



Psychometric Evaluation of the Brief 2-Way Social Support Scale Among Malaysian Older Adults

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Abstract

The Brief 2-Way Social Support Scale (SSS) is a newly developed measure of four dimensions of social support: (i) giving emotional support, (ii) receiving emotional support, (iii) giving instrumental support, and (iv) receiving instrumental support. To date, there is limited study on the psychometric qualities of the Brief 2-Way SSS. The current study explored the composite reliability and validity of the original Brief 2-Way SSS in a sample of Malaysian older adults aged 60 and above. In contrast to the past findings, confirmatory factor analysis on 249 valid responses recommends a second-order model consists of one general factor of social support and four first-order factors outperformed other competing models. The scale also showed good reliability, convergent validity, and discriminant validity. Moreover, concurrent validity was evident by the positive relationship between the Brief 2-Way SSS scores and life satisfaction. The findings support that the scale is an adequate tool to measure the four dimensions of social support for older adults in the Malaysian context. However, more studies are warranted to verify the factorial structure before considering the scale for cross-cultural studies.

Keywords Asia · Brief 2-Way Social Support Scale · Construct validity · Factor analysis · Malaysia · Older adult

The world's ageing population is expected to hit 1.5 billion in 2050 (United Nations, 2019). It is critical to upgrade the existing infrastructures and policies to promote citizens especially older adults' quality of life, well-being, and health. For example, it is suggested to enhance accessibility to public spaces in housing areas for physical

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activities (da Silva Sousa & de Azevedo Barros, 2020) and accessibility to public transportation (Lim et al., 2020). Meanwhile, studies have also consistently shown that social support is a promising factor to promote older adults' physical health and well-being (e.g. Choi & Wodarski, 1996; de León et al., 2020; Kahn et al., 2003; Rey et al., 2019; Yang et al., 2019).

Social support is a multidimensional construct; it imitates a personality aspect that affects several components of a person's life and how it evolves (Sarason & Sarason, 2009). Zhou et al. (2020) define social support as the protection, care, comfort, and assistance that people receive from family members, relatives, peers, friends, institutions, and societies. The functionality of social support could also be in the form of encouragement for individuals, namely, the way they deal with stress and interact with a dilemma (Gan et al., 2020). Several studies highlighted the importance of social support in older ages by reporting the association between social support and well-being in older adults. In a recent study by Hosseini et al. (2021), it was stated that older adults who reported a higher level of perceived social support, reported a lower level of depression and stress. The importance of perceived social support in older adults and its association with their well-being was emphasized by other studies such as Seddigh et al. (2020) and Khademloo et al. (2020) in other countries as well.

Emotional support and instrumental support are the two prominent categories of social support (Declercq et al., 2007). Emotional support is about understanding and insight about being honoured, appreciated, cared for, and loved (Barańczuk, 2019; House, 1981; Semmer et al., 2008). People provide emotional supports to others through the exhibition of (verbal and nonverbal) care and compassion, paying attention, understanding, and affirmation (Atoum & Al-Shoboul, 2018). Instrumental support is about the different forms of tangible assistance offered by others (Barańczuk, 2019; Otsuka et al., 2019). For instance, instrumental supportive individuals help others to overcome problems at hands (e.g. assisting with a chore, shopping for someone who is disabled) or provide insight (Semmer et al., 2008).

Both emotional and instrumental social supports are valuable and important for older adults' health and well-being (White et al., 2009). For instance, both emotional and instrumental social support are related to a lower level of loneliness feeling (Ellwardt et al., 2013) and a lower likelihood of developing depressive symptoms after experiencing disaster damages (Sasaki et al., 2019). It is also shown that emotional social support has a negative relationship with disability in Malaysian older adults (Haron et al., 2018).

In view of the beneficial role of social support, Shakespeare-Finch and Obst (2011) developed the 2-Way Social Support Scale (SSS) to examine emotional and instrumental social supports. Also, unlike other social support measurements, the 2-Way SSS considers two functions of social supports in both giving and receiving directions. This feature is helpful to expand the social support literature by allowing researchers to investigate the impact of both giving and receiving social support. Although some researchers have already investigated giving social support (before the development of the 2-Way SSS) and showed that giving social support has a superior impact than receiving support on older adults' well-being and health (Brown et al., 2003; Steffens et al., 2016; Thomas, 2010), most of the studies did not

use a validated measurement (of giving social support). Hence, the emergence of the 2-Way SSS provides the researcher with a tool to assess the giving and receiving social support and then explore the underlying mechanism of the beneficial role of giving and receiving social support.

