Original Papers

Yakup İme[1]

[1] *Necmettin Erbakan University, Konya-Turkey, Turkey*

CORRESPONDING AUTHOR – Yakup İme, imeyakup@gmail.com

Adaptation of Short Warwick-Edinburgh Mental Well-being Scale: Its Relationship with Loneliness, Emotional Flexibility and Resilience Among Adolescents

Abstract: Understanding and measuring mental well-being among adolescents has recently become a priority. The validity and reliability study of the 7-item short version of the Warwick Edinburgh Mental Well-Being Scale (SWEMWBS) has not been examined in Turkish adolescents. Therefore, this study aims to adapt the 7-item Warwick Edinburgh Mental Well-Being Scale to Turkish and examine the relationships between loneliness, emotional flexibility, resilience, and mental well-being. The data were collected by convenience sampling method from 820 adolescents aged 14-18 from 73 city of Turkey. During the adaptation process of SWEMWBS, confirmatory factor analysis, concurrent validity, and reliability analysis were performed. The findings confirmed the one dimensionality of the 7-item scale on the Turkish adolescent sample. In addition, a significant positive relationship was found between mental well-being and emotional flexibility and resilience. However, there was a significant negative correlation between mental well-being and loneliness. The results showed that the Turkish version of SWEMWBS had strong psychometric properties in adolescents.

Keywords: *Mental well-being, loneliness, emotional flexibility, resilience, adolescents, adaptation.*

INTRODUCTION

Adolescence is a period of challenging in which individuals face choices related to education, work, love life, and self-improvement, bringing many new life changes and challenges. Adolescence is also a very important period for developing social and emotional habits that are important for mental well-being. Physical, emotional, and social changes such as neglect, abuse, and economic difficulties can negatively affect adolescents' mental health. Protecting adolescents from these negative effects is critical for their mental well-being (Malti, 2020). Scientists have argued that adolescence is shaped partially by the course of mental well-being. Moreover, it is stated that mental health problems that occur in adolescence usually persist in adulthood (Belfer, 2008). Therefore, understanding adolescent mental well-being is an impor-

tant public health priority. Mental well-being is even more than the absence of a mental disorder. Mental health is defined as the state of mental well-being that enables individuals to cope with stress, to realize their strengths and to be productive (WHO, 2005). Although mental health and mental illness are related, they are different concepts. Mental health has often been defined as the absence of disorders such as depression and anxiety. But the mere absence of disease is a narrow conclusion from a psychological point of view. Mental health is seen as a positive concept that is more than the absence of pathology. (Westerhof & Keyes, 2010). Mental health refers to well-being in a way that can contribute to oneself and society in a positive way. On the other hand, mental illness indicates the presence of a pathology (Keyes, 2005). Mental illness can be defined as changes in emotions, thoughts and behaviors that negatively affect

an individual's life, relationships with the environment and productivity (Horwitz, 2020).

The World Health Organization (2005) stated that the focus for the well-being and effective functioning of individuals and societies is positive mental health. Positive mental health, which includes both cognitive and affective features, used to make sense of the world and make healthy decisions, is an important resource in increasing the well-being of individuals (Kottke et al., 2016). The concepts of positive mental health and mental well-being are used interchangeably in the literature (Tennat et al., 2007). Although there is no consensus on the exact definition of both concepts, mental well-being includes both hedonic (subjective well-being) and eudaimonic (psychological well-being) dimensions (Keyes, 2007).

Research has shown the positive effect of mental well-being on other structures in adolescence, including resilience (Davydov et al., 2010). Mental well-being encompasses both hedonic (i.e., happiness, subjective well-being) and eudaimonic (i.e., positive functionality) aspects of well-being (Clarke et al., 2011; Tennant et al., 2007). In this context, it is considered that having good mental well-being will be a resource that can help adolescents develop and maintain a good quality of life, contribute to their society, and lead healthy and productive lives. As can be understood from these statements, mental well-being refers to the ability to withstand daily stressors and make a productive contribution to daily life. However, there is a need for a valid and reliable scale to measure the mental well-being of adolescents.

