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Translation and Validation of Mental Health Inventory

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The present study aimed to translate and validate Mental Health Inventory (Veit & Ware, 1983). It was done in three phases. Phase I involved the translation of Mental Health Inventory through back translation method. Phase II aimed at establishing psychometric properties of the measure. For this purpose, sample consisting of 600 individuals (325 men, 275 women) with age ranging between 21 to 50 years was taken from different spheres of life. Psychometric properties were determined by item-total correlation, alpha reliability coefficients, and exploratory factor analysis. Factor analysis revealed two factors namely Psychological Well-Being and Psychological Distress. Results showed that mental health was positively correlated with psychological well-being and negatively correlated with psychological distress. Similarly, psychological well-being was negatively correlated with psychological distress. Results also indicated significant gender differences on psychological well-being and psychological distress as men reflected higher psychological distress and less psychological well-being as compared to women. Translated Mental Health Inventory was validated in Phase III by comparing people diagnosed with and without Major Depressive Disorder. Sample consisted of 80 individuals with equal number of diagnosed and healthy individuals taken from different hospitals. There were significant differences between both groups as healthy people reflected better mental health than diagnosed patients. Future implications of the study were also discussed.

Keywords: Mental health, psychological well-being, psychological distress

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Mental health is a significant indicator for the health condition of a population. The concept of mental health includes the absence of traditional signs of psychopathology like symptoms of anxiety and depression, as well as the presence of markers of psychological well-being like feeling cheerful, interest in life, and enjoyment (Ware, Snow, Kosinski, & Gandek, 1993; World Health Organization, 2003). Mental health may include an individual's capability to enjoy or have fun in life, and to produce equilibrium between different activities of life and efforts to attain psychological resilience. Mentally healthy individual can express his/her emotions and can successfully adapt in a range of stressful circumstances (Friedli, 2009). The World Health Organization (2010) defines *mental health* as a state of positive mental condition in which one realizes his/her capabilities, manages the life stresses, put effort effectively and efficiently, and is competent enough to put some contribution to his/her society.

According to mental health model (Veit & Ware, 1983), there are two components of mental health, first is psychological well-being and the other is psychological distress. Mental Health Inventory (MHI; Veit & Ware, 1983) was particularly developed for the assessment of mental health. Authors examined the data from around 5000 individuals in the Rand Health Insurance Experiment and exploratory and confirmatory factor analyses were used to determine the factor structure of MHI. Elaborative reliability and validity analysis were conducted to provide psychometric information (Heubeck & Neill, 2000; Veit & Ware, 1983; Ware, Manning, Duan, Wells, & Newhouse, 1984). MHI has two factors that is Psychological Distress (which explains negative mental health status) and Psychological Well-Being (which depicts positive mental health condition).

Well-being is an extensive, wide, diverse, and diffuse idea (Vázquez, Hervás, Rahona, & Gómez, 2009). According to Andrew and Robinson (1991), well-being is a positive attitude towards life. Psychological well-being has been expressed as a broad construct with numerous cognitive and affective components such as satisfaction with life, positive and negative emotions, pleasure, contentment, and congruence between anticipated and attained life aims (Awan & Sitwat, 2014). Myers and Diener (1995) studied and defined well-being by three essential components. Firstly, satisfaction with life that measures the tendency of an individual to like their work and feel contented with their own relationships. Secondly, relative presence of positive affects, which measures the feeling of pleasant emotions and evaluation of their surroundings in positive way. Thirdly, relative

absence of negative affects, which means lack of negative feelings like anxiety, depression, and anger (Kahneman & Krueger, 2006).

Psychological distress describes negative mental health states. Winefield, Gill, Taylor, and Pilkington (2012) conceptualized psychological distress as lack of interest, difficulty in sleeping, feeling disappointed or blue, feeling desperate, emotional or bored, lack of interest, and suicidal ideation. Similarly, Cardozo et al. (2012) illustrated psychological distress as the disturbing condition to manage the frustrating or harmful circumstances. According to Caron and Liu (2010), distress is the negative biased condition of being nervous, restless, worried, and irritable. In another study, Cairney (2007) defined psychological distress as a constant understanding of sadness, anxiety, bad temper, and difficulty in maintaining social relationships. MHI has been used with different populations like Chinese (Liang, Wu, Krause, Chiang, & Wu , 1992) and Australian (Heubeck & Neill, 2000). Marques, Pais-Ribeiro, and Lopez (2011) investigated the application of Portuguese version of the MHI-5. Analysis of internal consistency, temporal stability, factor constitution, and validity recommended that the MHI-5 can be suitably utilized for 10-15 years old individuals.

