ORIGINAL ARTICLE

Psychometric Evaluation of the Reminiscence Functions Scale in the Malay Language for Older Adults

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ABSTRAK

Skala Fungsi Kenangan (RFS) ialah instrumen tinjauan yang biasa digunakan untuk menilai kesejahteraan psikologi dalam kalangan orang dewasa yang lebih tua. Kajian ini bertujuan untuk mengkaji kesahan dan kebolehpercayaan RFS dalam Bahasa Melayu. RFS telah diterjemahkan semula ke Bahasa Melayu oleh dua pakar linguistik bebas, dan diubah suai oleh dua ahli psikologi klinikal. Pemfaktoran Paksi Utama digunakan untuk mengkaji struktur faktor skala yang diterjemahkan. Kesahan konvergen ditentukan dengan menghubungkan skala dengan Skala Kepuasan Hidup (SWLS). Alfa Cronbach digunakan untuk menentukan kebolehpercayaan konsistensi dalaman. Sebanyak 173 orang dewasa yang lebih tua (purata umur = 69.3, SD = 6.64) telah mengambil bahagian. Selepas pemadaman item dengan nilai rendah untuk komunaliti dan pemuatan item, skala akhir yang terdiri daripada 17 item telah diuji. Pemfaktoran paksi utama mengekstrak empat faktor yang menjelaskan 66.9% daripada varians keseluruhan. Alfa Cronbach untuk skor skala adalah sangat baik (0.907), dan baik untuk subskala-subskalanya (Faktor 1 = 0.885, Faktor 2 = 0.877, Faktor 3 = 0.836, dan Faktor 4 = 0.793). RFS versi Bahasa Melayu dan subskala-subskalanya menunjukkan korelasi yang signifikan dengan kepuasan hidup, kecuali subskala Kebangkitan Pahit. Hasil kajian menunjukkan bahawa RFS versi Bahasa Melayu yang terdiri daripada 17 item dengan penyelesaian empat faktor mempunyai sifat psikometrik yang boleh diterima.

Kata kunci: *Kebolehpercayaan; kenangan; kesahan*

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ABSTRACT

The Reminiscence Functions Scale (RFS) is a commonly used survey instrument to assess psychological well-being among older adults. The study aims to examine the validity and reliability of the RFS in the Malay language. The RFS was back-translated into the Malay language by two independent linguistic experts, and modified by two clinical psychologists. Principal Axis Factoring examined the factor structure of the translated scale. Convergent validity was determined by correlating the scale with the Satisfaction with Life Scale (SWLS). Cronbach's alpha determined the internal consistency reliability. A total of 173 older adults (mean age = 69.3, SD = 6.64) participated. After the deletion of items with problematic communality and item loading values, a final 17-item scale was tested. Principal axis factoring extracted four factors explaining 66.9% of the total variance. The Cronbach's alpha for the scale score was excellent (0.907), and good for its subscales (Factor 1 = 0.885, Factor 2 = 0.877, Factor 3 = 0.836, and Factor 4 = 0.793). The Malay RFS and its subscales significantly correlated with satisfaction with life, except the Bitterness Revival subscale. The results suggest that a 17-item Malay RFS with a four-factor solution has acceptable psychometric properties.

Keywords: Reliability; reminiscence; validity

INTRODUCTION

Reminiscence refers to recalling the positive or negative memories of past experiences, and has been associated with positive ageing (Elias 2017; Lou & Choy 2014). Reminiscence is based on the life story of the individual, that assists them to remember and recall past events as the older adult finds time to tell their past experiences to their friends (Lou & Choy 2014). Recalling past experiences to process or escape from a current under-stimulation environment, painful life events and unjust treatment relates to psychological well-being (Cuevas et al. 2020; Lou & Choy 2014; Mustafa et al. 2021). Reminiscence therapy has been shown to be effective and is garnering attention (Tominari et al. 2021), in improving the quality of life (Azizan et al. 2023; Subramaniam et al. 2014), life satisfaction (Lee et al. 2023), communication and social interaction (Md Nasir et al. 2023; Subramaniam et al. 2023) and psychological well-being of older adults (Subramaniam et al. 2012), especially those living in assisted living facilities. It has also been shown to be effective in alleviating depressive symptoms (Liu & Allan 2022; Rahn 2020), loneliness (Elias 2017), cognitive performance (Elias & Neville 2015; Saragih et al. 2022), purpose in life (Justo-Henriques et al. 2021) and death preparations (Gaggiolli et al. 2014; King et al. 2019).

