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# Health Literacy Among Urban Malaysian Elders: A Descriptive Study

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Background: Ample evidence shows that health literacy (HL) has a huge impact on health. However, little is known about HL among older adults in low- and middle-income regions, including Malaysia. This study aims to measure the prevalence of HL among urban elders, and describe its level based on different areas and dimensions. Methods: This was a cross-sectional study, employing descriptive analyses. Conducted in Seksyen 24 of Shah Alam city, 206 older adults were randomly selected though a multi-stage sampling strategy. The Health Literacy Short-Form (HL-SF12) questionnaire was used to assess literacy in three areas (healthcare, disease prevention and health promotion) and four dimensions (finding information, understanding information, judging information and applying information). Analyses were run by SPSS 25.0 for Windows. Results: More than half respondents (62.6%) had low HL. Older males had higher HL scores than females, and HL declined with increasing age. There was no significant difference in scores between the three HL areas; healthcare, disease prevention and health promotion between the two sex groups. However, across the four HL dimensions, finding health-related information was reported as the most difficult task. Discussion: Health programs and interventions need to take into account older adults' preferences and behavior in accessing information. Difficulty in finding information can be attributed to older adults' familiarity with traditional channels as opposed to the current trends of using information technology and movement towards digitalization.

**Keywords:** Health literacy; older adults; urban elders; descriptive study

## I. INTRODUCTION

The World Health Organization (WHO) defines health literacy (HL) as "the cognitive and social skills which determine the motivation and ability of individuals to understand and use information in ways which can promote and maintain good health" (WHO, 2017). HL also refers to "the degree to which individuals have the capacity to obtain, process, and understand basic health information and services needed to make appropriate health decisions" (Ratzan and Parker, 2000). As HL requires literacy skills (reading and writing) and the ability to understand and utilise health-related information in multiple contexts (Nutbeam, 2015), it can be a challenge to the aged and to those with limited formal education.

In line with universal trends, the older population in Malaysia is rapidly increasing. In the next one or two decades, Malaysia is projected to become an aged nation

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(Ramely *et al.*, 2016). Current social security systems and health services are largely unprepared to accommodate for this demographic transition. As the risks of chronic diseases and morbidities increase with age, older adults are, and will continue to be the major consumers of healthcare and thus account for the largest portion of healthcare expenses. Despite all these, little is known about the degree of literacy among Malaysian elders in navigating health information and services.

Ample evidence points to the influence of HL on health status and outcomes. For instance, studies showed that older adults with lower HL had greater prevalence of certain types of chronic diseases (Berkman *et al*, 2011; Froze *et al.*, 2018). HL was also reported to affect chronic disease management; those with lower HL showed less compliance with medication and follow-up visits (Diemer *et al.*, 2017). Similarly, low HL was associated with higher frequencies of hospitalizations and visits to emergency care, and higher medical costs (Diemer *et al.*, 2017, Haun *et al*, 2015).

Given the well-established link between HL and various health-related outcomes – with a background of rapid aging in Malaysia – our study aims to: 1) measure the prevalence of HL among older adults, and; 2) describe the level of HL according to its different areas and dimensions.

## II. MATERIALS AND METHOD

This study employed a cross-sectional design, and was conducted in Seksyen 24, Shah Alam city. Shah Alam is the state capital of Selangor, with a population of approximately 750,000 people. There are altogether 56 sections (Seksyen) in Shah Alam. Seksyen 24 was chosen as the study site following a series of discussions with the local council; this section was said to have the highest proportion of older adults compared to other sections in the city.

A total of 206 older adults were selected through a multi-stage sampling strategy. First, Seksyen 24 was divided into five residential neighbourhoods, from which four were randomly selected. In these four neighbourhoods, houses were then selected using a systematic random sampling method, to achieve the required sample size. This was followed by a house-to-house visit for data collection, which took place between March and April 2019.

Inclusion criteria were: a) Malaysian citizen; b) resident aged 60 years or more; c) those who have been residing in Seksyen 24, Shah Alam for a minimum period of six months, and; d) those who are able to read and communicate independently either in English or Malay. We excluded individuals with cognitive impairment or inability to communicate due to severe hearing impairment or any other health conditions, and those with a medical or health-related professional background.

Health Literacy was measured using the 'Health Literacy Short-Form 12 (HL-SF12) Questionnaire', derived from the Health Literacy Survey – European Health Literacy Questionnaire (HLS-EU-Q47). This questionnaire has been previously validated in several Asian countries including Malaysia (Duong *et al.*, 2017). The items of HL-SF12 aim to assess three areas of HL: healthcare, disease prevention and health promotion. On the other hand, it measures four dimensions of HL: 1) finding information on health, represented by the first question in each area; 2) understanding information on health, represented by the second question in each area; 3) judging information on health, represented by the third question in each area, and; 4) applying information on health, represented by the last question in each area.

