The Matson Evaluation of Social Skills with Youngsters-II (MESSY-II) and Its Adaptation for Iranian Children and Adolescents with Intellectual Disability

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ABSTRACT

Objective: The aim of the present study was to evaluate the psychometric properties and factor structure of the Matson Evaluation of Social Skills with Youngsters-II (MESSY-II) in a community population in Iran.

Methods: The Iranian version of the MESSY-II was administered by interviewing care staff of all children and adolescents (n=355) with administratively defined intellectual disabilities (IDs) living in Tehran, Esfahan, Karaj & Kurdistan.

Results: Exploratory factor analysis showed two factor structures (Inappropriate Assertiveness/ Impulsiveness and Appropriate Social Skills) for the MESSY-II. MESSY-II subscales demonstrated high internal consistency reliability.

Conclusion: The present study indicates that the Persian form of MESSY-II is applicable to research on populations with varying mental functioning, diagnoses, ages, and living arrangements.

1. Introduction

The development of social skills is an important process in young childhood and adolescence. Deficits present in childhood that are left undetected and/or untreated can lead to increased problems into adulthood (Greene et al., 1999). In addition, impairments in social skills may be related to larger problems such as developmental disability, Attention Deficit/Hyperactivity Disorder (ADHD), depression, anxiety, antisocial behavior, and other mental health problems (Davis et al., 2011; Lugnegard, Hallenback, & Gillberg, 2011; Mahan & Matson, 2011; Matson & Wilkins, 2009; Worley & Matson, 2011). Social skills deficits may occur because of these disorders or as part of the disorders themselves. As a result, identification of social weaknesses is essential for providing treatment and improving prognosis and quality of life. Identifying social strengths is also important for treatment and can guide clinicians to use assets that the child already possesses to help improve the areas of deficit.

The assessment and training of social and adaptive skills is important for a number of reasons. First, social and adaptive skills deficits can compromise successful transition from institutional to community living (Jacobson & Schwartz, 1991; Doll, 1953). Second, deficits in these areas may contribute to the etiology of psychiatric disorders and behavioral problems (Borthwick-Duffy & Eyman, 1990; Matson & Sevin, 1994). Finally, social and adaptive deficits often persist in living areas where the philosophy of care consists of passive learning rather than active treatment (Matson & Hammer, 1996).

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The most common method of assessing social skills is the use of rating scales (Matson & Wilkins, 2009). While there are many broad band measures that include a social skills subscale, there are few well-researched scales assessing social strengths and weaknesses exclusively. The Matson Evaluation of Social Skills with Youngsters (Matson, 1988) is one such rating scale that is intended to measure solely social behaviors, both positive (e.g. eye contact, smiling at others, helping others) and negative (e.g. bragging, getting into fights, lying). The MESSY was originally designed and used to assess the social skills of typically developing children and adolescents, but it has also been researched with a number of varying populations (e.g. developmental disabilities, hearing and vision impaired, intellectual disability, mental health disorders) and translated into several different languages.

The original scale had two different forms: a self-report form and parent/teacher report form consisting of 62 and 64 items, respectively. The MESSY has been translated into nine other languages and researched internationally: Spanish (Mendez, Hildalgo, & Ingles, 2002), Chinese (Chou, 1997), Japanese (Matson & Ollendick, 1988), Dutch (Prins, 1997), Hindi (Sharma, Sigafoos, & Carroll, 2000), Hebrew (Pearlman-Avnion & Eviator, 2002), French (Verté, Roeyers, & Buysse, 2003), Turkish (Bacanli & Erdoğan, 2003), and Slovakian (Vasil'o Bacanli & Baumgartner, 2004).

