. Community pharmacy	Removed the question and added satisfaction level questions
9	How often have you had alcoholic beverages when the instructions for a medication said not to use alcohol?	-	Removed the question
10	How often have you gone to > 1 healthcare provider because you needed or wanted more of a medication than prescribed?	How often have you gone to > 1 clinic or community pharmacy (pharmacy shop) because you need more medication than prescribed?	Modified some words, that is, community pharmacy and primary care, with simple lay term words so that participants can understand

MedUseQ indicates Medication Use Questionnaire.

Malaysia is an Islamic country with multiracial people. Because dispensing separation is not practiced here, satisfaction was added to evaluate the 3 different primary healthcare facilities separately to suit the context. The backward translation revealed no significant issues. The reconciliation process was smooth given that not much conflict was found between forward and back translation.

### Cognitive Debriefing

The comments of participants are presented in Table 1. Overall, all the participants could easily understand the translated version of the questionnaire. Nevertheless, most of them reported on the length of the questionnaire, repetitive questions, and the presence of some words that was formal. For example, the words “primary

care” and “community pharmacy” raised confusion among most participants because the terms were not used in their daily communication. Thus, we rendered the words to be more specific and in plain terms to enhance the understanding of older adults. The length of the questionnaire was then revised, and similar types of questions were combined to make it more time convenient for participants to answer. The detailed amendments that were made to the questionnaire in comparison with the original version MedUseQ are presented in Table 2.

### Content Validation

Based on 2 expert reviews, issues were identified, judged, and considered important to be revised in the questionnaire. Both the

**Table 3.** Major comments resolved in content validation phase.

Expert A's suggestion	After amendments	Expert B's suggestion	After amendments
To specify the "others" under the ethnicity column	Placed a column to specify "others"	To review the instruction words	Replace the word with a tick.
To define secondary and tertiary education in a bracket	Put in the bracket Secondary: (high school) Tertiary: (college/universities)	To rephrase the sentence in the second question	How often have you had problems taking medication as directed (by doctor/pharmacist) because the instructions were difficult?
To review the title wording	Changed the word in the title from issues to problems in the questionnaire	To review the response options and set a frequency target	From previous literature, set a frequency target Always = 30 times a month (every day) Often = 16-29 times a month Sometimes = 9-15 times a month Rarely = 1-8 times a month Never = 0 times a month
To review the response options and set a frequency target	From previous literature, set a frequency target Always = 30 times a month (every day) Often = 16-29 times a month Sometimes = 9-15 times a month Rarely = 1-8 times a month Never = 0 times a month		
To specify the word OTC to medications without prescription	Included medications without prescriptions in the sentence		
To specify the health clinic	Adjusted the word to be a government health clinic		

MedUseQ indicates Medication Use Questionnaire; OTC, over-the-counter.

experts mentioned the necessity to review the response options and set a frequency target to enable the participants to understand the meaning of the response options. Frequencies were suggested as the number of days in a month to evaluate the exact response on their frequency of having such problems, for example, setting the responses as always = 30 times a month (every day), often = 16-29 times a month, sometimes = 9-15 times a month, rarely = 1-8 times a month, and never = 0 times a month. Details on other issues raised and resolved regarding MedUseQ were described in Table 3.

### Internal Consistency and Reliability

The demographic profile of 20 respondents is presented in Table 4. Cronbach  $\alpha$  value > 0.70 indicates a high level of internal consistency of the questionnaire.  $\alpha$  values  $\geq$  0.7 were considered satisfactory.<sup>23</sup> The overall internal consistency of the questionnaire was 0.902. Medication use items showed a Cronbach  $\alpha$  of 0.777 and satisfaction items showed 0.729.

## Discussion

MedUseQ, a validated questionnaire, is a tool to create engagement between older adults and healthcare providers regarding potential medication use problems and to identify any solutions to address the problems.<sup>14</sup> To the best of our knowledge, this is the first culturally adapted and translated MedUseQ study

in Malay. Therefore, this study aimed to adapt the questionnaire to fit the Malaysian context.

The Malay language is adapted to communicate efficiently with various ethnic groups.<sup>24</sup> This region is known for its rich cultural diversities. Thus, translation based on cultural adaptation is vital to retain diversity. No significant challenges were found with translation. Items including alcohol consumption as the main focus within an item in the questionnaire were removed because it was noted that it could raise some cultural sensitivity issues.<sup>25</sup> This item was replaced with the satisfaction level of older adults in the primary care facilities. Satisfaction of medication use services from primary care is vital in clinical research for assessing pharmaceutical care and improving interventions. Low satisfaction is associated with low medication adherence,<sup>26</sup> which is often related to patient satisfaction with medication adherence in improving medication use.<sup>27</sup>

Cognitive debriefing is to get a cognitive response from older adults based on their understanding, appropriateness, timing, and clarity or difficulty level of the questionnaire.<sup>28</sup> Based on the interviews, most older adults have mentioned that the questionnaire is rather long and repetitive. Thus, certain similar items of the questionnaire were combined to accommodate the population's needs. Similarly, certain items were reworded, that is, community pharmacy as pharmacy shop, because many older adults were unaware of the community pharmacy roles. Furthermore, the administration of the survey questionnaire was conducted by the older adults independently or by the researcher with the aid of predetermined protocol questions. Having



