

Validation of Turkish Version of Me and My Feelings Scale on Children and Adolescents

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ABSTRACT

Objective: Me and My Feelings Scale (M&MF) is a brief self-reported measure scale developed for evaluating mental health and well-being of children and adolescents. M&MF self-evaluating scale was recently validated consisting of 16 items; 10 items of emotional difficulties and six items of behavioral difficulties. The aim of the current study was to evaluate validity and reliability of the scores of M&MF scale in Turkish children and adolescents. **Methods:** Eight hundred and twenty children and adolescents aged between 9 and 17 were enrolled in the study. SPSS-17.0 and AMOS-24.0 programs were used for statistical analysis. **Results:** The research sample was concluded to be sufficient for structural equation method. Content validity of the scale was revealed to be applicable in Turkish population using Lawshe analysis. The research had a high reliability analysis with a high Cronbach's alpha and significant Guttman split-half coefficient. Cronbach's alpha value was 0.925, Guttman Split-Half value was 0.413 and KMO value was 0.934. As a result of the analysis, the mean emotional score was 18.40 ± 4.10 , the mean behavioral score was 4.86 ± 4.24 and the total scale score was 23.26 ± 6.40 . Behavioral difficulties had a high score from threshold value indicating the sensitivity of Turkish population compared with behavioral feature. **Discussion:** In conclusion, M&MF is a valid and reliable self-report scale for Turkish children and adolescents in defining behavioral and emotional difficulties and discriminating mental health problems between community and clinic samples. Clinical outcomes of M&MF can be recognized and treated in advance cost-effectively by the professionals. (*Anatolian Journal of Psychiatry* 2020; 21(Suppl.1):31-38)

Keywords: mental health, Me and My Feelings Scale, children, adolescents

Çocuk ve Ergenlerde Ben ve Duygularım Ölçeği Türkçe uyarlamasının geçerliliği

ÖZ

Amaç: Ben ve Duygularım Ölçeği çocuk ve ergenlerde mental sağlık ve 'kendini iyi hissetme'yi değerlendirmek için geliştirilmiş kısa bir öz bildirim ölçeğidir. Bu ölçek, 10 maddesi emosyonel güçlükler, altı maddesi davranışsal sorunlar olmak üzere toplam 16 maddeden oluşan, geçerliliği onaylanmış bir ölçektir. Çalışmamızın amacı, Türk çocuk ve ergenlerinde Ben ve Duygularım Ölçeğinin geçerlilik ve güvenilirliğini değerlendirmektir. **Yöntem:** Çalışmaya 9-17 yaşları arasındaki 820 çocuk ve ergen alınmıştır. İstatistiksel analiz için SPSS-17.0 ve AMOS-24.0 programları kullanılmıştır. **Bulgular:** Araştırma örnekleminin yapısal eşitleme yöntemi için yeterli olduğu değerlendirilmiştir. Ölçek içeriğinin geçerliliği, Lawshe analizi kullanılarak, Türk popülasyonunda uygulanabilir olduğunu göstermektedir. Araştırma, yüksek Cronbach alfa ve anlamlı Guttman yarıya bölme katsayısı ile yüksek güvenilirlik elde etmiştir. Cronbach alfa değeri 0.925, Guttman Split-Half değeri 0.413 ve KMO değeri 0.934 çıkmıştır. Analiz sonucunda duygusal puan ortalaması 18.40 ± 4.10 , davranışsal puan ortalaması 4.86 ± 4.24 ve toplam ölçek puanı 23.26 ± 6.40 bulunmuştur. Davranışsal özellik açısından karşılaştırıldığında, davranışsal sorunlarda Türk popülasyonunun

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duyarlılığını gösteren, eşikten daha yüksek puan elde edilmiştir. **Tartışma:** Sonuç olarak Ben ve Duygularım Ölçeği toplum ve klinik örneklem arasındaki davranışsal ve emosyonel sorunları tanımlama ve mental sağlık sorunlarını ayırt etmede, Türk çocuk ve ergenler için geçerli ve güvenilir bir öz bildirim ölçeğidir. Ben ve Duygularım Ölçeğinin klinik sonuçları, profesyoneller tarafından etkili olarak kabul edilip kullanılabilir. (*Anadolu Psikiyatri Derg* 2020; 21(Ek sayı.1):31-38)