The Reminiscence Functions Scale (RFS) is a commonly used scale to measure reminiscence functions (Webster 1993). The English version of the RFS with 43 items was first developed in the 1990's (Webster 1993) among a community sample to measure their frequency of reminiscing about the past with a particular purpose of function in mind. The scale had been widely used in both clinical and community settings (Lou & Choy 2014; Marques et al. 2023; Westerhof & Bohlmeijer 2014) and had been translated into different languages such as Portuguese (Goncalves et al. 2010) and French (Mezred et al. 2006). In recent years, RFS has been translated into the Chinese language and administered to older adults using the brief version with 14-items

(Lou & Choy 2014).

Malaysia is an ageing society, and this constitutes a challenge for Malaysia's social and economic development (Tey et al. 2015) due to the rise in demands on health care services and the overwhelming need for specialised geriatric care. However, targeted and coordinated frameworks to promote healthy active ageing among older adults are lacking (Rudnicka et al. 2020). In light of this, reminiscence-based interventions may be promising, and yet there is no culturally adapted questionnaire available to evaluate the reminiscence functions of older adults in Malaysia. Therefore, this paper aimed to examine the reliability and validity of the RFS in Malay among older adults. This effort provided a reliable and valid tool that would encourage more researchers and practitioners to examine reminiscence functions in their research.

MATERIALS AND METHODS

Sample Size and Sampling Method

In order to conduct factor analysis, it is generally recommended to recruit at least 100 individuals (Rahn 2020). Convenience sampling among older adults in the Klang Valley region was used to select participants. The age range for inclusion was 60 years old or older for citizens of Malaysia. Participants should also be able to read and understand the Malay language. Individuals with severe mental conditions were excluded from participation.

Measures

- Reminiscence functions scale

The RFS has 43 items which fall into the following domains: (i) Boredom Reduction as reminiscing to relieve feelings of boredom; (ii)

Death Preparation as facilitating acceptance of death; (iii) Identity as appreciating oneself; (iv) Problem-Solving as recognising one's own strengths in dealing with problems; (v) Conversation as developing ways of communication with other people; (vi) Intimacy Maintenance as remembering significant people; (vii) Bitterness Revival as revisiting memories of difficult life events; and (viii) Teach/Inform as sharing life stories with the intent to teach (Marques et al. 2023; Webster 1993). Participants answered each question on a six-point Likert scale ranging from 1 = "Never" to 6 = "Very Frequently". The scores for each domain were summed up, and higher scores indicated higher reminiscence functions within a specific domain. The sum of all domains was needed to obtain the total score. The RFS was selected as the scale had good psychometric properties (Cully et al. 2001). The internal consistency, as measured by Cronbach's alph, was 0.84 (Webster 1993). This was found to be an effective scale to measure reminiscence functions (King et al. 2019). Webster (1993) validated the RFS by using Costa and McCrae's (1991) NEO-Five Factor Inventory (Form S) as the criterion variable in a series of regression analyses, with the RFS factors serving as predictor variables.

- Satisfaction with life scale (SWLS)

The Malay Satisfaction with Life Scale (SWLS) was developed to measure the subjective well-being of individuals (Swami & Chamorro-Premuzic 2009). The scale consists of 5-items rated on a 7-point Likert scale, ranging from 1 = "Strongly disagree" to 7 = "Strongly agree". The scale had been translated to the Malay language and had been examined for its psychometric properties among the Malaysian population. The results showed that the Malay SWLS had good internal consistency with

Cronbach's alpha of 0.83 (Aishvarya et al. 2014; Swami & Chamorro-Premuzic 2009). Since the Malay version of SWLS had been validated for the Malaysian population, and several studies have showed that a moderate to strong association existed between RFS and SWLS among older adults (Bagheri-Nesami et al. 2012; Justo-Henriques et al. 2021). Therefore, we used this questionnaire as our reference to test the convergent validity of the Malay RFS. In the present study, the Cronbach's alpha for the SWLS score was 0.886.