Although assessing adolescent well-being is potentially important, the lack of an appropriate assessment tool has historically hampered progress. Researchers who do not have an adequate mental health scale have relied on mental illness measurements (e.g., the prevalence of depression or anxiety) as an indicator of mental health despite theoretical deficiencies (Hu et al., 2007). Various measurement tools have been developed in the literature to measure mental well-being. For example, Satisfaction With Life Scale, one of the previous measurement tools in the literature, is based on the cognitive aspects of well-being (Diener et al., 1985). Similarly, the PANAS scale is based on the emotional aspects of well-being (Watson et al., 1988). But SWEMWBS aims to capture a broad concept of well-being, including emotional, cognitive-evaluation dimensions, and psychological functioning (Tennat, Joseph et al., 2007). The development of the 14-item Warwick-Edinburgh Mental Well-Being Scale (Tennant et al., 2007) provided a potentially useful well-being scale. The Warwick-Edinburgh Mental Well-being Scale (WEMWBS) was developed to meet the need for a psychometrically reliable measure of mental health. The scale was derived from "Affectometer 2", a mental well-being scale that has several positive psychometric properties but also has significant limitations on social desirability bias, item excess, and scale length (Tennat, Joseph et al., 2007). Based on the literature, the confirmation results of Affectometer 2, and inputs from focus groups,

an expert panel agreed on the key concepts and items that should be part of the new and improved scale. Key concepts are "positive affect and psychological functioning" (including autonomy, competence, self-acceptance, and personal development) and "interpersonal relationships". The final scale consisted of 14 positive items (Tennat et al., 2007). WEMWBS has been confirmed in various populations and across different subgroups, including adolescents, clinical samples, and ethnic minority samples (McKay & Andretta, 2017; Smith et al., 2017; Stewart-Brown et al., 2011). The scale has been translated into more than 25 languages, including Arabic, Urdu, Japanese, and Chinese. Validity studies have found that WEMWBS is easy to complete and provides a reliable measure of mental well-being (Castellví et al., 2014; Forero et al., 2014; Haver et al., 2015; Smith et al., 2017).

However, the scale was shortened to form the 7-item short WEMWBS (SWEMWBS) due to item redundancy and the indicators of scaling properties. The correlation between the two scales was found to be high. SWEMWBS represents a narrower view of mental well-being. Most of the items cover psychological and eudaimonic well-being, and few items cover hedonic well-being or affect (Stewart-Brown et. al, 2009). SWEMWBS is preferred by some researchers in terms of its psychometric characteristics. As seen in the literature, its Turkish versions have been validated and compared only for use among adults (Demirtaş & Baytemir, 2019). Similarly, Clarke et al. (2011) examined the psychometric properties of the scale in a sample of English and Scottish adolescents. The findings show that the scale is valid and reliable in the adolescent sample. Thus, SWEMWBS is a potentially promising scale to measure mental well-being in the Turkish adolescent group. Because SWEMWBS is a short, effective, and simple measurement tool that adolescents can easily answer. It may also be suitable for the developmental characteristics of adolescents, as it is short and simple. However, SWEMWBS was not validated in the Turkish adolescent sample. If the validity of SWEMWBS can be ensured in the Turkish adolescent sample, this will have a very large value because a measure whose mental well-being is suitable is a high demand in the adolescent sample. It will also allow professionals working in the field of mental health to evaluate using a practical mental well-being scale. Indeed, Smith et al. (2017) suggest future studies to confirm scales in other populations. Therefore, the present study aimed to validate SWEMWBS in a sample of Turkish adolescents and to examine its relationships with emotional flexibility, resilience, and loneliness.

METHOD

Participants

Research participants were reached from social media channels. Participants were asked to respond to measures and basic information evaluating loneliness, emotional flexibility, resilience, and mental well-being. Participants

were informed that they could leave the study at any time while answering the form. The sample of the study consisted of 820 adolescents (365 [44.5%] girls and 455 [55.5%] boys) aged 14-18 years (M= 16.20, SD = 1.24) attending high schools from 73 different cities in Turkey. Both student consent and parental consent were obtained before the data were collected.

Measures

In this study, UCLA Loneliness Scale Short Form (ULS-8), Short Warwick-Edinburgh Mental Well-Being Scale, Adolescent Psychological Resilience Scale, and Emotional Flexibility Scale were used.

UCLA Loneliness Scale Short Form (ULS-8)

The UCLA Loneliness Scale Short Form (ULS-8) was used to measure adolescents' feelings of loneliness (Russell, 1996). It is an 8-item self-report scale, and all items are scored using a four-point scale (1 = never 4 = often; for example, "I'm unhappy being so withdrawn"). Yıldız & Duy (2014) examined the validity of the short version of ULS on Turkish adolescents and found that the scale has a sufficient internal and test-retest reliability coefficient. In this study, the internal reliability coefficient was found to be sufficient (α = .91).

Short Warwick-Edinburgh Mental Well-Being Scale

Tennant et al. (2007) developed the scale to determine the mental well-being levels of individuals, including hedonic and eudaimonic dimensions. SWEMWBS consists of 7 items with a total score ranging from 7 to 35. All the items were expressed positively. Participants are asked to describe their experiences about each statement in the last two weeks using the 5-point Likert scale (1= Never 5 = Always; for example, "I feel comfortable"). Between the 7-item short form and the 14-item long form, a.95 level of correlation was obtained (Stewart-Brown et al., 2009). In the construct validity analysis of the scale, it was reported that the model showed a good fit between the model and the data. It was found that the scale had sufficient internal and test-retest reliability coefficients.