Anahtar sözcükler: Mental sağlık, Ben ve Duygularım Ölçeği, çocuklar, ergenler

INTRODUCTION

Health was defined by World Health Organization (WHO) as 'a state of complete physical, mental and social well-being and not merely the absence of disease or infirmity' in 1948.^{1,2} Mental health problems constitute a crucial burden to individuals and population across the world, being responsible for almost 13% of global burden of mental disorders. Approximately 80% of population with mental health problems accommodate in countries with low and middle-income, establishing a total burden of disease as 10% in these countries.³ It was documented that global burden of mental health problems augmented with a rate of 37,6% from 1990 to 2010.⁴ Besides, WHO revealed that 35.5-50.3% of the population with serious mental health problems in developed countries and 76.3-84.4% in less-developed countries have never been consulted by a professional.⁵ Untreated and misdiagnosed mental health problems may conclude with serious outcomes like suicides, which have increased by 60% worldwide in the last 45 years as reported by WHO. Suicide is reported as a cause of death in the second rank in the age group of 10-24 years.³ Mental health problems may result in many consequences that would affect both daily life and quality of life of the individuals. These problems also have relationship with public health field, as they have negative effects on both the individuals and the public surrounding the individuals.⁵⁻⁸ Recent researches have mostly focused on the physical and mental health simultaneously for the last decade in order to elucidate their effects between each other.⁹

Early diagnosis of mental health problems was accepted to be important by many researches in order to prevent the progression of psychological and psychiatric disorders and to shorten the treatment and rehabilitation period.¹⁰⁻¹² Diagnosis of a mental health problem even psychological or psychiatric has many effects on cognitive, emotional, social and practical issues.² On the other hand, the diagnosis of mental health problems is not always as easy as in other medical fields, and the duration of the treatment varies from individual to individual.¹³ There may

be delays in treatment and rehabilitation period due to high costs of treatment with long time periods and lack of qualified labor and economic opportunities.^{2,14-17} Systemic school-based, voluntary and universal screening programs and scales for evaluating mental health are reported as effective, safe, reliable and low-cost.^{13,18}

Mental health problems have been revealed to possess a various range of negative impacts over school performance.¹⁸ A variety of measuring scales have been developed to solve these problems effectively and at least to diagnose psychiatric disorders in the symptomatic phase. When these measuring scales are being criticized, their specialty of addressing different populations, being easy to apply and being practiced by all are prominent.^{9,19-21} Me and My School Measure (M&MS) was scheduled by Deighton et al. and Wolpert et al. in 2010 to catch general mental health and to screen more problematic symptoms within a wide age range for children (eight years and above).^{22,23} The reason why these researches develop M&MS was the absence of a brief and suitable self-report measure for children ≥ 8 years. M&MS comprised of items; 10 items related with emotional difficulties and 6 items related with behavioral difficulties. The responses of children for each item were scaled as never with '0', sometimes with '1' and always with '2' in relation with their agreement for each item. Total score of emotional difficulties and behavioral difficulties has a range between 0-20 and 0-12, respectively. Another research conducted by Patalay et al. compared paper and computer formats of M&MS and revealed that children and adolescents had lower scale scores on paper formats.²⁴

M&MS was renamed by Deighton et al. as Me and My Feelings Scale (M&MF) in 2013 to evaluate the development and initial validation of the scale and to reveal its relevance and applicability of different populations.²⁵ M&MF is a brief self-reported scale for mental health and well-being for children comprises of 10 items related with emotional difficulties scale and six items related with behavioral difficulties scale. The participants respond to each item within a range of 0-2 scale; '0' indicating never, '1' indicating some -

times and '2' indicating always. The sum of both emotional difficulties scale and behavioral difficulties scale is calculated from the data collected from each item. The threshold values for emotional difficulties and behavioral difficulties are 10 and 6, expressing the probability of mental health problems. M&MF which has been used effectively for field survey in many languages in the world with its validity and reliability.²⁶⁻²⁸

In literature, validity is examined into four types, as face validity, content validity, criterion-related validity and construct validity.²⁹ Concurrency, convergence, discriminate and prediction models are used in construct validity.³⁰ In addition, some new approaches such as frame-of-reference and within-person inconsistency may be used for relationship between reliability and validity.³¹ Confirmatory validation methods are used for validity of a pre-validated scale.³¹⁻³⁵ Principle component analysis, structural equation model and Lawshe method are widely used for confirmatory validation of a developed scale.³⁶⁻³⁸ As we could reach literature, there have been no studies related with M&MF and its validation in Turkey. Thus, the aim of the study was to ensure the validity and reliability of the scores of M&MF and to validate it as a mental health and well-being measuring scale in Turkish children and adolescents.