Procedures

- Translation of the RFS

After obtaining permission from the original authors to translate and validate the RFS in the Malay language, the researcher followed the guidelines from the International Test Commission (International Test Commission 2011) in translating the questionnaire from English to Malay. The International Test Commission (2011) is a guideline for translating and adapting psychological instruments across languages and cultural groups. The questionnaire was translated into the Malay language by linguistic experts using forward and backward translation. A meeting was conducted among two clinical psychology experts to refine and harmonise the questionnaire.

- Pilot study

Five individuals were chosen conveniently using the inclusion and exclusion criteria listed in the sample section to facilitate a pilot study. Three women and two men, ages sixty to seventy-five, comprised the participants. Checking the intelligibility of the Malay-language questionnaires among Malaysian older individuals participating in this study was the primary goal of the pilot work. Changes were made to the Malay version based on their feedback, whilst making sure the original concept was kept. A few participants asked questions to clarify their understanding in reference to questions Q3 and Q21. Therefore, changes were made to the Malay version by subject-matter experts to address the translation to be more user-friendly and easier to understand to fit into the context of the targeted population.

Data Collection

Participants recruited were from the Klang Valley, Malaysia. Face-to-face recruitment was done. Before answering the questions, participants were informed on confidentiality and that participation in the study was on a voluntary basis. Written informed consent from participants was obtained and the participants took about 35 to 55 minutes to fill out the questionnaire in pen-and-paper format. The study had obtained approval from the Research Ethics Committee, Universiti Kebangsaan Malaysia (Ethics approval number: JEP-2023-160).

Data Analysis

The IBM SPSS for Windows, Version 27.0 (IBM Corp, Armonk, NY) was used to analyse the data. In this paper, the psychometric properties including internal consistency reliability, factor structure loading of items, inter-domain correlations and convergent validity were tested. The factor structure was examined by Exploratory Factor Analysis (EFA) using Principal Axis Factoring (PAF). Sampling adequacy was measured using Kaiser-Meyer-Olkin (KMO). KMO values vary from 0 to 1. The KMO values between 0.8 to 1.0 indicate the

sampling is adequate. KMO values between 0.7 to 0.79 are middling and values between 0.6 to 0.69 are mediocre. KMO values less than 0.6 indicate the sampling is not adequate and the remedial action should be taken (Shrestha 2021). Varimax rotation was used. Item-to-total correlation was used to exclude items which had a coefficient of less than 0.150. Any item that loaded into two factors with a value of >0.40 in both factors were excluded. In addition, items with low factor loading ($\leq$ +0.40 or $\geq$ –0.40) were excluded.

Internal consistency was derived for each domain and the sum of the scale score based on the Cronbach's alpha coefficient, where an alpha of >0.70 was considered acceptable. In order to test the convergent validity of the RFS with SWLS, Pearson's correlation was used. Pearson's correlation was also used to measure the inter-domain correlations.

RESULTS

Participant Characteristics

A total of 173 participants took part in this study. In Table 1, the socio-demographic characteristics of the participants were shown. The participants' age ranged between 60 and 90 years old (Mean = 69.33, SD = 6.644). More than half of the participants were female (57.8%) and the rest were male (42.2%). Participants that were married comprised 114 individuals (65.9%), and slightly less than half studied up to secondary education (43.4%). More than half of the participants reported no health issues (67.6%). A majority were not employed (88.4%) and 40.5% lived with more than two family members (Table 1).