Emotional Flexibility Scale

The emotional flexibility scale was developed by Fu et al. (2018) to determine the emotional flexibility levels of adolescents. The scale was adapted to Turkish by İme & Ümmet (2022). The scale consists of 10 items. Low scores obtained from the scale with a 7-point Likert structure (1=never true, 7=completely true; for example, "I am able to develop positive emotions even when I am in a bad situation") indicate that the level of emotional flexibility is low, and high scores indicate that the level of emotional flexibility is high. In the construct validity analysis of the scale, it was reported that the model showed a good fit between the model and the data. In the reliability analysis, the Cronbach alpha coefficient was found to be 0.75. In this study, the internal reliability coefficient was found to be sufficient (α = .74).

Adolescent Psychological Resilience Scale

The scale was developed by Bulut et al. (2013) to determine the resilience levels of adolescents. The scale consists of 29 items in total. The factor loadings of the scale vary between 0.59 and 0.81. In the construct validity analysis of the scale, it was reported that the model showed a good fit between the model and the data. In the reliability analysis, the Cronbach alpha coefficient was found to be 0.81. In this study, the internal reliability coefficient was found to be sufficient (α = .86).

Data analysis

Confirmatory factor analysis (CFA) was used to confirm the factor structure of the mental well-being scale. The following criteria were used to determine the values of the scale fit indices within the framework of confirmatory factor analysis. First, it was based on that the ratio of chi-square value to degrees of freedom is less than 3 (Hu & Bentler, 1999; Kline, 2015). Furthermore, as previously reported in the literature (Hu &Bentler 1999; Kline, 2015), GFI, NFI, and CFI ≥ .90, and SRMR ≤ .08 was accepted as an indicator of acceptable compliance. Correlations between loneliness, emotional flexibility, resilience, and mental well-being were examined to determine the concurrent validity of the scale. Cronbach's alpha and McDonald's omega values were examined for the reliability of the mental well-being scale. IBM SPSS Statistics 28.0 and Mplus version 8 (Muthen & Muthen, 2017) were used for data analysis.

RESULTS

Before starting the confirmatory factor analysis, it was tested whether SWEMWBS showed normal distribution. For normality distribution, it was assumed that Skewness and kurtosis values for each item should be between -1.5 and + 1.5 (Tabachnick & Fidel, 2013). The results show that the scale items meet the normality distribution. The skewness and kurtosis values of all items are in range of ± 1.5 (*M*=3.56, *SD*=0.56). The item analysis results of SWEMWBS are given in Table 1.

When the fit indices of the confirmatory factor analyses of the model were examined, it was seen that

Table 1. Statistics on the items of the Mental Well-being Scale

	Factor Loading	Mean	*SD*	Skew-ness	Kurtosis
Item 1	.469	3.19	.51	-.462	-.985
Item 2	.728	3.73	.24	1.02	1.14
Item 3	.724	3.72	.42	-.915	1.02
Item 4	.672	3.70	.36	-.940	1.04
Item 5	.784	3.63	.25	-.765	.314
Item 6	.607	3.43	.42	-.803	-.060
Item 7	.444	3.37	.38	-.678	-.402

the one-dimensional model of the scale showed an acceptable level of fit (x^2 = 118.79, df = 44, $p < .001$; TLI = 0.92; CFI = 0.94; RMSEA = 0.053, SRMR = 0.055). When the model parameters were examined, it was found that all factor loadings were high and statistically meaningful. Information on factor loadings ranging from 0.44 to 0.78 is given in Table 1.

The concurrent validity of SWEMWBS and the relationship between mental well-being, loneliness, emotional flexibility, and resilience were evaluated by computing Pearson's correlations. As expected, loneliness was found to be negatively related to mental well-being (r= -. 26, $p<. 001$), emotional flexibility (r=-. 12, $p<. 001$), and resilience (r= -. 13, $p<. 001$). Resilience was found to be positively related to mental well-being (r= .58, $p<.001$) and emotional flexibility (r= .32, $p<.001$). Finally, it was found that there is a positive relationship between emotional flexibility and mental well-being (r= .51, $p<.001$) (see Table 2).

a significant negative relationship between mental well-being and loneliness. Studies with risk and protective variables associated with mental well-being show that mental well-being is positively associated with resilience (Fan & Lu, 2020). Similarly, mental well-being is positively associated with emotion regulation (Morrish et al., 2018). On the other hand, loneliness may be a risk factor for mental well-being in adolescents (Lyyra et al., 2021). All these findings indicate that the SWEMWBS has criterion validity.