METHODS

Study participants

The study was designed in a descriptive scanning model, in which the responses to the questions related with the existing situation are converted to qualitative and/or quantitative data.³¹ The study was planned to test the validity and reliability of responses of children and adolescents in M&MF.

The study was planned in Şişli district in İstanbul to investigate whether there was a statistically significant difference in the scale dimensions according to the demographic characteristics of the students in schools managed by the Ministry of National Education in Şişli district of İstanbul. Şişli is a cosmopolite district that projects the demographic, socioeconomic and cultural status of Turkey, because there have been immigrations from all cities in Turkey constituting a mosaic sample.

The total number of children and adolescents enrolled in the study was 820 with 491 females and 329 males. In the research, 206 secondary school and 614 high school students were

subjected. 962 children and adolescents were evaluated for the inclusion criteria and 820 out of 962 children and adolescents were included in the study. The including criteria for participants were being a volunteer to participate in the research, being between 9 and 17 years of age during the research, not having a disability for responding to research questions and not having a diagnosed psychiatric disorder. Individuals, aged out of 9 and 17 range, diagnosed with a psychiatric disorder (10 children and adolescents diagnosed with hyperactivity), who had oppositional defiant disorder with their teachers (n=16), who did not accept being a volunteer to participate in the survey (20 families and 15 individuals) and who answered the scale inaccurately (n=81) were excluded from the study.

Data collection

The protocol was approved by the local ethics committee (İstanbul Training and Research Hospital, Ethics Committee; 26.01.2018; 1174). In the study, the required permissions were obtained from the related institutions to carry out M&MF in relevant schools, and then the sample was selected randomly based on the appropriate sampling method. The parents of the children and adolescents were informed of M&MF via a meeting supervised by guidance teachers. Oral consents for M&MF to be scheduled for children and adolescents were approved from the parents whether their children would participate M&MF. The parents gave approval for M&MF revealing that M&MF would positively contribute to their children. Afterwards, M&MF was conducted in classroom-based sessions at the appropriate time intervals, with the permission of the school administration and the supervision of the guidance teachers. All individuals included in the study received information related with the study and M&MF.

Me and My Feelings (M&MF) Scale

M&MF scale is a 16-item self-report measure consisting of total short 16-items; 10-items of emotional difficulties scale and 6-items of behavioral difficulties scale. Individuals reply to each item by selecting one of three alternatives: never expressed with '0', sometimes expressed with '1', always expressed with '2'. Total score of scales are calculated as the sum of item scores with threshold values 10 for the emotional difficulties and six for the behavioral difficulties. Higher scores of each set of difficulties indicate the probability of mental health problems. Children and adolescents response to each item related with their personal agreement to that item.

Statistical analysis

After the collection of data in the study, all the data were transferred to the SPSS 17.0 for Windows and AMOS 24.0 package programs for statistical analysis. In the analysis process, scale item means and factor means were described with mean and standard deviation (mean $\pm$ SD). Kaiser-Meyer-Olkin Measure of Sampling Adequacy (KMO) level was used to define sample size adequacy.

Lawshe content validity methods^{36,39} and structural equation method (SEM) was performed at AMOS for confirmatory validity of the scale. SEM method was preferred for accruing the validation of the scale. Although principle component analysis and factor analysis are used for pre-validated scale validation for different samples, SEM is a widely used preferable method for confirmatory analysis.³¹⁻³⁵ Content validity rates (CVR) in Lawshe Analysis means that confirmatory validation of the item, which is proportion of number of participants expressing the item, is required to half of participants. CVR has values within a range of 0-1, in which high CVR value means high validity. In the research, expert reviews were conducted on 11 field experts (including six field experts and five academicians), each items by panel were asked for their evaluation. Guttman split-half and Cronbach's alpha coefficients were used for reliability.⁴⁰ RMSEA, CMIN/DF, AGFI and CFI values were calculated and interpreted based on the data in literature.

RESULTS

The minimum and maximum age of children and adolescents were respectively 9 and 17 with a mean of 14.66 $\pm$ 0.88. Female participants had 15.15 $\pm$ 2.27 age mean, while male participants had 13.93 $\pm$ 3.10 mean ages. Age mean of secondary school students was 10.58 $\pm$ 1.94 and age mean of high school students were 16.03 $\pm$ 1.01.