Mental health problems are among the most important contributors to the global burden of disease and disability. Mental health problems are estimated to account for 31% disability among individuals at all ages and in both sexes (World Health Organization, 2001). Gender stereotypes regarding proneness to mental health problems in women and men appear to reinforce social stigma and constrain in help seeking along stereotypical lines. In general, women are not more vulnerable to negative life events than men are (Dalgard, Dowrick, & Lehtinen, 2006). Men may develop mental health problems in response to stress. They may be more likely to have been socialized to express anger or other forms of acting out behavior (Kessler, McGonagle, & Zhao, 1994).

Research shows that socially constructed differences between women and men in roles and responsibilities and status and power, interact with biological differences between the sexes to contribute to differences in the nature of mental health problems suffered (Courtenay, McCreary, & Merighi, 2002). These differences vary across age groups. In childhood, most studies (Carter, Briggs-Gowan, & Davis, 2004; Grant, Hasin, & Stinson, 2004; Torgersen, Kringlen, & Cramer, 2001) reported a higher prevalence of mental health problems among boys than in girls such as aggressive and disruptive behaviors. During adolescence, boys experience more problems with anger, engage in high risk behaviors, and commit suicide more

frequently than girls. In general, girls are more prone to symptoms that are directed inwardly, while boys are more prone to act out. In adulthood, mental health related issues like antisocial behaviors are higher in men. In older age groups, mental health related problems like Alzheimer's disease, is reported to be the same for women and men. Women's longer life expectancy means that there are more men than women living with the suffering condition (Afifi, 2007; Simonds & Whiffen, 2003).

The basic purpose of the present research was to translate and validate MHI. Due to cultural and language differences, it was necessary to translate and validate MHI according to Pakistani culture, so that it could be used for identification and intervention of mental health problems. As MHI has been used in different cultures, so it could be applied for cross-cultural validation. Gender differences were also explored. For validation of MHI, difference between healthy individuals and individuals diagnosed with depression on the measure was explored.

Method

The present research consisted of following three phases:

Phase I: Translation of Mental Health Inventory (MHI) into Urdu

MHI (Veit & Ware, 1983) was translated into Urdu by the following steps:

Step 1: Forward translation. The translation was done by two Lecturers of Psychology having three years of experience in relevant academic fields and one professor of English Language having five years of experience with sufficient competency and command on language. Procedures recommended by Brislin (1980) were followed.

Step 2: Committee approach. The Urdu translations completed by bilingual experts were examined by a committee of five Subject Matter Experts in the field of test construction. These included two Assistant Professors, two Lecturers of Psychology, and researcher herself. These psychologists had at least five years of experience of teaching and research. As style of rating for all the statements of MHI was not same, experts of committee suggested to have the same structure of rating. Each item was discussed in detail to make them more understandable following the same rating for all items.

Step 3: Back translation. In this step, the Urdu translated MHI was back translated into English to verify the initial translation. Four

lecturers having M. Phil degrees in Psychology with four years of experience in academic institutes were involved in this process.

Step 4: Committee approach. Committee comprised of three Assistant Professors and one lecturer of Psychology having three years of experience in the relevant field. After receiving the translations, experts of the committee carefully observed the content of the instrument both in Urdu and English. However, commonly used words of Urdu were used in the process.

Step 5: Try out. Thirty eight items were translated and finalized for the tryout. The translated version of the scale was administered on a sample of 20 individuals (12 men and 8 women). Their age ranged from 20 to 40 years (M = 31.5, SD = 5.24). Results showed no ambiguity in the scale and it was understandable and comprehensible. Hence, the scale was ready for further validation.