The 2-Way SSS consists of 20 items to tap into four dimensions of social support: receiving emotional support (7 items), giving emotional support (5 items), receiving instrumental support (4 items), and giving instrumental support (4 items). Shakespeare-Finch and Obst (2011) found that the 20-item 2-Way SSS is best explained by a second-order model with receiving social support and giving social support as the high-order factor and the four dimensions of social support as the first-order factors. The 2-Way SSS showed to have acceptable reliability. The internal consistency (measured by Cronbach alpha) of the subscales ranged from 0.81 to 0.92. The 2-Way SSS scores also significantly predicted measures of well-being such as life satisfaction and stress and offered an additional explanation to well-being and health over Social Support Questionnaire (Sarason et al., 1983) and Berlin Social Support Scale (Schulz & Schwarzer, 2003), supporting the predictive and incremental validity of the 2-Way SSS. The 2-Way SSS has also been applied in diverse cultural contexts (e.g. Inagaki et al., 2016; Israel-Cohen & Kaplan, 2016).

Although the preliminary results support that the 2-Way SSS has sound psychometric qualities, Shakespeare-Finch and Obst (2011) highlight the necessity of further examining the properties of the 2-Way SSS on different populations. To address the need, Obst et al. (2019) examined the factor structure, reliability, and validity of the 2-Way SSS among 306 older adults in Australia. Interestingly, confirmatory factor analysis (CFA) showed that the original model with 20 items was moderately fit. To explore the most parsimonious model, Obst et al. (2019) referred to modification indices and removed eight items with high error intercorrelations or low loadings. The new 12-item version was named the Brief 2-Way SSS to distinguish it from the original 20-item version. CFA on the 12 items demonstrated that theoretical second-order model with two second-order factors (i.e. receiving and giving social support) and four first-order factors (i.e. receiving emotional, receiving instrumental, giving emotional, and giving instrumental social supports) beats the one-factor model and the two-factor (i.e. receiving and giving social support) model. Moreover, the four subscales demonstrated good internal consistency ranging from 0.749 (giving instrumental social support) to 0.877 (receiving emotional social support) at time 1. The same pattern was observed at time 2 (3 months after the first measure) with 0.766 for giving instrumental social support and 0.903 for receiving emotional social support. Moreover, the test–retest reliability was acceptable to satisfactory: 0.700 for receiving emotional, 0.720 for receiving instrumental, 0.689 for giving emotional, and 0.728 for giving instrumental social supports.

Despite the Brief 2-Way SSS has been recognized to be an appropriate tool for older adults (Obst et al., 2019), it is inappropriate to generalize the findings to different cultural contexts. Indeed, studies have found that some items of scales validated in the Western context do not apply to Malaysian samples (e.g. Tan & Qu, 2012; Tan et al., 2019). While different social support measurements have been used in research on the older adults in Malaysia (e.g. Ibrahim et al., 2013; Yahaya et al., 2013), we find that to date no studies applied the relatively new Brief 2-Way SSS in

the Malaysian context. Considering the advantage of the 2-Way SSS in measuring perceptions of social support given and received, it is believed that the scale will be useful for research in older adults' population. Hence, the present study mainly aimed to explore the psychometric properties (i.e. factorial structure, internal consistency, construct validity, and concurrent validity) of the original English version of the 12-item Brief 2-Way SSS to understand whether the scale can be applied for older adults in the Malaysian context. In addition, the relationship between the Brief 2-Way SSS scores and life satisfaction was examined to explore the concurrent validity of Brief 2-Way SSS in older adults in the Malaysian context.

Life satisfaction is one of the main aspects of positive well-being. It refers to how individuals evaluate their life as a whole rather than the feeling that they have at the current moment (Diener et al., 1999). As stated by Kasprzak (2010), life satisfaction is linked to the affective and reflective attitude toward life and it is about how a person perceives and assesses her or his past along with the experienced affect. Several studies showed that social support has a positive relationship with life satisfaction among older adults in different cultural contexts such as Turkey (Altıparmak, 2009; Şahin et al., 2019; Yurcu, 2017), Iran (Leila et al., 2016), India (Prakash & Srivastava, 2020), and China (Chen et al., 2019). The same finding has also been observed in other age groups such as children (Siqueira et al., 2011), adolescents (Siddall et al., 2013), and young adults (Li et al., 2011).