In addition, the MESSY has been researched with various populations, including children with hearing and visual impairments (Matson, Heinze, Helsel, Kapperman, & Rotatori, 1986; Matson, Macklin, & Helsel, 1985; Raymond & Matson, 1989), intellectual disabilities (Matson & Barrett, 1982), anxiety disorders (Strauss, Lease, Kazdin, Dulcan, & Last, 1989), depression (Helsel & Matson, 1984), bipolar disorder (Goldstein, Miklowitz, & Mullen, 2006), and autism spectrum disorders (Matson, Stabinsky-Compton, & Sevin, 1991) (all cited in Matson, Neal, Fodstad, Hess, Mahan, and Rivet, 2010). However, there is still no agreement about which factorial structure best explains the data because the results of former studies showed different number of factors and different arrangements of items.

Yousefi & Khayer (2002) examined the reliability and validity of self-report form of MESSY in high school students in Iran. Self-report form of the MESSY showed a five-factor structure in the Iranian society. At present, the MESSY-II only has one form, which is a parent/caregiver report form. During standardization process it was decided that social skills would best be examined through parent/caregiver, report as opposed to self-report due to difficulties with poor insight in the populations frequently administered the MESSY. Also, since the measure's utility has largely been clinic and community focused; there is a decreased need for a teacher report form.

Due to changes in MESSY-II, and since the measurement of psychological characteristics for diagnostic and research purposes requires valid and reliable tools, this study aimed to examine the psychometric properties of the MESSY-II for the first time in an Iranian sample and to compare the results to foregoing studies with the MESSY-II in other socio-cultural contexts.

2. Methods

Participants

The participants for this investigation were recruited among the children & adolescents who enrolled in exceptional children schools. Exceptional children schools in 4 provinces -Tehran, Esfahan, Alborz and Kurdistan- were selected by sampling method. After getting permission from the authorities (i.e. Ministry of Education in each province), the head teachers were contacted in order to coordinate the data collection processes. Then, after having a workshop with the head teacher on MESSY-, teachers were asked to complete a paper and pencil version of the final draft of the Iranian version of MESSY-II for each student in a set time while one of writers of this article was present in the agreed school for any possible help or inquiries. Data were collected in about 1 month.

According to guidelines for sample size to factor analysis (Hooman, 2001), Three hundred and fifty five 355 (223 male, 132 female) participants were recruited from exceptional children schools. Their ages ranged from 3 to 26 years, with a mean age of 11.34 years (SD=3.87). According to clinical practice in Iran, the participants were classified into having a mild (40.8%), moderate (47.0%), severe (11.3%), or profound (0.8%) level of mental retardation. The most frequent diagnoses were Down's syndrome (53.8%), autism (20.8%), mentally retarded (16.9%), and 8.5% of the individuals were reported to have other disorders.

Measures

Matson Evaluation of Social Skills with Youngsters-II (MESSY-II)

The MESSY-II is a social skills measure for a broad range of children, ages 2–16, based on observations of both appropriate and inappropriate social behaviors.

Table 1. Factor structure of the MESSY-II.

Item no.		Factor 1: Inappropriate assertiveness/impulsiveness	Factor 2: Appropriate social skills
1	Makes others laugh	0.484	
2	Threatens people or acts like a bully	0.770	
3	Becomes angry easily	0.688	
4	Is bossy (tells people what to do instead of asking)	0.541	
5	Gripes or complains often	0.638	
6	Speaks (breaks in) when someone else is speaking	0.702	
7	Takes or uses things that are not his/hers without permission without permission	0.535	
8	Brags about self	0.576	
9	Slaps or hits when angry	0.753	
11	Gives other children dirty looks	0.677	
12	Feels angry or jealous when someone else does well	0.615	
13	Picks out other Children's faults/mistakes	0.561	
15	Breaks promises	0.464	
16	Lies to get what he/she wants	0.537	
17	Lies to get what he/she wants	0.734	
21	Hurts others' feelings on purpose	0.587	
22	Is a sore loser	0.601	
23	Makes fun of others	0.616	
24	Blames others for own problems	0.619	
29	Is stubborn	0.703	
32	Thinks people are picking on him/her when they are not	0.517	
35	Makes sounds that bother others	0.548	
36	Brags too much when he/she wins	0.526	
38	Speaks too loudly	0.532	
43	Always thinks something bad is going to happen	0.427	
48	Gets upset when he/she has to wait for things	0.450	
52	Gets in fights a lot	0.736	
53	Is jealous of other people	0.467	
57	Stays with others too long (wears out welcome)	0.529	
58	Explains things more than necessary	0.376	
60	Hurts others to get what he/she wants	0.746	
62	Thinks that winning is everything	0.483	
63	Hurts others' feelings when teasing them	0.759	
64	Wants to get even with someone who hurts him/her	0.717	
10	Helps a friend who is hurt		0.672
14	Always wants to be first		0.585