Finally, Cronbach's alpha and McDonald's omega was used to determine the reliability of SWEMWBS. The findings show that the scale has a reliability coefficient of over .70 and meets the acceptable reliability criterion suggested by Nunnally (1978). Thus, it can be concluded that Turkish SWEMWBS is a reliable measurement scale in the adolescent sample.

Mental well-being, which includes both hedonic (subjective well-being) and eudaimonic (psychological

Table 2. Descriptive statistics and correlations between variables (N=820)

Variables	1	2	3	α	Mean	*SD*	Skewness	Kurtosis
1.Loneliness	-			.91	1.55	.57	1.46	-.09
2.Mental well-being	-.26	-		.80	3.94	.68	1.02	1.14
3.Emotional flexibility	-.12**	.51**	-	.74	4.17	.88	-.53	1.45
4.Resilience	-.13**	.58**	.32**	.86	3.79	.72	-.55	-1.03

Note: **$p <.001$.

Finally, Cronbach's alpha and McDonald's omega was used to determine the reliability of SWEMWBS. The Cronbach's alpha ($α$=.80), and McDonald's omega ($ω$ = .78) reliability coefficient of the scale was found to be sufficient.

DISCUSSION

Mental well-being is an important part of healthy adolescent development. Mental well-being helps adolescents develop positive social, emotional, thinking and communication skills and behaviors (Belcher et al., 2021). Therefore, there is a need to investigate mental well-being in adolescents and evaluation tools. The aim of this study is to adapt SWEMWBS to Turkish and to examine the relationships between loneliness, emotional flexibility, and resilience. CFA confirmed the uni dimensionality of the 7-item scale in a Turkish adolescent sample. All factor loadings of SWEMWBS were also found to be statistically meaningful. Therefore, it can be concluded that the Turkish version of SWEMWBS supports the structure of the original (Tennant et al., 2007) scale.

Concurrent validity analysis of the scale revealed meaningful correlations between mental well-being and loneliness, emotional flexibility, and resilience. Mental well-being was significantly positively correlated with emotional flexibility and resilience. However, there is

well-being) dimensions of well-being, enables individuals to become aware of their abilities, cope with stressors in daily life, work productively and usefully, and contribute to society they live in (Ryan & Deci, 2001). Protecting adolescents from adversity, encouraging socio-emotional learning and psychological well-being, and ensuring their access to mental health services have critical importance for their health and well-being during adolescence and adulthood. Therefore, supporting mental well-being among adolescents has great public health and social importance. The present study shows that loneliness is associated with negative mental well-being in adolescents. It is seen that special interventions are needed to prevent loneliness or reduce its effects on mental well-being. It is considered that schools that aim to improve mental well-being among adolescents may also have a positive effect on reducing loneliness.

CONCLUSION

The results showed that SWEMWBS is a valid and appropriate tool to measure mental well-being in the Turkish adolescent population. Current findings encourage their use in intervention and evaluation studies, as well as being valuable for research and practice. The short version of the scale can be preferred in terms of practicality. In addition, in the study, it was determined

that loneliness in the adolescent group may negatively affect mental well-being. In this context, mental health professionals can implement preventive and curative programs to reduce and cope with loneliness. Again, it is considered that emotional flexibility and resilience can play an important role in coping with loneliness and increasing mental well-being.

LIMITATIONS AND SUGGESTIONS

This study has some limitations. The results of this study were obtained based on adolescents' self-assessments, but it may not be possible to eliminate the social likability and prejudices in their responses. Again, the use of cross-sectional data collection in this study is a limitation. As a result, more valid findings can be obtained by testing the associations reported here using a longitudinal research design. Despite their limitations, the study's findings will help mental health professionals understand adolescents' levels of mental well-being. In addition, the adaptation study of the Mental Well-being Scale was carried out using a sample of adolescents of different ages from 73 provinces of Turkey. After the data collection process, various earthquakes occurred in Turkey. Previous studies show that the general population is at higher risk of developing psychiatric problems, especially post-traumatic stress disorder (PTSD), depression, and anxiety symptoms, after suffering a severe trauma such as an earthquake (Silval et al., 2022). Considering that promoting emotional, social, and mental well-being in adolescents has become a national priority in many countries, psychological interventions to alleviate the traumatic effects of earthquakes can be designed using the Mental well-being Scale. In addition to all these, it is considered important to examine the relationship between mental well-being and bullying victimization (İme et al., 2020) and childhood traumatic experiences (İme & Taş, 2018) in future studies.

AUTHOR CONTRIBUTION

There is one author.

CONFLICT OF INTEREST

The author declares that he has no potential conflict of interest in relation to the study in this paper.

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ETHICAL APPROVAL

All procedures performed in this study involving human participants were in accordance with the ethical standarts of the 1964 Helsinki Declaration and its later amendments.

INFORMED CONSENT

Informed consent was obtained from all participants and their parents.

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