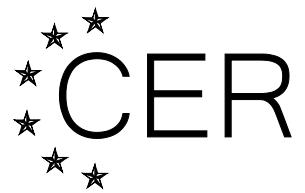CER

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VALIDITY AND RELIABILITY OF SINGLE-ITEM SELF-REPORT MEASURES OF SOCIAL SUPPORT

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Abstract: Social support is one of the most important variables in the study of wellbeing and psychosocial functioning. The role of social support is recognized also in public health studies, as it is one of the significant predictors of health outcomes. For that reason measurement of social support is indispensable in any research related to health or wellbeing. These studies are often large surveys, frequently with repeated measurements. Therefore, valid and easily applied measures are required. Self-report questionnaires of social support are often lengthy. This may cause a significant burden to study participants and a threat to the validity of measurement due to fatigue effects. To overcome these difficulties validity and reliability of single-item, self-report measures of satisfaction with personal relationships and satisfaction with support from friends were examined in a sample of 1451 university students. These two measures were administered in a subsample of 135 students on two occasions with three weeks interval between them. Intraclass correlation coefficients (ICC) for test-retest reliability were satisfying, .80 for satisfaction with personal relationships, and .64 for satisfaction with support of friends. Both measures related in predictable ways to perceived stress, depressiveness, anxiety, loneliness and searching for emotional and instrumental social support. The study provides evidence for the validity and reliability of these single-item measures. These scales are potentially convenient measures of social support in large surveys.

Keywords: reliability, single-item measure, social support, validity, wellbeing

1. Introduction

Social support is crucial for maintaining psychological and physical health. World Health Organization (WHO) considers social wellbeing as an essential component of health and quality of life [1, 2]. It is one of the most important variables in the study of wellbeing and psychosocial functioning. The role of social support is recognized also in public health studies, as it is one of the significant predictors of health outcomes. Extensive body of research demonstrated that quantity and quality of social relationships are related to morbidity and mortality [3, 4, 5, 6, 7, 8].

Multiple researches show that social support is closely related with prevention of psychological and somatic disorders. Recent studies report that having supportive relationships protects from possibly pathogenic effects of stressful events [6, 9, 10] and decreases the risk of depression [11, 12, 13]. It has also positive effect on reducing anxiety. Studies show the impact of social support on recovery from illness, injury and effect on immune, endocrine, and cardiovascular functioning [2]. Satisfaction with personal relationships and satisfaction with support received from friends are two of the most direct indicators and important components of social support. One of the most widely used psychometric tools for measuring social support is *Multidimensional Scale of Perceived Social Support* [14]. It encompasses three subscales related to the source of the social support, namely family, friends or significant other.

Since recent studies showed that wellbeing and social support may also be crucial variables in educational settings, as unhealthy study attitudes and behaviours related to newly established construct of study addiction were identified [15], there is a need for short and convenient measures of social support in educational research. These studies often require large samples and encompass multitude of relevant variables including socioeconomic background, school or university environment, personality, cognitive functioning, different learning attitudes and behaviours, school or academic performance, and diverse measures of wellbeing and health [16, 17, 18, 19, 20, 21].

2. Single-item scales

Running large scale survey studies requires control of many different variables. This and other factors, like decreased burden on both participants and researchers, contribute to the fact that single-item scales are more and more often used [22]. Gradually recommendations and guidelines on the usage of single-item scales are being developed [23]. By now single-item scales were used in health, marketing and educational research in which learning engagement, exam stress, depression symptom severity, psychosocial functioning specific physical symptoms, distress or quality of life of patients were measured with single-item measures [22, 24, 25]. The results of these studies suggest that these measures frequently prove to be reliable and valid. However, in some contexts they are not an optimal way of measuring variables, e.g. in studies on sexual satisfaction and behaviours [26]. For that reason, it is advised to carefully analyse advantages and disadvantages of use of single-item measures in particular research context and taking into account existing data on the subject.

On the basis of previous theoretical frameworks and empirical research into social support, it is hypothesized that: (H1) Satisfaction with personal relationships and satisfaction with support received from friends are negatively related to perceived stress, depressiveness,

anxiety and loneliness and (H2) positively related to searching for emotional and instrumental social support (especially with satisfaction with support from friends).

3. Methods

Participants. A total of 1451 students from different universities in Pomerania Region in Poland took part in the study, 675 men (46.5%) and 751 women (51.5%), 25 (1.7%) persons did not report gender, with mean age of 21.75 years (SD = 3.11). Students were from different faculties, courses of study, years and modes of study. One hundred thirty five participants took part in test-retest procedure, 87 females and 77 males, 5 persons did not report gender, with mean age years M = 21.17, SD = 1.86.