Item-to-Total Correlations

Item-to-total correlation (ITC) coefficients

ranged from 0.479 to 0.739. According to Kline (1986), the recommended ITC correlation coefficient should be > 0.20. Therefore, we did not omit any items from the scale based on ITC coefficients.

Factor Analysis

In the current study, the KMO was 0.885, which indicated the data were suitable for factor analysis. Table 2 showed the communalities of all values, ranging from 0.541 to 0.836. The extraction communalities represented the proportion of the common variance in each item accounted for by the extracted factors. Therefore, the results showed good extraction values. Cross-loading items and weak items to a total of 26 items (which were items 4, 5, 8, 9, 10, 11,12, 14, 18, 19, 21, 22, 23, 25, 26, 27, 28, 29, 30, 31, 32, 33, 34, 37, 41 and 42) were excluded.

Four factors were derived from Principal Axis Factoring using varimax rotation. The total variance explained from four factors was 66.94%, with Factor 1 (6 items) at 40.74%, Factor 2 (6 items) at 12.22%, Factor 3 (2 items) at 7.64% and Factor 4 (3 items) at 6.33% of the variance explained respectively (Table 2).

Internal Consistency Reliability

All items in the Malay RFS had an acceptable and satisfactory corrected item-total correlation. The Cronbach's alpha value for the sum of the scale score was 0.907. The Cronbach's alpha for Factor 1 was 0.885, Factor 2 was 0.877, Factor 3 was 0.836 and Factor 4 was 0.793. The results indicated good to excellent internal consistency.

Convergent Validity

To test the convergent validity of the Malay RFS,

TABLE 1: Socio-demographic characteristics of the Malaysian older adults in the study (N = 173)

Demographics	n (%)
Gender	
Male	73 (42.2)
Female	100 (57.8)
Age (year)	
60 to 69	99 (57.2)
70 and above	74 (42.8)
Marital Status	
Single	14 (8.1)
Married	114 (65.9)
Divorced	6 (3.5)
Separated	2 (1.2)
Widowed	37 (21.4)
Highest Education Attained	
None at all	15 (8.7)
Primary School	28 (16.2)
Secondary School	75 (43.4)
Diploma	25 (14.5)
Degree	14 (8.1)
Master	16 (9.2)
Health Status	
No Health Issues	117 (67.6)
Presence of a health condition	56 (32.4)
Employment status	
Not Employed	153 (88.4)
Employed	20 (11.6)
Monthly household income	
No Income to less than RM1000	93 (53.8)
RM1001 - RM2000	19 (11.0)
RM2,001 - RM 3,000	11 (6.4)
RM3,001 - RM 4,000	16 (9.2)
RM4,001 - RM5,000	
$\geq$ RM5001	18 (10.4)
Living arrangement	
Living alone	25 (14.5)
Living with one family member	40 (23.1)
Living with two family members	38 (22.0)
Living with more than two family members	70 (40.5)

the scale was correlated with the Malay SWLS. Pearson's correlations showed significant positive correlations between the full-scale score of the Malay RFS and SWLS (r = 0.199, p = 0.009). No significant correlations were recorded between Factor 1: Bitterness Revival and SWLS. The SWLS, however, was positively and significantly correlated with Factor 2: Identity, resilience, and acceptance (r = 0.186, p = .014), Factor 3: Conversation and intimacy maintenance (r = 0.300, p < 0.001) and Factor 4: Practical living (r = 0.298, p < 0.001). The inter-domain correlation coefficients ranged from 0.186 to 0.833. The table showed the scores on the reminiscence domains. All the domains had weak to strong inter-domain correlations, significant at p < 0.05 (Table 3).