**Table 4.** Demographic profile of pilot study respondents.

Demographic variable	Number (%)
Sex	
Male	9 (45.0)
Female	11 (55.0)
Age	
60-65	8 (40.0)
66-70	5 (25.0)
71-75	3 (15.0)
76-80	3 (15.0)
> 80	1 (5.0)
Ethnicity	
Malay	4 (20.0)
Chinese	10 (50.0)
Indian	5 (25.0)
Others	1 (5.0)
Education level	
No formal education	1 (5.0)
Primary	4 (20.0)
Secondary	10 (50.0)
Tertiary	5 (25.0)
Living arrangement	
Alone	4 (20.0)
Family	16 (80.0)
Living income source	
Working	10 (50.0)
Pension	4 (20.0)
EPF/retired fund	1 (5.0)
Family support	4 (20.0)
Questionnaire administration	
Qualtrics survey	6 (30.0)
Manual printed survey	10 (50.0)
Telephone survey	4 (20.0)

EPF indicates Employees Provident Fund.

standardized assessment questions could help to reduce bias in the response toward the questionnaire. Primary healthcare in Malaysia is mainly from government health clinics providing free medication and treatment to older adults older than 60 years. Thus, the focus on the vulnerable population shifted mainly to primary healthcare, which caters for their healthcare needs.

The degree to which elements of an assessment instrument are relevant to and representational of the intended construct for a specific assessment purpose is referred to as content validation.<sup>29</sup> In this study, the reason was to validate the items culturally in line with the Malaysian context. One of the significant suggestions by the experts was to define a frequency response. As described in the results section, the amendment on response rates was based on literature.<sup>30</sup> The guide on response frequency can reduce the complexity of completing the questionnaire.

Based on the reliability analysis results, the internal consistency coefficient (Cronbach  $\alpha$ ) for the instrument was found to be good,

demonstrating that it can generate reliable scores. The final questionnaire was developed based on Cronbach's  $\alpha$  values ( $> 0.70$ ).<sup>23</sup> The overall internal consistency for our translated version, 0.902, was higher than the original questionnaire, 0.87. The possibility of replacing items could have contributed to the justifications.

### Future Recommendations

The availability of the Malay version of MedUseQ has a promising role in determining the magnitude and frequency of medication use problems among older adults in Malaysia. The tool would be beneficial to assess issues of older adults regarding medication adherence, medication administration, polypharmacy, accessibility, and satisfaction with medication use. The tool mostly focuses on the older adult population as having simplified words and a revised length of the questionnaire. Given that the tool could assess various medication use domains, it is suggested that the Malay version of MedUseQ be widely used globally among Malay-speaking populations, especially in Southeast Asian countries.

### Strengths and Limitations

First, generalizability may be limited as the study samples were restricted to primary healthcare facilities. Snowball sampling strategy was used to recruit pilot study respondents, which could possibly lead to sampling error. Nevertheless, during the study period (lockdown due to coronavirus disease 2019), this sampling method was one of the available options to collect the pilot study data from older adults. The questionnaire was self-administered and took approximately 10 to 15 minutes to complete. Nevertheless, some older adults needed assistance in completing the questionnaire, because they were illiterate and had vision or hearing impairments, thus being one of the drawbacks of the tool. Despite these limitations, the MedUseQ was successfully adapted culturally and translated to the Malay language and can be used throughout Malaysia to evaluate medication use problems in primary healthcare settings. Moreover, further research is needed to determine further validation on the produced Malay version questionnaire before its use in research and clinical practice.

### Conclusions

This study found promising data supporting the use of Malay version MedUseQ. This version can be used in the future to evaluate patients' medication use problems in various healthcare facilities among the Malay-speaking older population. Nevertheless, further research is needed to determine the psychometric properties of the Malay version of MedUseQ to produce a valid and reliable tool.