Measures. Two single-item, self-report measures were developed on the basis of items from WHOQOL Bref scale [27]. The scale of satisfaction with personal relation-ships consisted of the question: "How satisfied are you with your personal relationships?" and response scale ranged from 1 - "Very dissatisfied" to 9 - "Very satisfied". Satisfaction with support of friends was measured by the question: "How satisfied are you with the support you get from your friends?" with the same response format. The original 5-point response scale has been modified to 9-point scale due to recommendation to use at least 7-point Likert response format data when conducting statistical analyses on single-item measures [28]. Other measures were widely used valid and reliable scales adapted in Poland. Perceived stress was measured with *Perceived Stress Scale (PSS-4),* a 4-item, 5-point Likert response format scale [29]. Depressiveness and anxiety were measured by *Hospital Anxiety and Depression Scale,* which includes 14 items with 4-point response format, seven items for anxie-ty and seven for depression [30]. Loneliness was measured by *Short Loneliness Scale,* which includes three items with 3-point response format scales [31]. The strategies of cop-ing with stress were measured by Brief-COPE, which is 28-item scale [32]. The subscales measuring searching for emotional and instrumental social support were used in this study.

Procedure. Data collection used opportunistic sampling. Students were invited to participate anonymously in the study during lectures or classes. More than 90% of all present students agreed to do so. Ninety one percent of participants filled in 'paper and pencil' questionnaires and nine percent of students completed online versions of the questionnaires. The study took place from 2013 to 2015. Satisfaction with personal relationships and satisfaction with support from friends were measured on two occasions with three week interval between them. Anonymous way of coding participants was applied in order to match re-sponses from both measurement occasions. Participation in the study was anonymous and no monetary or other mate-rial rewards were offered to the participants.

Statistical analyses. Intraclass correlation coefficient (ICC) along with the 95% confidence interval (CI) was used as a measure of test-retest reliability [30, 31]. Means, standard deviations, percentages and correlation coefficients were

calculated. All statistical analyses were conducted in IBM SPSS 22.

4. Results

The correlation between satisfaction with personal relationships (M = 5.82; SD = 2.34) and satisfaction with support of friends (M = 6.69; SD = 1.81) was positive and moderately high, r = .38, p < .001. An intraclass correlation coefficient (ICC) of .80 (95% CI = .72-.86, p < .001) was obtained for satisfaction with personal relationships, and .64 (95% CI = .49-.75, p < .001) for satisfaction with support of friends. Means, standard deviations and correlations of satisfaction with personal relationships and satisfaction with support from friends with studied variables are presented in table 1.

Table 1. Means, standard deviations and correlations of satisfaction with personal relationships and satisfaction with support from friends with perceived stress, depressive-ness, anxiety, loneliness, and searching for instrumental and emotional social support

Scale	M (SD)	Satisfaction with personal relationships	Satisfaction with support of friends
Perceived stress	10,53 (3,05)	-.33**	-.22**
Depressiveness[a]	13,88 (4,13)	-.30**	-.34**
Anxiety [a]	12,00 (3,88)	-.24**	-.26**
Loneliness	4,60 (1,71)	-.39**	-.35**
Emotional support [a]	3,91 (1,61)	.24**	.51**
Instrumental support [a]	3,73 (1,58)	.15**	.42**

*p < .05; **p < .01
[a] Subsample of 1074 students, 481 men (44.8%) and 572 women (53.3%), 21 (2.0%) persons did not report gender, with mean age of 21.77 years (SD = 3.24).

5. Conclusions

The study provided evidence for the test-retest reliability of single-item measures of satisfaction with personal rela-tionships and satisfaction with support of friends. The former measure had good reliability and the latter one had acceptable reliability. These results suggest that subjective assessment of satisfaction with personal relationships tends to be more stable in time than individual evaluation of satisfaction with support of friends. The measures were moderately interrelated indicating that they share common variance but they are also independent to a significant degree.

The obtained data on concurrent validity also provided initial support for the construct validity of the measures. All hypotheses were substantiated and the measures re-lated in predictable ways to the indicators of wellbeing measured by widely used valid and reliable psychometric tools. Both satisfaction with personal relationships and satisfaction with support of friends were negatively related to perceived stress, depressiveness, anxiety and loneliness, and they were positively related to stress coping strategies

concerning searching for emotional and instrumental social support. Satisfaction with support of friends was significantly more strongly than satisfaction with personal relationships related to searching of social support.

The results provided support for the validity and reliability of the measures as indicators of two of the highly important components of social support. It corresponds to two of the three dimensions of social support measured by *Multidimensional Scale of Perceived Social Support* which validity received support in studies [14] These measures are very quick to fill and therefore low-burden and low-cost measurement options. They can be easily applied in large scale research when important aspects of wellbeing and quality of life have to be measured along with many other variables. They can prove to be convenient in studying relationships between constructs and controlling important variables in complex models. On the other hand, the scales are not useful in precise individual evaluation of received social support for the purposes of diagnosis or direct comparison between individuals. The biggest strengths of the study are a large and heterogeneous sample of university students and the use of widely applied, valid and reliable measures of different aspects of wellbeing and psychosocial functioning. The main limitation of the study is a lack of data on the convergent validity with a widely used, valid and reliable measures of social support such as *Multidimensional Scale of Perceived Social Support* [14] or *Berlin Social Support Scales* [35]. The future studies should investigate this type of validity using also different methods of measurement of social support, such as observation or experience sampling methodology. There is also need for data on discriminant validity, as well as predictive validity of these measures from longitudinal settings, including possible comparisons in predictive value with multidimensional multi-item scales of social support. Research on more representative samples is warranted.

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