Considering the fact that the number of older adults' population is increasing in all countries (United Nations, 2019), population statistics estimate that the rate of population ageing will increase in the coming decades in Malaysia as well. As it is estimated, Malaysia will become an ageing nation by 2030 when 14% of the population will be 60 or older, and this number will rise to 24% by 2050 (Samad & Mansor, 2017). Hence, studying factors related to this population's well-being is important and help to understand this population from different aspects. Referring to the importance of social support in older adults' well-being and life satisfaction, it is crucial to explore the tools to assess this factor in the older adults' population. Therefore, the need for a reliable and valid measurement is obvious. Examining the psychometric properties of the Brief 2-Way SSS will help researchers to conduct research in the Malaysian older adults' population by utilizing a reliable and valid tool. Using the proper assessment tool can help researchers to comprehend more the impact of social support on different aspects of older adults' lives, which can help governments, policymakers, mental health professionals, and individuals to understand the role of giving and receiving emotional and instrumental social supports in Malaysian older adults' lives from different aspects through different studies.

Method

Participants and Procedure

The inclusion criteria of this study were Malaysian older adults who were 60 years old and above. The convenience sampling method was used to recruit participants from different locations such as old-folk homes, senior communities, and senior

clubs and gatherings in different states (i.e. Perak, Penang, Selangor, and Kuala Lumpur) in Peninsular Malaysia.

A total of 254 individuals answered the survey online or in paper-and-pen form. Four participants who were not living in Malaysia and one participant who reported age of 27 were excluded. Of the 249 participants ($M_{\text{age}}=65.72$, $SD=5.36$, range=55 to 95), there were 112 males and 137 females. The sample consisted of 98 Chinese, 95 Malays, 49 Indians, and 7 others. There were 96 Muslims, 73 Christians, 46 Buddhists, 27 Hindus, and 7 others. More than half (54.6%) of the participants co-resident with children, 31.7% were living independently, 0.8% was institutional resident, and 12.9% others. Half of the participants (50.2%) reported a history of medical illness. In terms of monthly income, 55% of participants have below RM 3000, 20.1% between RM 3000 and RM 5999, 10% between RM 6000 and RM 8999, and 14.9% above RM 9000.

The research approval was obtained from the Scientific and Ethical Review Committee of the [masked for blind review] (ref. no: masked for blind review). The objective of the study was presented to participants and informed consent was acquired from every participant before the commencement of the survey. Participants were also informed that they can withdraw from the study at any time they wanted. The research was conducted in accordance with general ethical guidelines in psychology.

Measurement

Brief Two-Way Social Support Scale (Brief 2-Way SSS; Obst et al., 2019)

The 12-item Brief 2-Way SSS is a self-report of the subjective experience of the four types of social support: (1) receiving emotional, (2) giving emotional, (3) receiving instrumental, and (4) giving instrumental social support using a 6-point scale ranging from 0 (not at all) to 5 (always). Higher (total) scores represent substantial social support provided as well as obtained. The original English version of the Brief two-way Social Support Scale was used in this study as English is the second language in Malaysia.

Satisfaction with Life Scale (SWLS; Diener et al., 1985)

Participants responded to the five items on a 7-point Likert scale (1: strongly disagree; 7: strongly agree) to indicate the extent to which they are satisfied with their life. Individuals who reported a high (total) score are believed to have a higher level of life satisfaction. The SWLS showed excellent reliability (McDonald $\omega=0.927$) in the present study.

Statistical Analysis

The lavaan (Rosseel, 2012) package in R was used to conduct confirmatory factor analysis (CFA) with diagonally weighted least squares (DWLS) estimator to inspect

the factor structure of the Brief 2-Way SSS, while composite reliability (CR) was examined using McDonald omega coefficient (ω) computed with semTools (Jorgensen et al., 2018) R package. A model is acceptable if the chi-square to degrees of freedom ratio < 3 , comparative fit index (CFI) and Tucker-Lewis index (TLI) > 0.95 , root mean square error of approximation (RMSEA) < 0.06 , and standardized root mean residual (SRMR) < 0.08 (Hu & Bentler, 1999; Kline, 2010).

Furthermore, we explored construct (i.e. convergent and discriminant) validity and concurrent validity of the Brief 2-Way SSS. Convergent validity (of a subscale) is supported if its average variance-extracted (AVE) value is greater than 0.50, while discriminant validity is evident if the AVE value is higher than the highest squared correlations between the subscale with another subscale (i.e. maximum shared variance [MSV]; Hair et al., 2019). Concurrent validity was examined by correlating the 2-Way SSS scores with life satisfaction scores.

