

Kertas Asli/Original Article

Development and Acceptance of a Nutrition and Lifestyle Education Booklet to Improve Mild Cognitive Impairment among Elderly
(Pembentukan dan Penilaian Sebuah Buku Kecil Pendidikan Pemakanan dan Gaya Hidup bagi Memperbaiki Kegagalan Kognitif Ringan di Kalangan Warga Tua)

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ABSTRAK

Kegagalan kognitif ringan (MCI) sering berlaku di kalangan warga tua dan boleh menyebabkan dementia. Kajian ini bertujuan untuk membangunkan sebuah buku kecil bagi menerapkan modifikasi amalan pemakanan dan gaya hidup yang sihat bagi melambatkan kemerosotan fungsi kognitif. Suatu siri perbincangan dengan kumpulan penyelidikan yang terdiri daripada dietitian, ahli pemakanan, geriatrik dan perubatan dijalankan bagi menentukan kandungan, grafik dan reka bentuk buku kecil ini. Terdapat tujuh panduan dalam buku kecil ini iaitu; perbanyakkan makan ikan, tingkatkan pengambilan makanan yang kaya dengan asid folik, tingkatkan pengambilan sayur-sayuran dan buah-buahan, bersenam selalu, lakukan aktiviti bagi merangsang daya ingatan, elakkan merokok dan minuman beralkohol serta sentiasa ceria dan positif. Penilaian penerimaan dari segi kandungan, grafik dan reka bentuk dijalankan terhadap warga tua dan kakitangan kesihatan di Klinik Kesihatan Cheras. Penilaian ini melibatkan 15 warga tua Melayu berumur 60 hingga 81 tahun (min umur 66.1 ± 6.6 tahun), iaitu 60.0% lelaki dan 40.0% perempuan. Seramai 10 orang kakitangan kesihatan berumur 36.6 ± 12.0 tahun, dengan julat umur 27 ke 58 tahun, terdiri daripada 20% lelaki dan 80% perempuan turut terlibat. Kebanyakan subjek warga tua (80.0%, $n = 12$) menyatakan bahawa mereka memahami kandungan buku kecil tersebut. Sementara itu, 20.0% ($n = 3$) subjek warga tua menyatakan mereka tidak memahami kandungan buku kecil dari aspek ayat dan istilah. Kesemua kakitangan kesihatan (100.0%) memahami maklumat dalam buku kecil. Buku kecil ini diterima baik oleh subjek warga tua Melayu dan kakitangan kesihatan, walau bagaimanapun mereka mencadangkan supaya lebih banyak gambar rajah dimuatkan, struktur ayat dipermudahkan serta istilah saintifik dikurangkan bagi meningkatkan pemahaman. Buku kecil ini berpotensi dalam meningkatkan pengetahuan pemakanan dan kesihatan warga tua terutamanya yang mengalami MCI dan memotivasi mereka untuk mengamalkan pemakanan dan gaya hidup sihat, seterusnya menurunkan kemerosotan fungsi kognitif dan mencegah dementia.

Kata kunci: Kognitif, pendidikan, buku kecil, warga tua, gaya hidup

ABSTRACT

Mild cognitive impairment (MCI) is a common disorder among elderly and may worsen to dementia. The aim of this study is to develop a nutrition and lifestyle booklet to implement better lifestyle modification, as an effort to delay cognitive decline. A series of discussions with a research group comprising of dietitians, nutritionists, a geriatrician and a public health physician were conducted to ascertain the content of the booklet. There were seven guidelines in the booklet including; eat more fish, eat more foods rich in folic acid, eat more fruits and vegetables, exercise regularly, do activities to stimulate memory, stop smoking and alcohol drinking and stay cheerful and positive. Evaluation of acceptance for the booklet was carried out which comprised of assessment on content, graphic and design among elderly and health staff at health clinic in Cheras. The assessment involved 15 Malay elderly subjects aged 60 to 81 years (mean age 66.1 ± 6.6 years), with 60.0% men and 40.0% women and 10 health staff aged 36.6 ± 12.0 years, with range of 27 to 58 years, consists of 20.0% men and 80.0% women also participated. Most of elderly subjects (80.0%, $n = 12$) indicated they understood information in the booklet. Meanwhile, 20.0% ($n = 3$) of elderly expressed they did not fully understand the content of the booklet in particular on sentence and terminology. All health staff (100.0%) understood the information in the booklet. This booklet was well accepted by elderly subjects and health staff, however adding more graphics, simplifying sentence structures and minimizing scientific terminologies to improve understanding were suggested. The booklet has the potential to increase the nutritional and health knowledge of elderly specifically with MCI. This would motivate them to adopt healthy eating and lifestyle, thus reducing cognitive decline and prevent dementia.