TABLE 2: Explained variance, factor loadings and communalities based on a principal axis factoring with varimax rotation for 17 items from the adapted Malay RFS (N = 173)

Item No.	Factors			
	Explained Variance, %	Factor Loading	Communality	Item-to-total correlation
Total	66.94			
When I reminisce it is: *Apabila saya mengenang masa lalu ia adalah:*				
Factor 1: Bitterness revival	40.74			
40. to rekindle bitter memories. *untuk mengembalikan kenangan pahit.*		0.882	0.767	.600
43. to keep memories of old hurts fresh in my mind. *untuk menyimpan ingatan lama yang menyakitkan segar dalam minda saya.*		0.850	0.729	.611
17. to remember an earlier time when I was treated unfairly by others. *untuk mengingati masa lampau ketika saya dilayan secara tidak adil oleh orang lain.*		0.797	0.633	.550
13. to keep painful memories alive. *untuk terus mengingati kenangan yang menyakitkan.*		0.790	0.667	.595
15. to rehash lost opportunities. *untuk mengingati peluang yang telah hilang.*		0.741	0.705	.563
16. to reduce boredom. *untuk mengurangkan rasa bosan.*		0.679	0.563	.583
Factor 2: Identity, resilience and death preparation	12.22			
36. as a means of self-exploration and growth. *sebagai satu cara penerokaan diri dan perkembangan diri.*		0.889	0.750	.644
35. because it helps me see that I've lived a full life and can therefore accept death more calmly. *kerana ia membantu saya melihat bahawa saya telah menjalani kehidupan yang sepenuhnya dan dengan itu boleh menerima kematian dengan lebih tenang.*		0.851	0.742	.631
39. to see how my strengths can help me solve a current problem. *untuk melihat bagaimana kekuatan saya boleh membantu saya menyelesaikan masalah semasa.*		0.810	0.588	.542
20. to transmit knowledge that I've acquired to someone else. *untuk menyampai pengetahuan yang saya perolehi kepada orang lain.*		0.749	0.541	.495

...continuing

24. because it gives me a sense of self-identity. *kerana ia memberi saya rasa identiti diri.*		0.711	0.616	.593
38. because it helps me cope with thoughts of my own mortality. *kerana ia membantu saya menangani pemikiran tentang kematian saya sendiri.*		0.566	0.614	.679
Factor 3: Conversation and intimacy maintenance	7.64			
6. because it brings me closer to newer friends and acquaintances. *kerana ia membawa saya lebih erat dengan kawan-kawan dan kenalan baru.*		0.884	0.819	.503
7. because it promotes fellowship and a sense of belonging. *kerana ia mempromosi persahabatan dan rasa kepunyaan.*		0.849	0.836	.570
Factor 4: Practical living	6.33			
1. to teach younger family members what life was like when I was young and living in a different time. *untuk mengajar ahli keluarga yang muda bagaimana kehidupan saya ketika muda dan kehidupan saya dalam zaman lain.*		0.813	0.747	.509
3. because it fills the gap when I find time "heavy on my hands". *kerana ia mengisi masa apabila saya mempunyai "masa lapang" yang banyak.*		0.784	0.696	.552
2. to help me "put my house in order" before I die. *untuk membantu saya "mengurus rumah dalam keadaan teratur" sebelum saya meninggal dunia.*		0.777	0.665	.525

Note: RFS = Reminiscence Functions Scale

TABLE 3: Pearson's correlation between subscales of the Malay RFS Scale with SWLS

Variable	1	2	3	4	5	6
Total SWLS (1)	1	0.199**	0.005	0.186*	0.300***	0.298***
Total RFS (2)		1	0.810***	0.833***	0.642***	0.705***
Factor 1: Bitterness revival (3)			1	0.451***	0.343***	0.419***
Factor 2: Identity, resilience, and acceptance (4)				1	0.516***	0.485***
Factor 3: Conversation and intimacy maintenance (5)					1	0.443***
Factor 4: Practical living (6)						1

Note: RFS = Reminiscence Functions Scale; SWLS = Satisfaction with Life Scale
***Correlation is significant at the <0.001 level (2-tailed)
**Correlation is significant at the 0.01 level (2-tailed)
*Correlation is significant at the 0.05 level (2-tailed)

DISCUSSION

The focus of the study was to examine the reliability and validity of RFS in Malay language among older adults. In general, the RFS in Malay language had four factors, which were (i) bitterness revival; (ii) self-identity, strengths and acceptance; (iii) social aspect; and (iv) practical aspect. The internal consistency of the sum of scale scores was excellent, indicating that the items were closely related to each other as a group. The scale and three of its domains demonstrated convergent validity through significant positive correlations with the SWLS. However, the negative reminiscence domain, Bitterness Revival, was not significantly correlated.