Phase II: Psychometric Estimates of Translated MHI

Psychometric properties, correlation, and factor structure were determined. Independent sample *t*-analysis was done to explore the gender differences.

Sample. In Phase II, a purposive convenience sample (N = 600; men = 325, women = 275) was recruited from various universities of Islamabad. The age range of participants was 21 to 50 years (M = 35.5, SD = 10.02). Minimum qualification was 14 years of education, as an inclusion criterion for sample.

Urdu Translated MHI. Urdu Translated MHI (Veit & Ware, 1983) composed of 38 items. It consisted of two subscales: Psychological Distress comprised of 22 items and Psychological Well-being consisting of 16 items. MHI was rated on 6-point rating scale ranging from 1 = *all of the time* to 6 = *none of the time*. Total scores for Psychological Distress subscale ranged from 22 to 132 while for Psychological Well-being subscale these ranges from 16 to 96. Negative scoring was done for the Psychological Distress subscale, so high scores on total MHI reflected better mental health. MHI showed adequate reliability and strong internal consistencies ranging from .83 to .96 (Stead, Shanahan, & Neufeld, 2010).

Procedure. Permission for data collection was taken from higher authorities of administration of representative universities. Urdu Translated MHI along with informed consent form was administered on participants in the form of groups after taking consent

from participants. All the respondents were assured that the data would be kept confidential (For results see Results Section).

Phase III: Validation of Urdu Translated MHI

Urdu Translated MHI was validated by comparing healthy individuals and individuals diagnosed with depression.

Sample. A purposive convenience sample consisted of two groups that is healthy individuals and individuals diagnosed with depression was included in the present study. Forty diagnosed patients of Major Depressive Disorder (25 women and 15 men) with age ranging from 30 to 40 years (M = 35.45, SD = 2.62) were taken from different hospitals of Islamabad and Rawalpindi. Education of the sample varied from 5^{th} to 10^{th} grade. Mentally healthy individuals (N = 40) were taken from different fields of life. There were equal number of men and women with age range and education same as the sample of individuals diagnosed with depression.

Procedure. Patients were taken from the particular Psychiatry departments of the hospitals, after getting permission from the heads. They assigned a Medical Officer to approach and interact with the patients. An individual session was taken with patients before data collection to establish rapport and taking their consent. Instructions were given to the respondents to complete the questionnaire. Sample of mentally healthy people were contacted individually and independently. The same procedure of scale administration was followed as of healthy individuals.

Results

After computing Item total correlation of Mental Health Inventory (MHI), factor analysis was run to validate the factor structure. Gender differences and difference between healthy individuals and individuals diagnosed with depression were also explored.

Results in Table 1 indicate that all the items are significantly correlating with total score of Urdu Translated Mental Health Inventory and correlation coefficients are ranging from .69 to .94 for item no. 4 and 11, respectively. This reflects upon the construct validity of the measure.

Table 1

Item-total Scale Correlation of Urdu Translated MHI (N = 600)

Item No.	Corrected Item-total Correlation	Item No.	Corrected Item-total Correlation
1	.89	20	.89
2	.82	21	.94
3	.87	22	.75
4	.76	23	.69
5	.82	24	.91
6	.81	25	.89
7	.72	26	.87
8	.86	27	.88
9	.94	28	.75
10	.87	29	.88
11	.91	30	.94
12	.88	31	.91
13	.85	32	.92
14	.84	33	.94
15	.86	34	.92
16	.88	35	.91
17	.84	36	.90
18	.88	37	.81
19	.91	38	.88

Factor analysis can be used to assemble common variables into descriptive categories. Factor analysis operates on the notion that measurable and observable variables can be reduced to fewer latent variables that share a common variance, which is known as reducing dimensionality (Bartholomew, Knott, & Moustaki, 2011). According to Child (2006), the two main factor analysis techniques are Exploratory Factor Analysis (EFA) and Confirmatory Factor Analysis (CFA). In the present research, Principle Component Method of EFA was used to explore the factor structure of Translated MHI as it was being used for the first time in Pakistan in Urdu language, so it was important to first explore its factor structure in Pakistani culture and Urdu language as well. Taking the stance of Loona and Kamal (2011), it was decided to run EFA for Urdu translated version.

