Psychometric evaluation of the Multi-Dimensional Scale of Perceived Social Support in young adults with chronic health conditions

F. Nearchou[1,2,*] 🄳 , A. Davies[1] and E. Hennessy[1]

[1] *School of Psychology, University College Dublin, Dublin 4, Ireland*
[2] *School of Social Applied Sciences, De Montfort University, Leicester, UK*

Introduction. The Multi-Dimensional Scale of Perceived Social Support (MSPSS) is one of the most widely employed tools for measuring perceived social support from three sources: family, friends and a significant other. This study aimed to establish the factor structure of the MSPSS in young adults living with chronic health conditions (CHCs). It also aimed to examine the reliability and convergent validity of the tool.

Methods. A cross-sectional quantitative design was applied. Participants (*n* = 123, 90 females) were students aged 18–25 years recruited from Colleges of Further Education in Ireland (mean age of 20.1 years, S.D. = 2.43). Participants completed the MSPSS and two subscales of the Medical Outcomes Study 36-item Short Form Health Survey that assessed social functioning and emotional well-being.

Results. Exploratory factor analysis yielded a three-factor solution of the MSPSS in young adults living with CHCs. The three factors together explained 83% of the variance in MSPSS scores. All the items had high loadings on the factors (0.72–0.94). The MSPSS showed satisfactory reliability and convergent validity.

Conclusions. These findings suggest that the MSPSS is a valid and reliable tool for measuring perceived social support from three sources in young adults living with CHCs. Social support has been associated with positive outcomes in young adults living with CHCs, thus it is imperative for researchers and clinicians to have access to psychometrically sound instruments to evaluate the construct.

Introduction

Emerging adulthood, usually spanning from 18 to 25 years, is a life stage that marks the transition from adolescence to adulthood and entails significant developmental milestones for young people. Some of these milestones include engaging in identity formation, balancing family and peer influences and establishing social competences and independence (Blatt *et al.* 2005). Young adults living with a chronic health condition (CHC), either physical or mental, face the same challenges and milestones as their healthy peers, but they also have to deal with the burden of living with a CHC. Research shows that living with a CHC may impair the achievement of these milestones and result in poor quality of life outcomes (Pinquart, 2014). Symptoms associated with a CHC (e.g. pain, depressed mood) impose additional constraints to young adults' lives such as absenteeism from their studies or workplace and limitations to social life. This has been associated with loneliness and elevated levels of stress (Herts *et al.* 2014).

Social support is an important element in the lives of young adults living with CHC because it has been associated with better quality of life outcomes (Andrinopoulos *et al.* 2011; Haase *et al.* 2017). Social support is a multi-dimensional construct defined as the emotional, informational or instrumental assistance provided to an individual by others (Brownell & Shumaker, 1984; Thoits, 2011). Social support can be categorised into perceived and received social support, which is an important distinction regarding the measurement of the construct (Haber *et al.* 2007). Received social support refers to the frequency with which any aspect of social assistance is received (Dour *et al.* 2014), while perceived support refers to an individual's perception of received and available assistance from support network members, created by numerous experiences of support over time (Thoits, 2011). Perceived support has been more commonly associated with positive health outcomes

*Address for correspondence: F. Nearchou, School of Psychology, University College Dublin, Belfield, Dublin 4, Ireland.
(Email: niki.nearchou@ucd.ie)

in young adults living with CHC (Wodka & Barakat, 2007).

The Multi-Dimensional Scale of Perceived Social Support (MSPSS; Zimet *et al.* 1988) is one of the most widely used self-report measures of social support because it is brief, easy to administer and has demonstrated satisfactory psychometric qualities: good to excellent internal consistency, good test–retest reliability and construct validity (Zimet *et al.* 1990). The MSPSS assesses social support from three different sources: family, friends and a significant other. Evidence from several studies supports the three-factor structure of the MSPSS across diverse clinical (e.g. Park *et al.* 2012; Wongpakaran *et al.* 2018) and non-clinical populations (Osman *et al.* 2014), including youth (Bruwer *et al.* 2008). The MSPSS has also demonstrated good validity and reliability in patients with CHC (e.g. Naseri & Taleghani, 2012).

While a substantial number of studies validated the MSPSS in young adults typically aged from 18 to 25 years, no studies have examined the psychometric properties of the tool in young adults living with CHC. Because characteristics such as clinical status can affect factor structure, it is important to examine the factor structure in each sample within a population (Wongpakaran *et al.* 2018). Indeed, there is research evidence showing that the MSPSS has different factorial structure in different youth populations. For example, Zhang and Norvilitis (2002) found that the tool has a two-factor solution in Chinese young adults and a one-factor solution in North American young adults. Bruwer *et al.* (2008) showed that a three-factor structure of MSPSS fits well data from South African youth. Although MSPSS has been validated in different clinical and non-clinical groups, it has never been examined in emerging adults with CHCs. It is important to examine the psychometric qualities of the tool in this cohort providing evidence of its reliability and validity in assessing perceived social support, which is an important psychosocial predictor of quality of life. Hence, the aim of the present study is to examine the factor structure of the MSPSS in young adults living with CHC.