The current study indicates that the Malay RFS consisting of 17 items is more concise than the original 43-item scale in English. The reason for the exclusion of a large number of items was mainly due to deleting items with cross-loading values of more than >0.40 in two or more factors. In comparison with other extant RFS versions, a short version of the RFS was validated by Chinese researchers, with 14 items and four domains: boredom reduction, bitterness revival, problem solving and identity (Lou & Choy 2014). The Malay RFS items similarly loaded into four factors, but the only domain that was similar to the Chinese version was bitterness revival. The Malay RFS also differed from the eight domains found in the original English RFS (Webster 1993), retaining only Bitterness Revival from the original RFS. Factor 2, identity, resilience, and acceptance, is an amalgamation of items from death preparation, problem solving, teach/inform and identity. This factor reflects inner resilience which arises from a sense of identity and ability to accept one's death. Factor 3 is a composite of Community and Intimacy Maintenance items, reflecting a social aspect of reminiscence. Factor 4 is

named Practical Living to reflect the practical actions undertaken by an older adult to actively transmit knowledge, fill their free time, and prepare for their death through putting everything in order. Differences between the original RFS (Webster 1993) and the Malay RFS may be due to different demographics of the Malaysian participants, in whom the functions of reminiscence may be different from Western models. Studies validating the RFS in other cultures/populations has also shown different factor structures, such as in the Portuguese version, in which five factors were derived (Goncalves et al. 2010) and the Spanish version, in which three second-order factors were found through structural equation modelling (Ros et al. 2016). This indicates that reminiscence functions could be conceived differently in different cultures.

This study also assessed the convergent validity of the Malay RFS. Factor 1, Bitterness Revival, demonstrated no correlation with life satisfaction. This result is not consistent with O'Rourke et al. (2016) who found that the negative function of Bitterness Revival was linked with lower life satisfaction. The lack of significance in our findings may point to underlying cultural variations in the way older adults in our sample respond to reminiscing with bitterness, and warrants further investigation among older adults in Malaysia.

However, the overall scale and other subscales showed a strong correlation coefficient. Our findings are consistent with another Malaysian study by Elias (2017) which found that RFS was a strong predictor of satisfaction with life among Malaysian elderly individuals in long-term care. This positive correlation may be due to reminiscence being linked with other factors commonly associated with life satisfaction enhancement, such as quality of life and psychological well-being (Gil et al. 2019; Marques et al. 2023; Tam et al.

2021).

There are a few limitations in this study. It is possible that older persons who are non-literate are underrepresented in this study compared to the greater Malay speaking community. The cross-sectional also used convenience sampling, in which boas could not be ruled out. Therefore, the results of this study should be interpreted with caution and may not be generalisable to all older adults in Malaysia. To be more representative of older persons in Malaysia, the sample size might be expanded to include a bigger population through cluster random sampling. Another limitation of the present study included agreement-disagreement bias which may have been experienced by participants when answering questions. It refers to the tendency of participants to agree with all positively phrased items while disagreeing with all the negatively worded items (Ryff & Keyes 1995). Next, we did not conduct a medical history review or a cognitive or affective assessment to determine the participant's suitability to join this study. We had instead relied on the verbal feedback of the participants on whether they had a severe mental health condition to determine the exclusion criterion. Finally, apart from EFA and convergent validity, we did not conduct other validity analyses or comparisons with other measures. Future studies could consider using instruments other than the SWLS.

CONCLUSION

In conclusion, this paper contributed to establishing the validity and reliability of the Malay RFS among older adults in Malaysia. A 17-item scale consisting of four-factor general reminiscence functions subscales is indicated. This scale demonstrated excellent internal consistency, and convergent validity through a positive correlation with the SWLS.

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