Table 2

Factor Loadings of the Items of Mental Health Inventory Obtained through Principal Component Factor Analysis (N = 600)

Item No.	Psychological Distress (Factor-I) (22 Items)	Psychological Well-being (Factor-II) (16 Items)
2	**.49**	.15
3	**.61**	.23
8	**.80**	.23
9	**.79**	.29
11	**.52**	.17
13	**.60**	.19
15	**.78**	.27
16	**.78**	.22
19	**.75**	.21
20	**.79**	.29
21	**.63**	.13
24	**.81**	.24
25	**.84**	.23
27	**.78**	.22
28	**.77**	.23
29	**.72**	.21
30	**.84**	.15
32	**.88**	.17
33	**.81**	.14
35	**.79**	.22
36	**.87**	.25
38	**.86**	.23
1	.21	**.66**
4	.22	**.78**
5	.22	**.71**
6	.21	**.74**
7	.29	**.74**
10	.28	**.63**
12	.17	**.59**
14	.23	**.72**
17	.28	**.89**
18	.18	**.89**
22	.21	**.81**
23	.29	**.69**
26	.18	**.82**
31	.25	**.88**
34	.29	**.77**
37	.27	**.80**
Eigen Values	12.75	9.71
% Variance	33.56	25.55
Cum. %	33.56	59.11

Table 2 shows results of EFA revealing that Translated MHI is clearly clustered into two separate factors. Final scale consisted of 16 items of factor I (Psychological Distress) and 22 items of factor II (Psychological Well-being). The results show that Eigen value of Factor I is 12.75 which explains 33.56% of variance. Factor II has the Eigen value of 9.71 which explains 25.55% of the variance. Scree plot also showed the same results. Slope of the scree plot curve levels out after two factors.

Alpha reliability coefficient of Psychological Well-being and Psychological Distress subscales were found to be .95 and .96, respectively, indicating the measures as dependable and adequate. Psychological well-being was significantly negatively associated with psychological distress (r = -.16, p < .01), while MHI (total) was significantly positively related with psychological well-being (r = .54, p < .01) and negatively associated with psychological distress (r = -.74, p < .01).

Table 3

Gender Differences on Mental Health Inventory (N = 600)

Variables	Men (*n* = 325) *M(SD)*	Women (*n* = 275) *M(SD)*	*t*(598)	95% CI *LL*	95% CI *UL*	Cohen's *d*
PD	123.03(8.12)	119.16(9.83)	5.29**	2.44	5.31	.43
PW	81.65(4.61)	93.37(4.12)	32.54**	12.43	11.01	.68

Note. CI = Confidence Interval; *LL* = Lower Limit; *UL* = Upper Limit. PD = Psychological Depression; PW = Psychological Well-being.
** p < .01.

Findings in Table 3 indicate significant gender differences on psychological distress, as men reflect higher psychological distress as compared to women. There are also significant gender differences on psychological well-being, as women indicate better psychological well-being as compared to men. Values of Cohen's d show medium to high effect size.

Independent sample *t*-test was done to determine the difference between healthy individuals and individuals diagnosed with depression on MHI. There was a significant difference between both groups {t(598) = 13.41, p < .00} as healthy people (M = 140.92. SD = 34.15) reflected better mental health than individual with depression (M = 66.70. SD = 7.72) with 95% CI [LL = -85.25, UL = -63.20].

Discussion

The aim of the present study was to translate and validate the Mental Health Inventory (Veit & Ware, 1983). On the basis of extensive procedures of scale translation, 38 items were translated which included 16 items of Psychological Well-being Subscale and 22 items of Psychological Distress subscale. The factor structure was same as the original Mental Health Inventory (Veit & Ware, 1983). The factor analysis indicated that present scale was unique in the sense that all the 38 items were clearly grouped into two sub-groups measuring the dimensions of mental health i.e., Psychological Well-being and Psychological Distress. Heubeck and Neill (2000) examined the psychometric properties of the Mental Health Inventory for Australian adolescents. They have explored the factor structure and examined two aspects of reliability, the internal consistency of responses to the Mental Health Inventory as well as their stability over a period of two and a half months. The same factor structure was found as explored in the present study. The findings are consistent with the original Mental Health Inventory (Veit & Ware, 1983). An individual who suffers from psychological distress is away from psychological healthy or fit state and involves maladaptive guidelines for management (Kelly, McClement, & Chochinov, 2006). It is minor problematic state with sign and indicators that are frequent in the society. It also includes feelings of impatience, despair, annoyance, nervousness, lonliness, and difficulty in maintaining social relationships (Ross & Mirowsky 1989). Liang et al. (1992) investigated the psychometric properties of the same in a Chinese population.