Item no.		Factor 1: Inappropriate assertiveness/impulsiveness	Factor 2: Appropriate social skills
18	Walks up and initiates conversation;		0.470
9	Slaps or hits when angry		0.340
25	Sticks up for friends		0.608
26	Looks at people when they are speaking		0.759
27	Thinks he/she knows it all	0.316	0.493a
28	Smiles at people he/she knows		0.586
30	Acts as if he/she better than others		0.675
31	Shows feelings		0.659
33	Thinks good things are going to happen		0.474
34	Works well on a team		0.834
37	Takes care of others' property as if it were his/her own		0.767
39	Calls people by their names		0.607
40	Asks if he/she can be of help		0.811
41	Feels good if he/she helps others		0.839
42	Defends self		0.598
44	Tries to be better than everyone else		0.741
45	Asks questions when talking with others		0.671
47	Feels sorry when he/she hurts others		0.589
49	Likes to be the leader	0.381	0.468[a]
50	Joins in games with other children		0.767
51	Plays by the rules of a game		0.812
54	Does nice things for others who are nice to him/her	-0.362	0.712[a]
55	Tries to get others to do what he/she wants	0.354	0.368[a]
56	Asks others how they are, what they have been doing, etc.		0.579
59	Is friendly to new people he/she meets		0.713
61	Talks a lot about problems or worries	0.312	0.433[a]

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This measure is a standardized version of the original MESSY, which was designed to assess social skills in children aged 4–18 (Matson, Rotatori, et al., 1983). The MESSY-II has 64 items identical to the original MESSY parent/teacher report form, which are each rated on a Likert-type rating scale from 1 ("not at all") to 5 ("very much"). Recent studies indicate that the scale has strong psychometric properties including internal consistency, and convergent and divergent validity (Matson et al., 2010). Although the original MESSY parent/teacher report form yielded a two-factor structure (i.e. Inappropriate Assertiveness/Impulsiveness scale and Appropriate Social Skills scale), the factor structure of the MESSY-II has yet to be established.

Data analysis

In order to determine the factor structure of the MESSY-II, an exploratory factor analysis with Principle axis factoring was used for 64 items of the MESSY-II. Given the likelihood of correlations among the underlying constructs of the factors, an oblique Promax rotation was used (Brown, 2006). The optimal factor structure was determined via examination of the scree plot, and comprehensibility of factors (Zwick & Velicer, 1986). Items with factor loadings greater than 0.30 were re-

tained for each factor (Kline, 2000). Internal consistency of the factors was examined using Cronbach's alpha (Cronbach, 1951) and the 0.70 criterion for adequate reliability (Nunnally & Bernstein, 1994).

3. Results

First, the appropriateness of KMO and Bartlett's Test of Sphericity was investigated. The value of KMO was 0.938. The Bartlett's Test of Sphericity was significant as well (χ^2=14124.014, df=1891, P<0.001). Such statistics reveal that factor analysis can be run. Exploratory factor analysis yielded a two-factor solution for the MESSY-II. The total variance accounted for the two-factor model was 41.43%.

Inappropriate Assertiveness/Impulsiveness factor accounted for 29.37% of the variance. Appropriate Social Skills factor accounted for 12.6% percent of the variance. The correlation between two factors was moderate r=0.410. Two items (i.e. item 20: Is afraid to speak to people; and item 46: Feels lonely) did not meet the criteria of 0.30, were removed from the measure. Table 1 lists the factors and corresponding items.