Results

Several CFAs were conducted in the present study to examine and compare the following competing models: one-factor model (model 1), two-factor model with giving social supports and receiving social supports (model 2), another potential two-factor model with emotional social supports and instrumental social supports (model 3), four-factor model (model 4), and the theoretical second-order model with two second-order factors (i.e. receiving social supports and giving social supports) and four primary-order factors (model 5). Besides, we also investigated the second-order model with a (second-order) general factor (i.e. social supports) and four primary-order factors (model 6) on an exploratory basis.

Model 1 to model 4 showed mixed results (see Table 1). All fit indices but not SRMR were within the range for model 1 and model 3. Meanwhile, the TLI value was greater than 1 and RMSEA value was zero for model 2 and model 4, suggesting that the two models could be problematic. Model 5, the hypothetical model, was found to have a negative variance. We referred to the output and fixed the variance to 1. The issue was resolved after fixing the variance of the giving emotional support factor, item 4, giving instrumental support factor, and item 10. The modified model, however, showed a poor fit. Finally, model 6 was found to have a good fit for the data and superior to the other models. Therefore, model 6 (see Fig. 1) is preferred to represent the structure of the Brief 2-Way SSS. The standardized factor loadings are statistically significant at 0.001 level and ranged from 0.621 (item 9) to 0.935 (item 5).

Table 2 shows the descriptive statistics, CR, AVE, and MSV for the Brief 2-Way SSS. Reliability analysis showed omega coefficients for the overall and four dimensions of the Brief 2-Way SSS were above 0.81. Similarly, the Satisfaction with Life Scale also has good internal consistency. The Brief 2-Way SSS also showed good convergent validity. All AVE values were greater than 0.50, ranging from 0.599 (receiving instrumental support) to 0.769 (receiving emotional support). Likewise, the discriminant validity of the Brief 2-Way SSS was supported as the AVE value was greater than the MSV value for the four dimensions.

Table 1 The fit indices for the alternative models of the Brief two-way Social Support Scale using DWLS estimator

Model	χ^2	df	χ^2/df	CFI	TLI	RMSEA [90% CI]	SRMR
1 One-factor	96.632***	54	1.789	0.982	0.978	0.056 [0.038, 0.074]	0.105
2 Two-factor (G & R)	22.589	53	0.426	1.000	1.016	0.000 [0.000, 0.000]	0.051
3 Two-factor (E & I)	94.471***	53	1.782	0.982	0.978	0.056 [0.037, 0.074]	0.104
4 Four-factor	15.983	48	0.333	1.000	1.019	0.000 [0.000, 0.000]	0.042
5 2nd-order with two general factors ^a	300.863	53	5.677	0.894	0.868	0.137 [0.122, 0.153]	0.193
6 2nd-order with one general factor	57.101	50	1.142	0.997	0.996	0.024 [0.000, 0.049]	0.078

Note. $N=249$. *CFI* comparative fit index, *TLI* Tucker-Lewis index, *RMSEA* root mean square error of approximation, *CI* confidence interval, *SRMR* standardized root mean residual, *G & R* giving and receiving social support, *E & I* emotional and instrumental support

^aVariance of the giving emotional support, item 4, giving instrumental support, and item 10 was fixed to 1 to address the issue of negative value

*** $p < .001$

The Pearson correlation results support the concurrent validity of the Brief 2-Way SSS. There was a positive relationship between the overall score of the scale (i.e. summation of the 12-item scores) and life satisfaction scores, respectively. Similarly, the four first-order factor scores were positively associated with life satisfaction scores. All the correlations were statistically significant at 0.001 level. We also conducted a comparison among the correlation coefficients using an online calculator (Soper, 2021) to understand if the differences are statistically significant. It was found that the relationship between giving emotional support and life satisfaction was significantly greater than the relationship of receiving emotional support ($p=0.036$) and receiving instrumental support ($p=0.012$) with life satisfaction, respectively. On the other hand, the relationship between giving instrumental support and life satisfaction was significantly greater than the association between receiving instrumental support and life satisfaction ($p=0.022$). Significant differences were not found in the other comparisons.

Discussion

The 12-item Brief 2-Way SSS (Obst et al., 2019) is a newly developed short-form of the 2-Way SSS (Shakespeare-Finch & Obst, 2011). The present study examined the psychometric qualities of the Brief 2-Way SSS in a sample of Malaysian older adults aged 60 years old and above.