### Article and Author Information

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## REFERENCES

- Hillen JB, Vitry A, Caughey GE. Medication-related quality of care in residential aged care: an Australian experience. *Int J Qual Health Care*. 2019;31(4):298–306.
- Murray MD, Callahan CM. Improving medication use for older adults: an integrated research agenda. *Ann Intern Med*. 2003;139(5 pt 2):425–429.
- Wilber ST, Gerson LW, Terrell KM, et al. Geriatric emergency medicine and the 2006 Institute of Medicine reports from the Committee on the Future of Emergency Care in The U.S. Health system. *Acad Emerg Med*. 2006;13(12):1345–1351.
- Wong CW. Medication-related problems in older people: how to optimise medication management. *HK Med J*. 2020;26(6):510–519.
- Gomes D, Placido AI, M6 R, et al. Daily medication management and adherence in the polymedicated elderly: a cross-sectional study in Portugal. *Int J Environ Res Public Health*. 2020;17(1):200.
- Neoh CF, Long CM, Lim SM, Ramasamy K, Shahar S, Majeed ABA. Medication use and adherence among multi-ethnic community-dwelling older adults in Malaysia. *Geriatr Gerontol Int*. 2017;17(8):1214–1220.
- Redston MR, Hilmer SN, McLachlan AJ, Clough AJ, Gnjdic D. Prevalence of potentially inappropriate medication use in older inpatients with and without cognitive impairment: a systematic review. *J Alzheimers Dis*. 2018;61(4):1639–1652.
- Wucherer D, Eichler T, Hertel J, et al. Potentially inappropriate medication in community-dwelling primary care patients who were screened positive for dementia. *J Alzheimers Dis*. 2017;55(2):691–701.
- Albert SM, Bix L, Bridgeman MM, et al. Promoting safe and effective use of OTC medications: CHPA-GSA National Summit. *Gerontologist*. 2014;54(6):909–918.
- Kernodle AR, Frail CK, Gernant SA, Pater KS, Doebbeling BN, Snyder ME. Patients' experiences using a brief screening tool for medication-related problems in a community pharmacy setting: a qualitative study. *J Pharm Pract*. 2017;30(1):49–57.
- Elliott RA, Marriott JL. Standardised assessment of patients' capacity to manage medications: a systematic review of published instruments. *BMC Geriatr*. 2009;9(1):1–10.
- Advinha AM, de Oliveira-Martins S, Mateus V, Pajote SG, Lopes MJ. Medication regimen complexity in institutionalized elderly people in an aging society. *Int J Clin Pharm*. 2014;36(4):750–756.
- Horne R, Weinman J, Hankins M. The beliefs about medicines questionnaire: the development and evaluation of a new method for assessing the cognitive representation of medication. *Psychol Health*. 1999;14(1):1–24.
- Berman RL, Iris M, Conrad KJ, Robinson C. Validation of the MedUseQ: a self-administered screener for older adults to assess medication use problems. *J Pharm Pract*. 2019;32(5):509–523.
- Davey WG. The legislation of Bahasa Malaysia as the official language of Malaysia. Walter de Gruyter GmbH. <https://www.degruyter.com/document/doi/10.1515/9783110857092-010/pdf#:~:text=Malaysia%20is%20a%20multie%20and,the%20National%20Lan%20guage%20Act>. Accessed March 10, 2022.
- Omar MS, Ariandi AH, Tohit NM. Practical problems of medication use in the elderly Malaysians and their beliefs and attitudes toward deprescribing of medications. *J Res Pharm Pract*. 2019;8(3):105.
- Hashim R, Zainal ZA, Taib HM. Preliminary report: review of adverse drug reactions (ADRs) reporting in the Malaysian elderly. *Pharm Sci Asia*. 2019;46(3):135–139.
- Sousa VD, Rojjanasrirat W. Translation, adaptation and validation of instruments or scales for use in cross-cultural health care research: a clear and user-friendly guideline. *J Eval Clin Pract*. 2011;17(2):268–274.
- Process of translation and adaptation of instruments. World Health Organization. [https://www.who.int/substance\\_abuse/research\\_tools/translation/en/](https://www.who.int/substance_abuse/research_tools/translation/en/). Accessed June 23, 2021.
- Kishimoto M, Noda M. The difficulties of interprofessional teamwork in diabetes care: a questionnaire survey. *J Multidiscip Healthc*. 2014;7:333.
- Kalfoss M. Translation and adaption of questionnaires: a nursing challenge. *SAGE Open Nurs*. 2019;2377960818816810.
- Hayes AF, Coutts JJ. Use omega rather than Cronbach's alpha for estimating reliability. *But.... Commun Methods Meas*. 2020;14(1):1–24.
- Bland JM, Altman D. Cronbach's alpha. *BMJ*. 1997;314(7080):572.
- Sariffin MR. Cultural communication in social integration between Bawean ethnic and Malay sub-ethnic in Malaysia. *Int J Sci Res Manag*. 2020;8(1):585–590.
- Zidan A, Awaisu A, Hasan S, Kheir N. The Living with Medicines Questionnaire: translation and cultural adaptation into the Arabic context. *Value Health Reg Issues*. 2016;10:36–40.
- Zyoud SE, Al-Jabi SW, Sweileh WM, Morisky DE. Relationship of treatment satisfaction to medication adherence: findings from a cross-sectional survey among hypertensive patients in Palestine. *Health Qual Life Outcomes*. 2013;11(1):191.
- Gellad WF, Grenard JL, Marcum ZA. A systematic review of barriers to medication adherence in the elderly: looking beyond cost and regimen complexity. *Am J Geriatr Pharmacother*. 2011;9(1):11–23.
- Tse ETY, Lam CLK, Wong CKH, et al. Cultural adaptation and content validity of a Chinese translation of the 'Person-Centered Primary Care Measure': findings from cognitive debriefing. *Fam Med Community Health*. 2020;8(4):e000621.
- Cook DA, Beckman TJ. Current concepts in validity and reliability for psychometric instruments: theory and application. *Am J Med*. 2006;119(2):166.e7–166.e16.
- Kusano M, Shimoyama Y, Sugimoto S, et al. Development and evaluation of FSSG: frequency scale for the symptoms of GERD. *J Gastroenterol*. 2004;39(9):888–891.