Next, internal consistency was examined for the two factors of the MESSY-II using Chrobach's alpha. Inappropriate Assertiveness/Impulsiveness had an internal consistency of 0.950 (Mean=70.58; SD=24.87), and Appropriate Social Skills had an internal consistency of 0.952 (Mean=75.64; SD=24.91). Corrected Item-total correlations were considered for each of the retained factors to determine if the removal of additional items was warranted due to coefficients below 0.30 (Field, 2005). Item total correlations of Inappropriate Assertiveness/Impulsiveness subscale ranged from 0.42 (item 15) to 0.70 (item 9, 17, and 52). Item total correlations of Appropriate Social Skills subscale ranged from 0.37 (item 19) to 0.77 (item 41). Since no item on any of the scales had a correlation of less than 0.30, therefore, all items were retained following the two items that had been removed during the exploratory factor analysis.

4. Discussion

Impairments in social skills are a defining aspect of developmental disabilities, and deficits in these skills can affect the ability of children, adolescents, and adults to progress in other areas across the spectrum of development. Furthermore, social deficits are major risk factors for challenging behaviors (Farmer & Aman, 2009; Tenneij, Didden, Stolker, & Koot, 2009), and similarly, they can compound problems of psychopathology (Brim, Townsend, DeQuinzio, & Poulson, 2009; Matson, Dempsey & Rivet, 2009; Niklasson, Rasmussen, Óskarsdóttir, & Gillberg, 2009; Rose, Bramham, Young, Paliokostas, & Xenitidis, 2009). For these and other reasons, the development of measures of social skills is very important (Matson & Boisjoli, 2009a, 2009b; Matson & Dempsey, 2009c; Van Den Hazel, Didden, & Korzilius, 2009).

The purpose of this paper was to determine the factor solution of a measure used to assess social skills, the MESSY-II in Iranian population (Matson et al., 2010). The original MESSY was initially developed nearly three decades ago, but recently standardized (see Matson et al., 2010). Exploratory factor analysis of the MESSY-II yielded a two-factor solution. Two factors were Inappropriate Assertiveness/Impulsiveness and Appropriate Social Skills. This factor structure was consistent with initial two-factor solution for the original MESSY. But two items (item 20 & 46) were eliminated in the Persian form. The obtained results showed that the internal consistency of the Iranian MESSY-II is in line with that of previous pieces of research on the MESSY-II and that the proposed two-factor model had an acceptable internal consistency.

Social deficits are not in isolation and often are related to problems in communication, difficulties with relationships, and deviancy in adolescence. In addition, many other conditions include social skills deficits as symptoms. Therefore, it is important for clinicians to be able to reliably evaluate areas of social skills strengths and weaknesses as part of a comprehensive evaluation. Early identification of social skill problems allows for early intervention leading to a better prognosis (Beauchamp & Anderson, 2010).

Assessing social skills in younger children has been demonstrated to be more difficult than assessing those in older children. However, the MESSY shows promising psychometric properties to assess these skills in young children in Iran. To follow guidelines for best practice, clinicians should consider multiple sources of information and multiple mediums (e.g. interviews, standardized measures, and observations) when making any diagnostic decisions. Despite being developed years ago, the MESSY has shown to be a reliable and valid measure of social skills and continues to be a valuable resource for clinicians (Hazinski & Matson, 1985).

Although this study further highlights the usefulness of the MESSY-II in the assessment of social skills, the current study is not without limitations. The head teachers were only respondents and Parents not used as a source

of information. Using samples only from 4 provinces was another limitation of this study.

Considering the study limitations, the findings should not be generalized. In general, this instrument will be a valuable teacher/parent reported measure for the evaluation of social skills (Inappropriate Assertiveness/Impulsiveness & Appropriate Social Skills) among children & adolescents with mental retardation in Iran and other Persian-speaking countries.

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