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THE FACTOR STRUCTURE OF MENTAL HEALTH: EXPLANATORY & CONFIRMATORY FACTOR STRUCTURE OF PSYCHOLOGICAL DISTRESS AND PSYCHOLOGICAL WELL-BEING MEASURES

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Abstract

Psychological distress (PD) is usually based on the level of anxiety and depressive symptoms while psychological well-being (PW) is usually conceptualized as some combination of positive affective states such as happiness, optimism, satisfaction with life, and hope. This paper addresses the question of whether psychological distress and psychological well-being are the opposite poles of the same axis of mental health or independent constructs that should be measured on two independent axes. Methods: The sample consisted of (510) Kuwait University students, (240) males with a mean age of (24.08 ±5.10) and (270) females, with a mean age of (21.68 ±2.70), (f=46.77, p< 0.001). The Beck Depression Inventory (BDI-II) and the Beck Anxiety Inventory (BAI) were administered to participants to assess Psychological Distress. In addition, the Oxford Happiness Inventory (OHI), the Revised Life Orientation Test (LOT-R), the Satisfaction with Life Scale (SWLS), and the Adult Hope Scale (AHS) were administered to participants to assess Psychological well-being. Results: The explanatory factor analysis (PCA) extracted one bipolar factor with the following loading: (.88) for OHI, (.84) for LOT-R, (.81) for SWLS, (.74) for AHS, (-.70) for BDI-II, and (-.53) for BAI which explains 56.16% of the total variance. The Confirmatory factor analysis (CFA) extracted one bipolar factor with the following loading: (.70) for OHI, (.81) for LOT-R, (.77) for SWLS, (.69) for AHS, (-.72) for BDI-II, and (-.44) for BAI which explains 48.88% of the total variance and was labeled psychological well-being vs. psychological distress. Factor Structural analysis confirms that these 6 scales can be viewed as components of two-dimensional latent constructs (psychological distress and well-being) which reflects a higher-order concept of mental health. Conclusions: We conclude that assessment of mental health in general populations should use concomitant measures of psychological distress and well-being.

Keywords

THE FACTOR STRUCTURE OF MENTAL HEALTH: EXPLANATORY & CONFIRMATORY FACTOR STRUCTURE OF PSYCHOLOGICAL DISTRESS AND PSYCHOLOGICAL WELL-BEING MEASURES

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ABSTRACT

Psychological distress (PD) is usually based on the level of anxiety and depressive symptoms while psychological well-being (PW) is usually conceptualized as some combination of positive affective states such as happiness, optimism, satisfaction with life, and hope. This paper addresses the question of whether psychological distress and psychological well-being are the opposite poles of the same axis of mental health or independent constructs that should be measured on two independent axes.

Methods: The sample consisted of (510) Kuwait University students, (240) males with a mean age of (24.08 ±5.10) and (270) females, with a mean age of (21.68 ±2.70), (f=46.77, p<0.001). The Beck Depression Inventory (BDI-II) and the Beck Anxiety Inventory (BAI) were administered to participants to assess Psychological Distress. In addition, the Oxford Happiness Inventory (OHI), the Revised Life Orientation Test (LOT-R), the Satisfaction with Life Scale (SWLS), and the Adult Hope Scale (AHS) were administered to participants to assess Psychological well-being.

Results: The explanatory factor analysis (PCA) extracted one bipolar factor with the following loading: (.88) for OHI, (.84) for LOT-R, (.81) for SWLS, (.74) for AHS, (-.70) for BDI-II, and (-.53) for BAI which explains 56.16% of the total variance. The Confirmatory factor analysis (CFA) extracted one bipolar factor with the following loading: (.70) for OHI, (.81) for LOT-R, (.77) for SWLS, (.69) for AHS, (-.72) for BDI-II, and (-.44) for BAI which explains 48.88% of the total variance and was labeled psychological well-being vs. psychological distress. Factor Structural analysis confirms that these 6 scales can be viewed as components of two-dimensional latent constructs (psychological distress and well-being) which reflects a higher-order concept of mental health.

Conclusions: We conclude that assessment of mental health in general populations should use concomitant measures of psychological distress and well-being.

1. MENTAL HEALTH IN GENERAL

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).

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.

Mental health and mental illness run along two related but distinct continua (Keyes 2002;2007) and thus, the absence of mental illness is not equal to the presence of mental health and that the aim of

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mental health programs should not only be to reduce mental illness but also to promote and maintain positive mental health. Two continua model of mental health was empirically supported in multiple studies (e.g., Keyes 2006; Keyes et al. 2008; Lamers et al. 2011).