Keywords: Cognitive, education, booklet, elderly, lifestyle

INTRODUCTION

The elderly population worldwide is now increasing, simultaneously expecting the rise in prevalence of age-related diseases. One of the age-related diseases is dementia. Before dementia occurs, some elderly might interfere with mild cognitive impairment (MCI) phase where they perceive memory lost (Petersen 2001).

The prevalence of MCI was reported at 20.9% in the United State (Petersen et al. 2010), while in Malaysia, studies on mild cognitive impairment are still lacking. A study among elderly people in Cheras reported the prevalence of MCI of 15.7% (Wong et al. 2010). Whilst, Sherina et al. (2004) highlighted the prevalence of cognitive impairment among elderly people was 8% to 35% depending on areas in a semi-urban area in Mukim Kajang, Selangor. Another recent study by Lee et al. (2009) reported that prevalence of cognitive impairment among elderly in Klang Valley was 33.0% and 25.6% in men and women, respectively.

Relatively little is known about the causes of MCI. However, studies have persistently showed dietary intake is associated with cognitive impairment (Solfrizzi et al. 2005) and physical activity is a potential protective lifestyle factor in reducing cognitive decline (Rosenberg et al. 2006; Fratiglioni et al. 2004). Apart from that, healthy lifestyle and cognitive training also contributed to enhance memory and reducing cognitive decline among elderly (Flicker 2009). In preventing dementia, lifestyle changes and dietary modifications should be advocated (Flicker 2009).

Elderly people need to be empowered with knowledge on healthy lifestyle specifically to reduce cognitive decline. Previous studies showed that nutritional knowledge among elderly people in Malaysia was not satisfactory (Suzana & Nor Azehan 2002; Norimah et al. 2008).

To date, in Malaysia, there were several guidelines for healthy nutrition and lifestyle for elderly such as '10 Guides for Healthy Eating for Elderly People' by IRPA 06-02-02-0041 EA203 Research Group, UKM (2008) and Malaysian Dietary Guidelines (NCCFN 2010). The family Health Division of Ministry of Health of Malaysia (Ministry of Health 2007) have also developed a series of nutrition education materials for elderly people such as flyers on 'Aging Process,' 'Health Screening of Elderly People,' 'Adjustment at Old Age,' booklets entitled 'Exercises Guide for Elderly,' 'Nutrition Guide for Elderly in the Institutions' and a manual on 'Guide for Caregiver of Elderly People' and 'Guide for Advisory Panel of Health Clinic (Elderly People). However, nutrition and lifestyle component specifically on cognitive enhancement had never been published yet.

Thus, this study aimed to develop a booklet on nutrition and lifestyle guideline for improvement of mild cognitive impairment among elderly people. This paper presents the developmental aspect of the booklet and analysis of its acceptance among elderly people and health staff. This study is part of a larger study on the

effectiveness of fish oil supplementation on MCI among elderly people in Cheras of which ethical approval has been obtained from the local institution, i.e. The Medical Research Secretariat, Universiti Kebangsaan Malaysia Medical Center (UKMMC).