Answers are based on a four-point Likert scale that determines the level of difficulty in performing each item: 1= very difficult, 2 = difficult, 3 = easy and 4 = very easy. The score of all three areas form a General Health Literacy Index (GEN-HL Index) which range from 0 to 50. The GEN-HL index score is categorized into: Inadequate (0-24), problematic (25-33), sufficient (34-42), and excellent (43-50). Finally, we collapsed the first two categories into 'low HL' and the last two categories into 'good HL'.

Face-to-face interviews were conducted by Year 4 students of Universiti Teknologi MARA Faculty of Medicine. The students went through a series of briefings and trainings prior to data collection, in order to ensure that questions were asked in a standard manner, difficulties could be handled, and older adults' autonomy and rights were respected.

Data was entered the statistical software using a double-entry method and analysed using SPSS 25.0 for Windows. Descriptive statistics were employed; means and standard deviations were reported for continuous variables, while frequencies and percentages were reported for categorical variables. Correlations between two continuous variables were tested using Pearson's correlation coefficient, and associations between two categorical variables were measured using Chi-squared tests. Statistical significance was set at 0.05. Ethical approval for this study was granted by the Universiti Teknologi MARA ethical board.

## III. RESULT

Males and the younger older adults (60-69) comprised more than half of study respondents, 51.5% and 75.7% respectively. The mean respondent age was 66.6 + 5.5 and average GEN-HL index score was 30.6 + 10.0. Table 1 shows the basic characteristics of older adults in Seksyen 24, Shah Alam who participated in this study.

Table 1. Basic characteristics of study respondents (n=206)

| Variable | Frequency (n) | Percentage (%) |
|---|---|---|
| Age group | | |
| 60-69 | 156 | 75.7 |
| 70-79 | 45 | 21.8 |
| 80 and over | 5 | 2.5 |
| Sex | | |
| Male | 106 | 51.5 |
| Female | 100 | 48.5 |
| Marital status | | |
| Single | 6 | 2.9 |
| Married | 161 | 78.2 |
| Separated/ Widowed | 39 | 18.9 |
| Occupation | | |
| Working | 20 | 9.3 |
| Not working | 186 | 90.7 |
| Education level | | |
| No formal education | 16 | 7.8 |
| Primary | 76 | 36.9 |
| Secondary | 91 | 44.2 |
| Tertiary | 23 | 11.1 |
| | Mean (SD) | |
| Age | 66.6 (5.5) | |
| Income (RM) | 2316.9 (2124.7) | |
| GEN-HL index score | 30.6 (10.0) | |

Based on the HL-SF12 scores, males on the average had higher HL than their female counterparts; 32.6 + 8.8 vs. 28.5 + 10.8. This difference was statistically significant ($p<0.01$). HL also corresponded with age – scores decreased as age increased ($r=0.30$, $p<0.01$). Most respondents had inadequate and problematic HL with 27.7% and 35.0% respectively. Figure 1 illustrates the distribution of GEN-HL index scores according to its four categories. Overall, the prevalence of low HL was 62.6%, and high HL, 37.4%.

When comparing the three areas of HL, average scores did not differ much. Respondents scores 11.2 + 3.1 for Area 1 (healthcare), 11.2 + 2.5 for Area 2 (disease prevention) and 11.7 + 2.7 for Area 3 (health promotion). However, sub-analyses revealed that males scored significantly higher than females in all areas. Table 2 shows the scores of the three HL areas according to sex group.

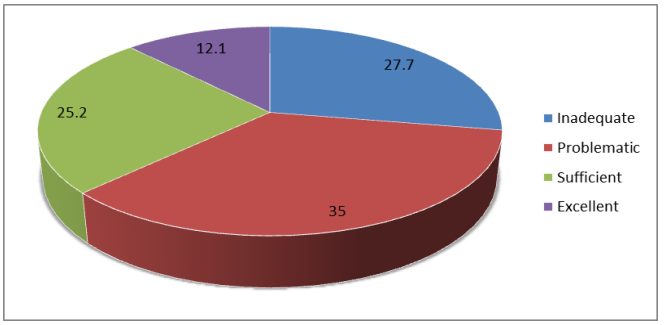


Figure 1. Categories of HL (%) among older adults in Seksyen 24, Shah Alam

Table 2. Scores of HL areas comparing males and females

| Area | Male Mean (SD) | Female Mean (SD) | t-test (p-value) |
|---|---|---|---|
| 1. Healthcare | 11.8 (2.7) | 10.6 (3.3) | <0.01 |
| 2. Disease prevention | 11.5 (2.3) | 10.8 (2.7) | 0.05 |
| 3. Health promotion | 12.2 (2.6) | 11.2 (2.7) | <0.01 |

A similar trend was seen across the four dimensions of HL, where females scored significantly lower than males except in one dimension – finding information – in which there was no score difference between the two groups. Overall, respondents scored highest in Dimension 2 (understanding information) and lowest in Dimension 1 (finding information). In other words, older adults felt it was easy to understand health information, but difficult to find it. Figure 2 illustrates the scores of each HL dimension among our study respondents.