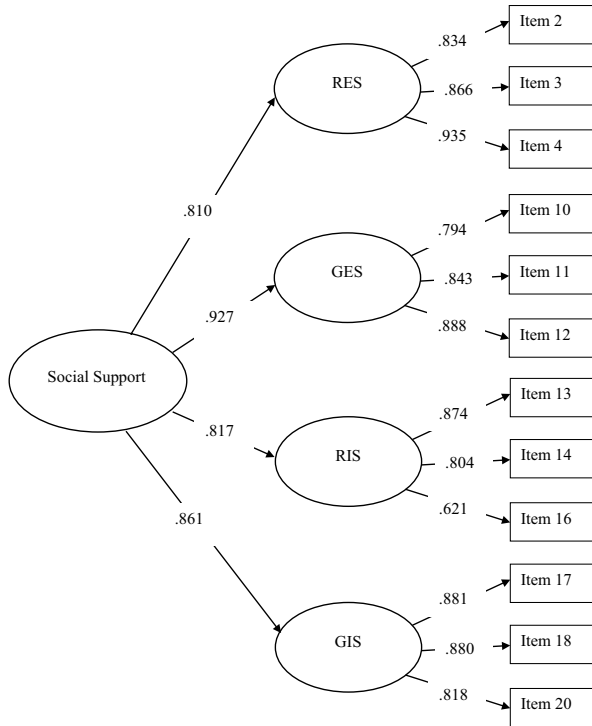


Fig. 1 The best fit model of the 12-item Brief 2-Way Social Support Scale with standardized factor loadings. Note. RES, receiving emotional support; GES, giving emotional support; RIS, receiving instrumental support; GIS, giving instrumental support. Item numbers reflect those published in Shakespeare-Finch and Obst (2011)

Table 2 Descriptive statistics, intercorrelations, and composite reliability for the 12-item Brief two-way Social Support Scale and Satisfaction with Life Scale

Item	<i>M</i>	<i>SD</i>	1	a	b	c	d	2
1. Soc. Support	45.84	10.98	(.877)					
a. RES	11.71	3.48	.860	(.909)				
b. GES	11.00	3.41	.876	.622	(.878)			
c. RIS	11.81	3.03	.824	.732	.539	(.815)		
d. GIS	11.31	2.96	.849	.549	.816	.552	(.896)	
2. Satisfaction	25.90	6.87	.586	.451	.588	.421	.575	(.922)
AVE	–	–	–	.769	.706	.599	.742	.704
MSV	–	–	–	.535	.666	.535	.666	–

Note. *N* = 249. *M*, mean; *SD*, standard deviation; *Soc. Support*, social support; *RES*, receiving emotional support; *GES*, giving emotional support; *RIS*, receiving instrumental support; *GIS*, giving instrumental support; *Satisfaction*, life satisfaction; *AVE*, average variance-extracted; *MSV*, maximum shared variance

The diagonal line value (in parenthesis) is the McDonald’s omega coefficient

All the correlations were statistically significant at .001 level

In contrast to the findings of Obst et al. (2019), our results revealed that the structure of the Brief 2-Way SSS is best accounted for by a second-order model with a (second-order) general factor of social support and four first-order factors (i.e. receiving emotional, receiving instrumental, giving emotional, and giving instrumental supports). The discrepancies convey two interesting messages. On the one hand, the four types of social supports are sustainable between the Australian and Malaysian samples, indicating that the four dimensions are less likely to be influenced by cultural differences. On the other hand, the discrepancy in the second-order factor implies that our participants tend to perceive that the four dimensions are best accounted for by general social support rather than two specific dimensions of receiving and giving social support. Note that, however, Obst and colleagues did not examine the second-order model with one general factor. Therefore, it is unclear whether the said model is superior to the second-order model with two specific factors for the Australian sample. More studies are warranted to further investigate the two potential models to shed light on the factorial structure of the Brief 2-Way SSS.

The Brief 2-Way SSS demonstrates good internal consistency. Indeed, the reliability results of the four first-order factors are in line with (and slightly higher than) the findings of Obst et al. (2019). We also examined the reliability of the general higher-order factor and found promising results. The outstanding internal consistency signifies that the items are cohesive and capture the same underlying construct.

We went beyond Obst et al. (2019) to investigate the construct validity. Inspection on the AVE values indicates that all the four dimensions of the Brief 2-Way SSS have sound convergent validity. Similarly, the comparison between AVE and MSV values showed that the four dimensions also have sound discriminant validity. The results imply that our participants can distinguish among the four specific types of social support.