Method

Participants

Participants of this study were young adults aged 18–25 years attending Colleges of Further Education (CFE) in the Republic of Ireland and living with CHC (physical, mental or both). This study is part of the larger study conducted in Irish students in CFE. The initial sample consisted of 285 students, but only those reported living with CHC were included in the sample of the present study ($n = 123$, 42.7%). The majority of participants were females (73.2%, $n = 90$), of White Irish origin (97.6%, $n = 120$), and had a mean age of 20.1 years (S.D. = 2.43). Most participants reported being diagnosed with a mental health condition (41.5%, $n = 51$), followed by those reporting a comorbid diagnosis of both physical and mental conditions (30.9%, $n = 38$) and a diagnosis of a physical health condition (27.6%, $n = 34$).

Procedure

Data were collected online between January 2016 and June 2018. The study was advertised online and through a wide range of media. Participants were presented with a detailed information sheet about the study and then they were asked to provide their informed consent electronically in order to participate in the study. Further details on the study demographics and procedure are presented elsewhere (Nearchou *et al.* 2019). Ethical approval for this study was obtained from the Human Research Ethics Committee-Humanities of the University College Dublin.

Measures

Chronic health conditions

Participants were initially presented with the following definition of CHC: '…can be defined as long-term persistent conditions that occur at any point across life. In most cases, they can be treated but not cured and can affect one's quality of life' (HSE, 2008). Then participants were presented with a table listing examples of the most frequently reported physical and mental CHCs and they were asked (i) whether they have been diagnosed with one or more CHCs (ii) to indicate which conditions were those. They could either choose from a list of conditions presented and/or had the option to type in a condition that was not listed.

Social support

The MSPSS (Zimet *et al.* 1988) is a 12-item self-report questionnaire that includes three subscales consisting of four items each, relating to family, friends and a significant other. Items are scored on a 7-point Likert scale ranging from 'strongly disagree' to 'strongly agree', with higher scores indicating higher levels of perceived social support. The scale produces a score of perceived social support by averaging the 12 items, which ranges from 1 to 7. It also yields three separate average scores assessing social support from friends, family and a significant other, which ranges from 1 to 7, respectively.

Table 1. *Summary of the MSPSS exploratory factor analysis results (n = 123)*

Item	Factor loadings		
	FR	F	SO
12. I can talk about my problems with my friends	0.92		
7. I can count on my friends when things go wrong	0.89		
6. My friends really try to help me	0.88		
9. I have friends with whom I can share my joys and sorrows	0.82		
4. I get the emotional help and support I need from my family		0.94	
3. My family really tries to help me		0.88	
11. My family is willing to help me make decisions		0.83	
8. I can talk about my problems with my family		0.82	
2. There is a special person with whom I can share my joys and sorrows			0.91
1. There is a special person who is around when I am in need			0.88
5. I have a special person who is real source of comfort			0.76
10. There is a special person in my life who cares about my feelings			0.72
Eigenvalue	6.13	2.48	1.34
Variance explained by the factor (%)	51.1	20.7	11.1
Cumulative variance explained (%)	51.1	71.8	83.0

MSPSS, Multi-Dimensional Scale of Perceived Social Support; F, Family subscale; FR, Friends subscale; SO, Significant other subscale.

Quality of life

Using two subscales of the Medical Outcomes Study (MOS) 36-item Short Form Health Survey (Ware & Sherbourne, 2006), two dimensions of quality of life were assessed: social functioning and emotional well-being. The MOS 36-item is a widely employed tool developed to measure quality of life in individuals living with CHC. Social functioning is assessed with two items, and emotional well-being is assessed with five items. Each item is scored on a 6-point Likert scale ranging from (1) 'all the time' to (6) 'none of the time'. In accordance with developers' guidelines, items were recoded, so that all scores range from 0 to 100. The total score of each subscale is calculated by adding up all items with higher scores indicating better quality of life. Reliability coefficients showed that both social functioning ($\alpha = 0.83$) and emotional well-being ($\alpha = 0.80$) demonstrated very good internal consistency for the present sample.