Lawshe analysis results and CVR of items in the scale were given in the Table 1. In reliability analysis, Cronbach's alpha was found 0.925 for all scale items. Guttman split-half coefficient was 0.413 with a statistically significant p value. Structural equation analysis results of the scale for validity were given in the Table 2. Total score for emotional difficulties was found to be 18.40 $\pm$ 4.10, whereas total score for behavioral difficulties was 4.86 $\pm$ 4.24 in the scale. Total scale score was found to be 23.26 $\pm$ 6.40 in the whole scale. These results indicated that factor structure of the scale was in accordance with

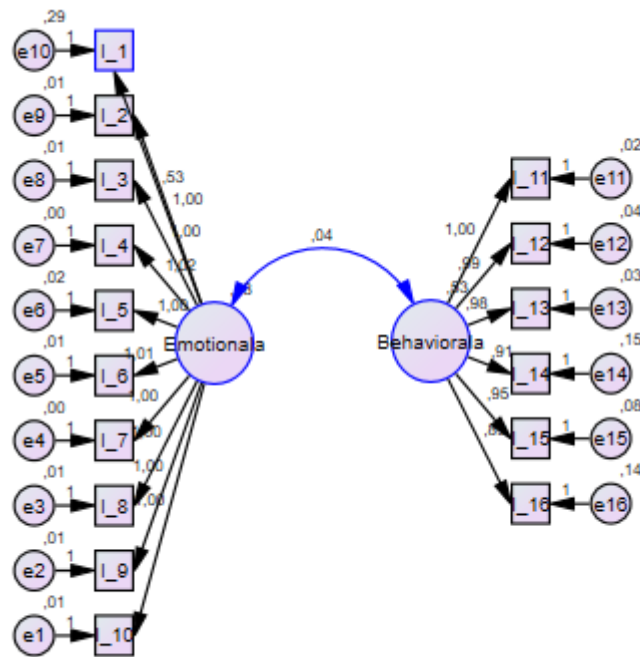
original scale (RMSEA: 0.137; CMIN/DF: 16.470; AGFI: 0.738; CFI: 0.943). Path constants and confirmatory structural equation analysis results were given in Table 3 and Scheme 1. Bartlett's test results expressed that the validity analysis is significant ($p < 0.05$). Scale variance level showed that the scale explained 88.39% of total variance in cumulative. KMO level was 0.934 indicating that sample of the

Table 1. Lawshe analysis results and content validity rates (CVR) of items in the scale

Item	CVR
I feel lonely	0.82
I cry a lot	1.00
I am unhappy	0.82
Nobody likes me	1.00
I worry a lot	1.00
I have problems sleeping	1.00
I wake up in the night	1.00
I am shy	0.82
I feel scared	1.00
I worry when I am at school	1.00
I get very angry	1.00
I lose my temper	1.00
I hit out when I am angry	0.82
I do things to hurt people	0.82
I am calm	1.00
I break things on purpose	0.82

Table 2. Descriptive statistics for items in the scale

	n	Min.-Max.	Mean $\pm$ SD
I-1	820	0.00-2.00	1.76 $\pm$ 0.58
I-2	820	0.00-2.00	1.85 $\pm$ 0.44
I-3	820	0.00-2.00	1.85 $\pm$ 0.44
I-4	820	0.00-2.00	1.85 $\pm$ 0.44
I-5	820	0.00-2.00	1.84 $\pm$ 0.45
I-6	820	0.00-2.00	1.85 $\pm$ 0.44
I-7	820	0.00-2.00	1.86 $\pm$ 0.43
I-8	820	0.00-2.00	1.85 $\pm$ 0.44
I-9	820	0.00-2.00	1.85 $\pm$ 0.44
I-10	820	0.00-2.00	1.85 $\pm$ 0.44
Emotional	820	0.00-20.00	18.40 $\pm$ 4.10
I-11	820	0.00-2.00	0.78 $\pm$ 0.74
I-12	820	0.00-2.00	0.79 $\pm$ 0.75
I-13	820	0.00-2.00	0.78 $\pm$ 0.74
I-14	820	0.00-2.00	0.87 $\pm$ 0.77
I-15	820	0.00-2.00	0.81 $\pm$ 0.75
I-16	820	0.00-2.00	0.83 $\pm$ 0.75
Behavioral	820	0.00-12.00	4.86 $\pm$ 4.24
Total	820	0.00-32.00	23.26 $\pm$ 6.40