Internal consistency of the scale indicated high reliability and the item-total correlation not only indicated that all items are highly consistent with the total score. The discriminant validity of the subscales is exhibited by negative correlation between Psychological Well-being and Psychological Distress. The discriminant validity was aimed to differentiate between the Psychological Distress and Psychological Well-being (Agresti & Finlay, 2008; Borsboom, Mellenbergh, & Van Heerden, 2004).

The results on comparison between men and women indicated that there were significant gender differences as women appeared to be mentally healthier than men. The results are in a way in line with the outcomes of Goodarzi, Rajabi, Yousefi, and Mansoor (2008), who studied happiness among male and female students in university of Tehran. Female students had reported higher self-efficacy, positive

cognition, happiness, and life satisfaction than male participants. The results of the present study also revealed that women reflected better psychological well-being than men. Joshi (2010) investigated the subjective well-being along gender and concluded that the women were more satisfied with their lives than men. Gender differences do exist because of biological and psychological differences. The level of satisfaction with life among men and women can differ (Robichaud, Dugas, & Conway, 2003). The differences could be because of comfortable and better personal/family life, good interpersonal relationships (both in workplace and outside), effective communications skills, and also certain other factors like better facilities, lower expectations, and ambitions (Foot & Koszycki, 2004). On the other hand, men expressed more psychological distress than women. The results are strengthened by the findings of Rout (1999), who studied gender differences in stress, satisfaction, and mental well-being and found that men showed significantly higher anxiety and depression than women.

Translated Mental Health Inventory was validated by comparing healthy and individuals diagnosed with depression. The results indicated the significant differences between both groups on scores of Translated MHI. As the sample of diagnosed cases was taken from hospitals, they were mentally disturbed, for example, suffering from Major depression, that's why they have scored low on Translated MHI comparative to healthy people. Depression is one of the most common psychological conditions during the normal course of life with so much of losses and disappointments. Depression itself refers to a heterogeneous set of phenomenon ranging from simple mood swings to severe affective state (Kaplan & Sadock, 1996). According to Mohanth and Begum (2011), there is a positive correlation between depression and loneliness, and they have significant negative relationship with mental health and well-being. Quality of life is also influenced by mental health. Anxiety and depression are independent determinants of quality of life and it affects mental health (Haacke, Althaus, Spottke, 2006).

Limitations and Recommendations

Some limitations were faced during this research; to overcome these limitations some recommendations were suggested. Firstly, the sample size and area from which sample was taken limits the generalizability of the findings. A large and more variable sample would lead to more reliable and generalizable results in the future. Secondly, the time was too short for this study. A research based on

an extended time design would represent more reliable and valid results. Thirdly, one of the limitations of the current study was not using CFA; further research can use it to validate this factor structure. Fourthly, it is suggested for the future researches to add some more psychological disorders other than Major Depressive Disorder to validate the factor structure of MHI.

Implications

These findings can be utilized in many sectors like clinical setting, education, organizations, and research. This inventory can be applied in clinical or counseling setting for identification, screening and diagnosis of mental health problems. It can be used as a tool for pre-post assessment in intervention or prevention researches. It can be used in organizations to assess the mental health of employees. Educational sector is an important area where we can utilize it for the evaluation of mental health of students, teaching faculty and administrative staff.

Conclusion

MHI was translated in Urdu language and validated by comparing healthy individuals with diagnosed patients of Major Depression. Overall, the findings conclude that Urdu Translated MHI has the same structure as the original MHI (Veit & Ware, 1983) and appeared as a reliable and valid measure.

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