Data analysis overview

Exploratory factor analysis (EFA) using principal axis factoring as the extraction method was applied to determine the factor structure of the MSPSS in young adults living with CHC. Oblique rotation was used, thus allowing factors to be correlated. The criteria used to determine the optimal number of factors to be extracted were scree plots and eigenvalue >1. Parallel analysis was also applied to further confirm the number of factors to be retained. Correlations were applied

to examine the convergent validity of the MSPSS. Drawing from the social support literature, we hypothesised that the total scale and the three subscales will be positively correlated with better quality of life outcomes. Data were analysed using the SPSS software v.24, Ireland. A complete dataset was used.

Results

Exploratory factor analysis

The EFA results revealed a three-factor solution of the MSPSS structure in young adults living with CHCs. The three factors explained 83% of the variance in MSPSS scores and had eigenvalues >1. The scree plot and the parallel analysis further confirmed the number of factors to be retained. All the items demonstrated high loadings on the three factors ranging from 0.72 to 0.94 (see Table 1). Means and S.D.s for all items are presented in 1 online Supplementary Material Table S1.

Reliability

The three subscales of the MSPSS and the total scale showed excellent internal consistency, while the corrected-item total correlations for the three subscales were >0.91 (see online Supplementary Material).

Validity

Table 2 presents the correlation matrix among all study variables as well as means and standard deviations.

Table 2. *Means, standard deviations and bivariate correlations for all variables (n = 123)*

Variable	1	2	3	4	5	6	Mean	S.D.
1. Family	–						4.60	1.77
2. Friends	0.45*	–					4.80	1.66
3. SO	0.29*	0.64*	–				5.20	1.52
4. EWB	0.43*	0.42*	0.25**	–			50.7	31.6
5. SoF	0.41*	0.33*	0.24**	0.73*	–		45.2	22.2
6. MSPSS	0.73*	0.85*	0.76*	0.48*	0.41*	–	4.87	1.29

Family, Family subscale; Friends, Friends subscale; SO, Significant other subscale; EWB, Emotional well-being subscale;
SoF, Social functioning subscale; MSPSS, Multi-Dimensional Scale of Perceived Social Support.
*$p < 0.001$, **$p < 0.01$.

Significant positive correlations were evident among perceived social support from family, friends and a significant other (Table 2). Correlations revealed that MSPSS has good convergent validity. As expected, the MSPSS total scale and three subscales showed moderate positive significant correlations with social functioning and emotional well-being (Table 2).

Discussion

The EFA findings supported the three-factor structure of the MSPSS in young adults living with CHC. All items had high loadings on the pre-defined factors indicating that the MSPSS can be used to measure perceived social support from three distinct sources in this cohort. The convergent validity of the tool was also established, as significant positive correlations were evident between the MSPSS and quality of life measures, that is, emotional well-being and social functioning. The total scale and the three subscales showed excellent internal consistency in the present sample. The findings of the present study indicate that the MSPSS is a valid and reliable tool for use in young adults living with CHC. Our study adds to a small body of research confirming the validity and reliability of the instrument with different community groups of young people (Canty-Mitchell & Zimet, 2000; Bruwer *et al.* 2008). Consistent with some studies in youth from diverse contexts (e.g. Adamczyk, 2013), we found that MSPSS has a three-factor structure in young adults living with CHC. However, other studies in diverse cohorts of young adults showed that MSPSS has different factor solutions (e.g. Zhang & Norvilitis, 2002). This highlights the importance of testing the factor structure of a psychometric tool across different cohorts within a population. Furthermore, because young adulthood is a significant transitional phase, marked by growing independence from family, it is imperative to be able to accurately measure social support, particularly among those

with CHC for whom this transition may be more challenging.

Despite its contributions, this study has some limitations to consider. First, the sample size was relatively small based on suggestions to use large sample sizes ($n > 200$) in conducting factor analysis. However, MacCallum *et al.* (1999) suggested that smaller sample sizes can also be appropriate, especially when factor loadings are high. Yet, future studies can replicate our findings in larger cohorts of young adults living with CHC. Second, due to the restricted sample size, we did not test for measurement invariance regarding the type of the CHC, that is, physical or mental or both, which could have provided a greater insight on the factor structure of the tool. This can also be explored by future research.

Conflict of Interest

The authors declare that there are no conflicts of interest.

Ethical Standards

The authors assert that all procedures contributing to this work comply with the ethical standards of the relevant national and institutional committee on human experimentation with the Helsinki Declaration

of 1975, as revised in 2008. The study protocol was approved by the Human Research Ethics Committee-Humanities of the University College Dublin.

Supplementary Material

To view supplementary material for this article, please visit https://doi.org/10.1017/ipm.2019.54

References

Adamczyk K (2013). Development and validation of the Polish-language version of the Multidimensional Scale of Perceived Social Support (MSPSS). *Revue internationale de psychologie sociale* **26**, 25–48.