Scheme 1. Path constants and confirmatory structural equation analysis results

Table 3. Confirmatory factor analysis results for each item

		Estimate	S.E.	C.R.
I-10	<--- Emotionala	1.000		
I-9	<--- Emotionala	1.002	0.013	79.151
I-8	<--- Emotionala	1.001	0.013	78.656
I-7	<--- Emotionala	1.003	0.010	105.440
I-6	<--- Emotionala	1.007	0.012	82.275
I-5	<--- Emotionala	1.004	0.015	67.090
I-4	<--- Emotionala	1.019	0.011	97.025
I-3	<--- Emotionala	1.000	0.013	77.745
I-2	<--- Emotionala	1.000	0.013	77.754
I-1	<--- Emotionala	0.526	0.045	11.820
I-11	<--- Behaviourala	1.000		
I-12	<--- Behaviourala	0.992	0.011	86.620
I-13	<--- Behaviourala	0.983	0.011	87.443
I-14	<--- Behaviourala	0.905	0.020	46.121
I-15	<--- Behaviourala	0.952	0.015	62.991
I-16	<--- Behaviourala	0.888	0.019	46.479

study was sufficient. Original structure of the scale was obtained from explanatory factor analysis (Table 4).

DISCUSSION

Personal self-reports achieved by children and adolescents supply a feasible and practical

method for monitoring emotional and behavioral properties and distress within childhood and adolescence era.⁴¹ There have been some re-searches on validation of self-evaluating scales

Table 4. Explanatory factor analysis results for factor loadings

	Component	
	Emotional	Behavioral
I-7	0.992	
I-4	0.988	
I-6	0.976	
I-9	0.971	
I-8	0.969	
I-10	0.968	
I-3	0.968	
I-2	0.965	
I-5	0.955	
I-1	0.389	
I-13		0.971
I-11		0.969
I-12		0.962
I-15		0.939
I-14		0.900
I-16		0.894

KMO: 0.934

Bartlett's test of sphericity, $p < 0.001$

Total variance explained: %88.392

scales on psychiatric issues in literature.^{25,42-44}

M&MF was developed and validated by Deighton et al. as a self-report scale related with well-being and mental health for children and adolescents in 2012.²⁵ They reported that M&MF had the potential for screening and detection of mental health and well-being in children and adolescents compared with Strengths and Difficulties Questionnaire.²⁵ The study in which paper and computer format of M&MS was compared reported that there were lower scale scores on paper formats for children and adolescents. However, this difference was not explained by item-level probabilities within statistical analysis.²⁴ Patalay et al. conducted a research related with the discrimination of M&MS between high-risk and low-risk samples and clinic validation of M&MS.²⁷ Their findings about M&MS were that M&MS filled the gap for a brief self-report scale for mental health problems and that M&MS could be used in both community and clinical settings with its strong reliability and validity values.²⁷

In our research, Lawshe method results showed that all items in the scale had higher CVR rates.³⁹ According to Lawshe content validity analysis results, all items in the scale had content validity with a factor weight over 0.616 showing that content validity of the scale is applicable in Turkish population.²⁹ In our research, scale variance rate was very high and found to be 88.39%. In our sample, Total score of emotional difficulties was 18.40 ± 4.10 indicating that clinically importance level in our population.²⁷ On the other hand, total score of behavioral difficulties was 4.86 ± 4.24 , indicating that under borderline or normal levels. It may be argued that Turkish population is more sensitive than behavioral feature. Table 3 shows that CR values of SEM analysis and subscales of the M&MF was strongly appropriate for Turkish population. KMO and Bartlett's test of sphericity showed that sampling of the research is

sufficient for principle component analysis.

Conclusion

M&MF scale was conducted as a community sample comprised of 820 children and adolescents (491 females and 329 males) to validate M&MF in Turkish population. Behavioral difficulties with a high score from threshold value in the current study might express that Turkish population is more sensitive than behavioral feature. The results of the current study revealed that M&MF is a valid and reliable self-reported measuring scale for Turkish children and adolescents.

It may be used to diagnose clinic samples in schools with simple application methods depending on the fact that the scale is used to discriminate between clinic and community samples. In addition, the scale may be used to define prevalence and incidence of behavioral and emotional symptoms in Turkish adolescent and children population in order to understand effect of other psychology related problems.

M&MF Scale is a modern self-reported measure evaluated by professionals that may solve clinical symptoms in advance and may reduce financial expenses cost-effectively. Psychologic evaluation promotes community integration and improves the life quality of individuals.

Further researches can be established within community samples correlated with clinic samples and this M&MF can be compared with other measuring scales. M&MF can be also performed in young individuals aged between 17 and 21.

Limitation

The current study was not held within a multicentric purpose, as Şişli district is a cosmopolite urban area resembling the whole population in Turkey.

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