The Brief 2-Way SSS shows good concurrent validity. General social support was found to have a positive relationship with life satisfaction. Similar results were also observed for the four first-order social support scores, respectively. The findings are coherent with past findings (e.g. Chen et al., 2019; Leila et al., 2016; Prakash & Srivastava, 2020; Şahin et al., 2019; Yurcu, 2017). In addition, our results showed that giving emotional supports and giving instrumental supports consistently showed a stronger correlation with life satisfaction than receiving instrumental support. On the other hand, giving emotional supports, but not giving instrumental support, had a stronger relationship with life satisfaction than receiving emotional support. A similar pattern was also found in Obst et al. (2019). The congruency not only supports the validity of the Brief 2-Way SSS in a different cultural context but also highlights the importance of social support for elder adults' well-being. Specifically, elder adults who provide emotional social supports to others tend to be more satisfied with their life.

Implications of the Findings

The findings demonstrate that the Brief 2-Way SSS has sound psychometric qualities in the Malaysian context. Therefore, it is reasonable to recommend the scale for studies on social support among older adults in Malaysia. For example,

the Brief 2-Way SSS can be used to identify the elements that promote (or hinder) the four specific types of social support as well as the unique consequences of each type of social supports on elderly's well-being and physical health. In a similar vein, the (partial) consistency between our findings and Obst et al. (2019) findings offer preliminary support that the Brief 2-Way SSS is a potential tool for cross-cultural studies on social support, especially when focusing on the four specific dimensions of social support. Another practical implication of the present study is helping older adults to discover the joy of their life. Our results demonstrate that giving emotional social supports plays a relatively critical role in elderly's life satisfaction. Hence, practitioners and family members are recommended to prepare opportunities for elderly to offer emotional social supports. One of the possibilities is teaching older adults to deliver their concerns and supports through social networking sites or instant messaging smartphone applications. On the other hand, the discrepancy between the final model found in the present study and past studies suggests a new direction for theoretical improvement. In particular, the inconsistencies imply perceptual differences in the four types of social supports between the samples. Future researchers are recommended to recruit older adults from different cultural contexts and compare the two competing models to shed light on the model that works cross-culturally.

Limitations and Recommendations for Future Studies

Several limitations of the present research shall be highlighted for future researchers' consideration. First, we only collected data from a one-time point, and hence, the test–retest reliability of the Brief 2-Way SSS remains unknown. In the same vein, we did not examine the predictive validity of the scale. Future researchers may follow Obst et al. (2019) practice to employ a longitudinal design to understand the extent to which the Brief 2-Way SSS scores predict psychological well-being and perceived stress, respectively. Doing so can shed light on both test–retest reliability and the predictive validity of the scale. Finally, although our CFA results recommend the second-order model with a general factor and four specific factors, it is premature to conclude that the model is superior to the second-order model with two general factors revealed by Shakespeare-Finch and Obst (2011) and Obst et al. (2019). Future researchers are suggested to further examine the two models to identify the one that applies to older adults in different cultural contexts. Then, a measurement invariance test can be conducted to ensure that the comparison between cultural groups is meaningful and reasonable. It is also recommended to investigate the usability of the Brief 2-Way SSS on other age groups. For example, researchers may employ the scale to expand the positive relationship between social support and happiness among young adults (Tan et al., 2017, 2018) by revealing the essential types of social supports.

Conclusion

The Brief 2-Way Social Support Scale is a newly developed short-form that measures four dimensions of social support. Investigation of the factorial structure, reliability, and (construct and criterion) validity supports that this scale is a useful tool for measuring social supports among older adults in Malaysia.

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Author Contribution All authors have contributed significantly, and that all authors agree with the content of the manuscript. Conceptualization, funding acquisition, methodology, data collection and screening, writing—original draft preparation, and review was done by Sonia Khodabakhsh. Formal data analysis and investigation, writing—original draft preparation of results and discussions, and reviewing the final report was done by Chee Seng Tan.

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Data availability The data that support the findings of this study are available from the corresponding author upon reasonable request.

Declarations

Ethics Approval The research approval was obtained from the Scientific and Ethical Review Committee of Universiti Tunku Abdul Rahman (Re: U/SERC/32/2020), Malaysia.

Consent to Participate Written consent was obtained from individuals who participated in this study.

Consent for Publication Not applicable to this study.

Conflict of Interest The authors declare no competing interests.

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