Andrinopoulos K, Clum G, Harper G, Perez L, Xu J, Cunningham S, Ellen JM, Adolescent Medicine Trials Network for HIV/AIDS Interventions (2011). Health related quality of life and psychosocial correlates among HIV-infected adolescent and young adult women in the US. *AIDS Education and Prevention* **23**, 367–381.

Blatt SJ, Feldman B, Mahler A, Shulman S, Cohen O (2005). Emerging adulthood. *Journal of Adolescent Research* **20**, 577–603.

Brownell A, Shumaker SA (1984). Social support: an introduction to a complex phenomenon. *Journal of Social Issues* **40**, 1–9.

Bruwer B, Emsley R, Kidd M, Lochner C, Seedat S (2008). Psychometric properties of the multidimensional scale of perceived social support in youth. *Comprehensive Psychiatry* **49**, 195–201.

Canty-Mitchell J, Zimet GD (2000). Psychometric properties of the multidimensional scale of perceived social support in urban adolescents. *American Journal of Community Psychology* **28**, 391–400.

Dour HJ, Wiley JF, Roy-Byrne P, Stein MB, Sullivan G, Sherbourne CD, Bystrisky MD, Rose RD, Craske MG (2014). Perceived social support mediates anxiety and depressive symptom changes following primary care intervention. *Depression and Anxiety* **31**, 436–442.

Haase JE, Kintner EK, Robb SL, Stump TE, Monahan P, Phillips C, Stegenga K, Burns DS (2017). The Resilience in Illness Model Part 2: confirmatory evaluation in adolescents and young adults with cancer. *Cancer Nursing* **40**, 454–463.

Haber MG, Cohen JL, Lucas T, Baltes BB (2007). The relationship between self-reported received and perceived social support: a meta-analytic review. *American Journal of Community Psychology* **39**, 133–144.

Health Service Executive (2008). *4.1 Chronic Illness Framework*. Retrieved from https://www.hse.ie/eng/about/who/population-health/population-health-approach/population-health-chronic-illness-framework-july-2008.pdf.

Herts KL, Wallis E, Maslow G (2014). College freshmen with chronic illness: a comparison with healthy first-year students. *Journal of College Student Development* **55**, 475–480.

MacCallum RC, Widaman KF, Zhang S, Hong S (1999). Sample size in factor analysis. *Psychological Methods* **4**, 84–99.

Naseri N, Taleghani, F (2012). Social support in cancer patients referring to Sayed Al-Shohada Hospital. *Iranian Journal of Nursing and Midwifery Research* **17**, 279–283.

Nearchou F, Campbel A, Duffy K, Miriam F, Neo WL, Petroli M, Ryan H,Simcox J, Softas-Nall S, Hennessy E (2019). Le Chéile: well-being of students in Colleges of Further Education in Ireland. Research Repository University College Dublin (http://hdl.handle.net/10197/9671). Accessed 4 June 2019.

Osman A, Lamis DA, Freedenthal S, Gutierrez PM, McNaughton-Cassill M (2014). The multidimensional scale of perceived social support: analyses of internal reliability, measurement invariance, and correlates across gender. *Journal of Personality Assessment* **96**, 103–112.

Park H, Park H, Nguyen T (2012). Validation of multidimensional scale of perceived social support in middle-aged Korean women with diabetes. *Asia Pacific Journal of Social Work and Development* **22**, 202–213.

Pinquart M (2014). Achievement of developmental milestones in emerging and young adults with and without pediatric chronic illness-a meta-analysis. *Journal of Pediatric Psychology* **39**, 577–587.

Thoits PA (2011). Mechanisms linking social ties and support to physical and mental health. *Journal of Health and Social Behavior* **52**, 145–161.

Ware JE, Sherbourne CD (2006). The MOS 36-item Short-Form Health Survey (SF-36). *Medical Care* **30**, 473–483.

Wodka EL, Barakat LP (2007). An exploratory study of the relationship of family support and coping with adjustment: implications for college students with a chronic illness. *Journal of Adolescence* **30**, 365–376.

Wongpakaran T, Wongpakaran N, Sirirak T, Arunpongpaisal S, Zimet G (2018). Confirmatory factor analysis of the revised version of the Thai multidimensional scale of perceived social support among the elderly with depression. *Aging and Mental Health* **22**, 1143–1148.

Zhang J, Norvilitis JM (2002). Measuring Chinese psychological well-being with Western developed instruments. *Journal of Personality Assessment* **79**, 492–511.

Zimet GD, Dahlem NW, Zimet SG, Farley GK (1988). The Multidimensional Scale of Perceived Social Support. *Journal of Personality Assessment* **52**, 30–41.

Zimet GD, Powell SS, Farley GK, Werkman S, Berkoff KA (1990). Psychometric characteristics of the Multidimensional Scale of Perceived Social Support. *Journal of Personality Assessment* **55**, 610–617.