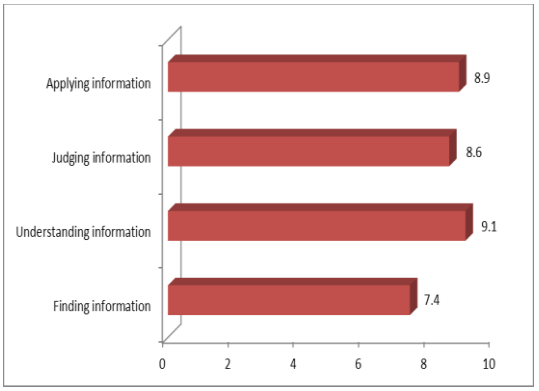


Figure 2. Mean scores of study respondents according to the four HL dimensions

## IV. DISCUSSION

This study aimed to measure the prevalence of HL among older adults in Shah Alam and describe respondents' scores according to HL areas and dimensions. Overall, most older adults (62.6%) had low HL. The National Health and Morbidity Survey (NHMS) in 2015 reported that only 6.6% of Malaysian adults had adequate HL (IKU, 2015). Another smaller-scale study in Pahang found 50.0% of its adult respondents having inadequate or low HL (Norrafizah *et al*., 2016). The discrepancies in proportion between our findings and these two studies are most likely due to the differences in age group and tools employed. However, all point to a similar trend, that a large percentage or at least half of Malaysian adults or older adults have low HL.

Our findings are corroborated by surveys among elders in other countries. For instance, in a study by Smith *et al*., approximately half of American elders had low or inadequate HL (Smith *et al*., 2015). Similarly, almost half of Thai older adults were reported to demonstrate inadequate HL in another survey (Wannasirikul *et al*, 2016). Nevertheless, ultimate comparison is difficult owing to the heterogeneity in socio-cultural contexts and study methods, namely the different tools used in assessing HL. One example is that a number of studies – including the NHMS – utilized the Newest Vital Sign (NVS) to measure HL while our study used HL-SF12.

In this study, results showed that HL declined with age, and that males scored higher than females consistently across all areas and dimensions of HL. The evidence on the link between HL and age is well-established and can be explained in a number of ways. First, getting old is associated with decline in cognitive ability which affects older adults' capacity to understand or recall new topics (Cornett, 2006). Physical impairments such as hearing and vision loss further pose a challenge to elders in processing health information (Speros, 2009). In addition, the gap in physical and cognitive ability between the younger and older generations may cause embarrassment among elders, limiting effective communication and affecting health literacy (Speros, 2009).

A few studies reported higher HL among women than men, but the reason for this has been unclear (Baker *et al*, 2000, Lee *et al*., 2015, Wagner *et al*, 2007, Clouston *et al*., 2017). On the contrary, our findings showed higher scores in men across all HL areas and dimensions. This can be due to age and education factors; our female respondents on the average were older and had lower education than their male counterparts (data not shown). Age and education have been consistently shown to affect health literacy (Erdei *et al*, 2018; Bodur *et al*., 2017, Cornett, 2006). Further explanation for possible gender differences in HL can be a subject of future research.

Across the four dimensions of HL, the most difficult task for older adults was finding information. This was surprising, as older adults were expected to have greater difficulty in understanding and judging, rather than obtaining relevant information. Two important points are worth highlighting here. First, there is a need to understand older adults' behaviour and preferences in seeking health-related information, and that current efforts in disseminating health information may have overlooked this group's nature and capacity. Second, the type of intervention to improve HL among older adults should perhaps focus on making access to health information more age-friendly.

In a survey that ranked older adults' trusted sources of health information, Chaudhuri *et al* found that most elders preferred a person with whom they can actively discuss, compared to a non-living source. Health care providers came first in their list of preference, and the internet, TV and radio came last (Chaudhuri *et al*, 2013). This is in contrast with current movements in digitalizing information and minimizing physical contact with the aim of increasing efficiency and saving time. Today's trends of excessive reliance on the internet perhaps suits the younger generation, while creating more difficulties for older adults to obtain health-related information. Such dilemma should be considered in the designation of health programs and interventions for older adults.

Our study has several limitations. First, most of our respondents were Malay. Little representation by other ethnic groups may affect generalizability of results. Second, we excluded those with cognitive impairment. However, cognitive capacity was not assessed by objective measurements or validated scales. Each interviewer made an independent judgment based on their communication with respondents and reports from family members or caregivers. Third, there were few proxy respondents who helped older adults during the interview due to minor communication issues. However, the number was small and unlikely to cause substantial bias to the results.

## V. CONCLUSION

This study found a high prevalence of low HL among urban elders in Malaysia. Males had higher HL scores than females, and HL decreased with age. The most difficult task across the four HL dimensions was finding information, and this was consistent in both sex groups. As existing evidence has documented the impact of HL on health outcomes, health policies and programs targeting this group need to take several factors into consideration, such as possible gender differences in HL and difficulty to obtain information which may be a result of today's excessive reliance on information technology.

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