Mental health in psychology can be determined by the relationship between psychological well-being and psychological distress.

Massé et al. (1998) demonstrated that psychological well-being and psychological distress are different, but complementary states of mental health.

Veit and Ware (1983) pointed out that mental health has two facets: psychological distress and psychological well-being. Anger or irritability, anxiety and exhaustion are typical states of psychological distress, as well as the tendency to devalue and an inclination to isolate, stay away, not engaging in activities with others. Experience these symptoms for two weeks may be a sign of distress. On the other hand, psychological well-being is often associated with happiness.

Ryff, (1989) and Ryff & Singer (2003) Psychological well-being can be summarized as the six dimensions derived from the theories of Maslow, Rogers, Jung, that share common features of positive psychological functioning (self-acceptance, positive relations with others, autonomy, environmental mastery, purpose of life, and personal growth). In the context of met traits, life satisfaction is expected to be more associated with stability (Lent, 2004).

Mental health in general populations should use concomitant measures of psychological distress and psychological well-being (Massé et al. 1998).

Mental health can be assessed by evaluating the five different components: anxiety, depression, loss of control, general positive affect and emotional ties. The first three components measure the level of psychological distress and the last two components measure the level of psychological well-being (Veit and Ware 1983).

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.

Cardozo et al. (2012) illustrated psychological distress as the disturbing condition to manage the frustrating or harmful circumstances.

Caron and Liu (2010) psychological distress is the negative biased condition of being nervous, restless, worried, and irritable.

Cairney (2007) defined psychological distress as a constant understanding of sadness, anxiety, bad temper, and difficulty in maintaining social relationships.

1.1 Mental Health in Psychiatry

(Mineka et al. 1998; Krueger & Markon, 2006; Carragher et al. 2015; Eaton et al. 2015; Kotov et al. 2017) the structure of mental disorders can be explained by two broad underlying domains: internalizing and externalizing (Krueger et al. 1998; Krueger, 1999; Krueger & Markon, 2006). Depressive disorders and anxiety disorders load on the internalizing factor and conduct disorder (CD)'fear' (panic disorder, agoraphobia, specific phobia, social phobia, and obsessive–compulsive disorder and 'distress' disorders [major depressive episode (MDE), dysthymia, generalized anxiety disorder (GAD), and post-traumatic stress disorder (PTSD) (e.g. Krueger et al. 1998; Krueger, 1999; Vollebergh et al. 2001; Watson, 2005; Krueger & Markon, 2006; Slade & Watson, 2006; Eaton et al. 2013a; Kotov et al. 2017), substance-related disorders and antisocial problems load on the externalizing factor. Farmer et al. (2009)'norm-violations' (CD, substance-use disorders), oppositional-defiant disorder (ODD), attention-deficit hyperactivity disorder (ADHD). It has also been suggested that there may be aggression-related and substance-related sub factors (Krueger et al. 2007).

Overall, the findings on the sub factor structure of the externalizing domain have so far been less consistent than for the internalizing domain (e.g. Krueger et al. 2005; Markon & Krueger, 2005; Vrieze et al. 2012).

Factor structural studies that investigated psychopathology together with personality disorders have shown that the joint latent structure can be described with a finite number of dimensions (The

two-factor structure), including internalizing and externalizing dimensions (Markon, 2010; Røysamb et al. 2010; Kendler et al. 2011; Kotov et al. 2011a, b; South & Jarnecke, 2017).

The two-factor structure has been shown to be structurally invariant across ethnic groups in the US (Eaton et al. 2013b), gender (Hicks et al. 2007; Kramer et al. 2007; Eaton et al. 2012) and over time (e.g. Vollebergh et al. 2001; Eaton et al. 2011).

2. OBJECTIVES

We assesses psychological well-being (conceptualized as some combination of positive affective states such as happiness, optimism, satisfaction with life, and hope) and psychological distress (is usually based on the level of anxiety and depressive symptoms) for college students.

This paper addresses the question of whether psychological distress and psychological well-being are the opposite poles of the same axis of mental health or independent constructs that should be measured on two independent axes.

3. METHODS

Sample: The sample consisted of (510) Kuwait University students, (240) males with a mean age of (24.08 ±5.10) and (270) females, with a mean age of (21.68 ±2.70), (f=46.77, p<0.001).