METHODOLOGY

DEVELOPMENT OF BOOKLET

The development of the booklet involved several steps, based on Wizowski et al. (2006) guide in creating patient education material. Firstly, a planning group of a multidisciplinary team comprised of dietitians, nutritionists, a public health physician and a geriatrician was established. A systematic literature review was then performed to assess available materials and identify nutrition and lifestyle factors associated with cognitive performance and dementia occurrence. The content for the education booklet was developed based on literature review with consideration of type of foods and lifestyle habit that is appropriate for Malaysian, using content analysis approach (Konradacki et al. 2002). The content of the booklet was decided and the first draft was then written. Design and illustration were also applied into the booklet after drafting process. A professional artist was employed to come out with illustrations to assist in conveying the nutritional and lifestyle messages in the booklet. The next step involved getting feedback from the research team for face and content validity of the booklet and also suitability of the design. Following this, evaluation of the booklet was carried out to obtain feedback from target group, which were the elderly and the health staff as suggested by Santo et al. (2008).

EVALUATION OF THE BOOKLET

Evaluation of acceptance towards the booklet was carried out according to the evaluation process as suggested by Hawe et al. (1994). The assessment on content, graphic and design among elderly people and health staff was carried out at a public funded health clinic in Klang Valley. The inclusion criteria for elderly subjects were; age 60 years and above, able to read and write, do not have hearing problems, do not have vision problems and do not have mental or terminal illness. The inclusion criteria for health staff was involvement in the care of elderly people for the past one year.

Subjects were asked to complete a self-administered questionnaire consisting of sociodemographic parameters and acceptance evaluation for health promotion towards the education package with respect to content, graphic and design as suggested by Hawe et al. (1994). Subjects were given ample time for one hour in a specific room to read through the educational package. Fieldworkers were available nearby if subjects need any clarification and assistance.

RESULTS

BOOKLET

A booklet entitled '7 Guidelines to Enhance Memory for Elderly' was developed (Figure 1). The booklet addressed seven guides as in Table 1. These guides were identified in the substantial literature review to enhance memory and may prevent dementia. It is a reference guide for elderly who are able to read, their literate caregivers and health professionals.

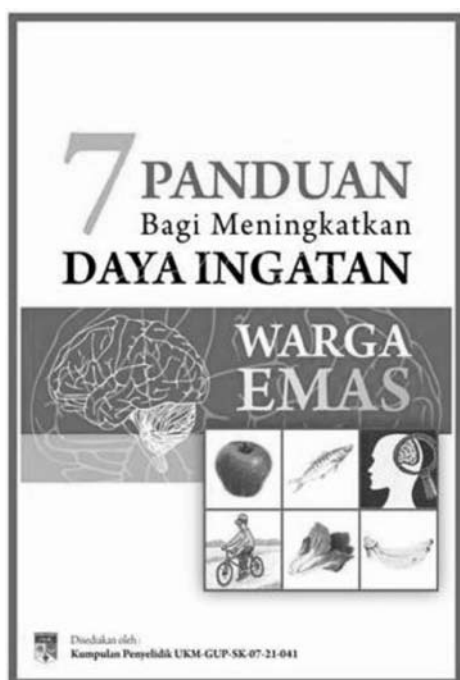


FIGURE 1. Booklet on '7 Guides to Enhance Elderly Memory'

TABLE 1. Key messages of booklet

Booklet (7 messages)	
Message 1:	Eat more fish
Message 2:	Eat foods rich in folic acid
Message 3:	Eat more fruits and vegetable
Message 4:	Do physical activity regularly
Message 5:	Do activity to stimulate memory
Message 6:	Stop smoking and alcohol drinking
Message 7:	Stay cheerful and positive

The 40-pages A-5 size Malay language booklet had an introduction on the importance of good memory and aging. All seven messages in the booklet were presented with colourful illustrations and tables. The importance of each message was explained in paragraph form, followed by the recommendations or suggestion to comply with the message in bullet form. Bold format was used to emphasize keypoints. The booklet also includes a section on healthy

dietary guideline for elderly i.e. the 'food plate' (IRPA 06-02-02-0041 Research Group, UKM, 2008) and 7-day menu based on foods recommended in the booklet.