Measures: The following mental health indicators: The Beck Depression Inventory BDI-II (Beck, Steer, & Brown, 1996) consisting of 21items (4-point Likert scale) and the Beck Anxiety Inventory - BAI (Beck & Steer, 1990) consisting of 21items (4-point Likert scale). A 21-item was administered to participants to assess Psychological Distress. In addition, general positive affect:) Oxford Happiness Inventory OHI (Argyle, Martin & Lu, 1995) consists of 29 items (4-point Likert scale) the Revised Life Orientation Test LOT-R (Scheier & Carver, 1985) consists of 10 items (5-point Likert scale), the Adult Hope Scale AHS (Snyder et al., 1991) with a 12-item (8-point Likert scale), the Satisfaction With Life Scale SWLS (Diener, Emmons, Larsen & Griffin, 1985) consists of 5 items (7-point Likert scale) were administered to participants to assess Psychological well-being. We compared the components of psychological distress and psychological well-being to analyses their relations. Cronbach's Alpha reliability analyses demonstrated that all tested components are consistent to evaluate mental health.

Procedures: Dates for participation in the study were considered to ensure that the mid and final exams did not interfere with the emotional state of the participants. Participants completed the Arabic versions of OHI, LOT-R, SWLS, AHS, and BDI-II & BAI including demographics.

Statistical analysis: Cronbach's Alpha, Pearson's correlations, principal component exploratory factor analysis, Maximum Likelihood confirmatory factor analysis, f-test.

4. RESULTS

Table1: Alpha Reliability , correlations, the explanatory (PCA) and confirmatory (CFA) factor analysis of OHI, LOT-R, SWLS, AHS, and BDI-II & BAI extracts one factor solutions

Table1: Alpha Reliability , correlations, the explanatory (PCA) and confirmatory (CFA) factor analysis of OHI, LOT-R, SWLS, AHS, and BDI-II & BAI extracts one factor solutions									
Scales	**Alpha r**	**OHI**	**LOT-R**	**SWLS**	**AHS**	**BDI-II**	**BAI**	**EFA Factor**	**CFA Factor**
Happiness(OHI)	.92	--						.88	.70
Optimism(LOT)	.70	.72	--					.84	.81
Life Satisfaction (SWLS)	.79	.69	.57	--				.81	.77
Hope (AHS)	.80	.62	.60	.54	--			.74	.69
Depression(BDI-II)	.87	-.59	-.49	-.55	-.41	--		-.70	-.72
Anxiety (BAI)	.90	-.46	-.39	-.38	-.36	.49	--	-.53	-.44

Eigen – Value	3.37	2.93
% Variance	56.16	48.88
*All Correlation is significant at the 0.01 level (2-tailed).		

The explanatory factor analysis (PCA) extracted one bipolar factor with the following loading: (.88) for OHI, (.84) for LOT-R, (.81) for SWLS, (.74) for AHS, (-.70) for BDI-II, and (-.53) for BAI which explains 56.16% of the total variance. The Confirmatory factor analysis (CFA) extracted one bipolar factor with the following loading: (.70) for OHI, (.81) for LOT-R, (.77) for SWLS, (.69) for AHS, (-.72) for BDI-II, and (-.44) for BAI which explains 48.88% of the total variance and was labeled psychological well-being vs. psychological distress. Factor Structural analysis confirms that these 6 scales can be viewed as components of two-dimensional latent constructs (psychological distress and well-being) which reflects a higher-order concept of mental health (see table 2).

Table2: Alpha Reliability, the explanatory (PCA) and confirmatory (CFA) factor analysis of PD & PW extracts one factor solutions

Table2: Alpha Reliability ,the explanatory (PCA) and confirmatory (CFA) factor analysis of PD & PW extracts one factor solutions				
Variables	**Mental Health**			
	EFA Factor	h2	CFA Factor	h2
Psychological Distress	.84	.69	.80	.55
Psychological Well-being	-.84	.69	-.80	.55
Eigen – Value	1.37		1.29	
% Variance	%68.62		%63.43	

5. CONCLUSIONS

We conclude that assessment of mental health in general populations should use concomitant measures of psychological distress and psychological well-being. Finally, our study used data provided by university students, which resulted in a limitation concerning the generalizability of the results provided here. The findings of the present study contribute to the current debates among psychological distress and psychological well-being researchers by revealing that the correlations between the two components of mental health are negatively strong enough to suggest that psychological distress and psychological well-being are the opposite poles of the same axis of mental health .It is hoped that this study will pave the way for more informed and comprehensive conceptualization and assessment of mental health in Middle East culture in the years to come.

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