ACCEPTANCE OF NUTRITION EDUCATION PACKAGE

Assessment of acceptance involved 15 elderly subjects aged 60 to 81 years (mean age 66.1 ± 6.6 years), with 60% men and 40% women. In addition, 10 health staff aged 36.6 ± 12.0 years, with range of 27 to 58 years consisted of 20% men and 80% women also participated.

The results indicated that most of subjects i.e. 80% and 100.0% of the elderly subjects and health staff respectively understood the content of booklet (Figure 2). The analysis of acceptance towards the booklet is described in Table 2.

Some elderly subjects indicated that terminologies (26.7%) and sentence structure (6.7%) were aspects that prevent them from understanding the booklet. Similar comments were highlighted by the health staff i.e. terminologies (10.0%) and sentences (10.0%) may prevent their comprehension. Investigators sought suggestions from subjects on ways to improve the comprehension of the booklet (Figure 3). Elderly subjects suggested adding more figures or illustration (20%), simplifying sentence structures (33.3%) and minimizing scientific terminologies (33.3%) such as mild cognitive impairment and dementia. Suggestions given by health staff were to include more figures or illustration (70%), use simpler and concise sentences (50.0%) and minimise uncommon terminologies (30.0%).

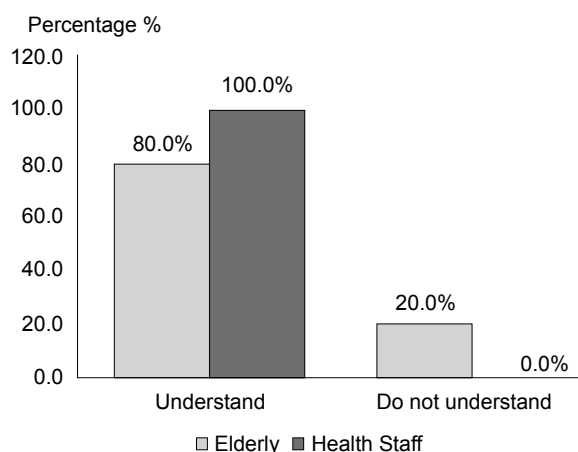
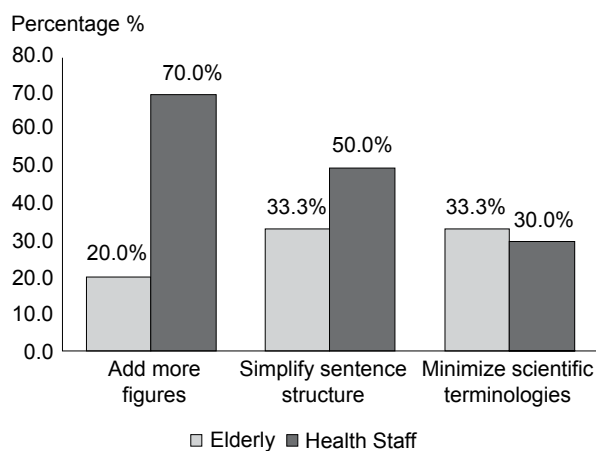


FIGURE 2. Percentage of subjects who understand the content of booklet

TABLE 2. Analysis of acceptance of booklet among elderly and health staff [presented as no (%)]

Assessment parameters	Elderly			Health staff
	Men n = 9 (%)	Women n = 6 (%)	Total n = 15 (%)	Total n = 10 (%)
Age	65.9 ± 6.8	66.3 ± 7.0	66.1 ± 6.6	36.6 ± 12.0
Understanding of information				
Yes	6 (66.7)	6 (100.0)	12 (80.0)	10 (100.0)
No	3 (33.3)	0 (0.0)	3 (20.0)	0 (0.0)
Aspects facilitate comprehension ^a				
Terminology easily understood	3 (33.3)	6 (100.0)	9 (60.0)	9 (90.0)
Sentences clear and easily understood	6 (66.7)	5 (83.3)	11 (73.3)	9 (90.0)
Figures clear, suitable and attractive	6 (66.7)	6 (100.0)	12 (80.0)	10 (10.0)
Tables clear and easily understood	6 (66.7)	5 (83.3)	11 (73.3)	8 (80.0)
Suitability of figures/ illustrations				
Yes	9 (100.0)	5 (83.3)	14 (93.3)	9 (90.0)
No	0 (0.0)	1 (16.7)	1 (6.7)	1 (10.0)
Combination of colours				
Attractive	9 (100.0)	6 (100.0)	15 (100.0)	9 (90.0)
Not attractive	0 (0.0)	0 (0.0)	0 (0.0)	1 (10.0)
Font size				
Easy to read	5 (55.6)	6 (100.0)	11 (73.3)	10 (100.0)
Difficult to read	4 (44.4)	0 (0.0)	4 (26.7)	0 (0.0)

^a Cumulative percentages more than 100% as subjects may have multiple answers.



Cumulative percentage is more than 100% as subjects may have multiple answers

FIGURE 3. Suggestions to improve understanding towards the booklet

DISCUSSION

A research based nutrition and lifestyle education package for elderly with MCI to reduce risk and prevent progress to dementia has been developed. The aim of this guideline is to provide recommendations to enable elderly people to engage in healthy nutrition and lifestyle and consequently to prevention of dementia especially to patient at risk i.e. those with MCI. The nutrition and lifestyle education

package was developed in the form of convenient A5 size booklet, as Bernier (1993) agreed that educational material in A5 size is portable and more convenient for patient education.

The booklet developed in this study would be a valuable tool for patient education, specifically to those with MCI as a way to implement healthy nutrition and lifestyle that may enhance memory. However, it is only a supplement and can never substitute verbal communication with health professionals. This education booklet was developed in printed material form as it is more useful and serve as a continuous source of information for patient (Clark et al. 2005). This 7-messages-containing namely '7 Guides to Enhance Memory for Elderly' booklet specifically delivered as food-based recommendation and specific to nutrition and lifestyle to enhance memory. Other guidelines such as Malaysian Dietary Guideline (NCCFN 2010), Nutrition Guide for Elderly People (Ministry of Health of Malaysia 2007) and '10 Guides on Healthy Aging' (Kumpulan Penyelidik IRPA 06-02-02-0041, UKM, 2008), were focusing on general healthy nutrition guide for elderly. Food-based dietary guideline has been used to develop this booklet as food-based recommendation is more appropriate in conveying nutrition and health messages to the population, as well as presenting information using language and illustration that the public can easily understand and apply in daily lives (Albert et al. 2007). The food-based dietary guides use popular food names and language so that recommendations can be realistically understood (Albert et al. 2007).

Results of the acceptance evaluation towards the education booklet showed that the majority of elderly subjects did not understand scientific terminologies and also suggested the usage of simpler and shorter sentences. After evaluating the results, we have modified the booklet according to the suggestions. Certain scientific terminologies had been modified while some of the terminologies were retained with intention to educate the population on the terminologies but then were explained in simple language in the booklet. Other aspects i.e. figures/illustrations, tables, combination of colour and font size had also been evaluated and were retained. The suggestions by health staff to incorporate more figures/illustrations are in agreement with Aldridge (2004) that recommended the usage of figures or illustrations would facilitate understanding of health messages and help in explaining difficult concepts. Whilst, usage of colour in education package is essential to attract interest of the targeted group as well as easing understanding of information (Eames et al. 2003). The font size used was perceived as acceptable by subjects. In this booklet, a 12-point font size was used, in accordance to Fuhcs et al. (2008) study which stated that optimal size of 9-12 point may reduce localability and comprehensibility. The booklet can be used as guidelines and tools for education by health professionals and NGOs involving in the care of elderly people

CONCLUSION

The newly developed booklet on nutrition and lifestyle guideline for improvement of mild cognitive impairment was well accepted by both elderly subjects and health staff. However, some minor modifications with respect to medical terminologies and addition of more figures/illustrations need to be further improved to facilitate comprehension and acceptance towards the booklet. The booklet has the potential to increase nutritional and health knowledge of older people to prevent or delay cognitive decline leading to dementia, as well as motivate them to adopt healthy eating and lifestyle, thus reduce the morbidity risk and health care cost.

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