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Differential Relationships of Big Five personality Traits with Positive Mental Health and Psychopathology: Examining Dual Continua Model of Positive Mental Health in Pakistan

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The present study aimed to explore relationship among Big Five, positive mental health and psychopathology, we investigated whether we could replicate on heterogeneous Pakistani sample positive association between positive mental health and personality traits and negative association with neuroticism. Besides analyzing pure associations, we shed further light on confirmation of dual continua model of mental health within collectivistic Pakistani culture along with an exploration of unique contributions of multidimensional construct of positive mental health with Big Five. Our results clearly were in line with previously found positive association between psychopathology and neuroticism. Big five traits were also found to have differential associations with components of positive mental health, thereby providing support for independence of both continua hence confirming dual continua model of mental health in Pakistan.
Keywords: positive mental health, psychopathology, personality traits, dual continua model of mental health

Recently WHO defined mental health "a state of well-being in which every person realizes their own potential, can cope with normal stresses of life, can work productively and is able to make a contribution to her or his community" (WHO, 2005, p. 12).Historically, two differential approaches namely medical and psychological model (Keyes, 2002) elucidated conceptualization of mental health construct. The time-honored medical model operationalized mental health through psychopathology measures (e.g., depression, anxiety, panic disorders). Conversely wellbeing has been conceptualized as positive affective states and individual's quality of life (Keyes, 2002, p. 209). More precisely medical model recognizes mental health as equivalent to lack of psychopathological disorder however, having positive affectivity and attributes are more emphasized by psychological model.

Traditionally absence of psychopathology or dysfunction were regarded as mentally healthy state (Helman, 1991; Kovacs, 1998). Recent years have witnessed change in conceptualization of mental health leading to major shift from disordered and deficient approach towards flourishing, positive aspects of individual's functioning (Seligman & Csikszentmihalyi, 2000). There is growing trend in exploring positive mental health concept as positive affective and functioning states (Barry, 2009). Current theoretical definitions of positive mental health are inspired from early dominant literature which viewed mental health as comprising of affective (hedonism) and functioning states (eudiamonic). (Ryan & Deci, 2001). The hedonism view well-being as cognitive evaluation regarding one's quality of life (Pavot,, Diener, & Fujita, 1990; Diner & Emmons, 1985). However, consensus has been gained on conceptualizing emotional well-being in terms of positive affective states (Diener, Suh, Lucas, & Smith, 1999).

Conversely individual peak functioning and utilizations of one's unique potential are major strengths of eudiamonic perspective. This perspective was inspired by early theorization of good life (Waterman, 1993; Ryff & etal., 2008). Keyes followed (Ryff, 1989) proposition of psychological wellbeing aspects shaping individual's potential. In addition to one's unique attributes, Keyes conceptualized mental wellbeing as comprising of social element. Keyes (2005) coined multidimensional social wellbeing component for analyzing social capacities e.g., social acceptance, social coherence, social contribution, social integration and social actualization. Lastly both traditions are found to have differential relationship to other psychological occurrences; hedonic is linked to pleasure seeking and happiness and eudiamonic is more related to personal excellence and self –actualization (Huta, 2005; Vittersø, Oelmann, & Wang, 2009). Keyes (2005) unified both hedonic and eudaimonic tradition.

Specifically conceptualization of complete mental wellbeing were equated with three components i.e., emotional, psychological and social wellbeing (Keyes, 2005).Subsequent research has validated three-folded structure in various countries e.g., Dutch, Canadian, Argentinian, Italian, Iranian (Gallagher, Lopez, & Preacher, 2009; Lamers et al., 2011). Moreover, Batool and Hanif (2016) established factorial validity of positive mental health construct on Pakistani adults. The core aspects determining positive mental health were in line with recent theoretical conceptualization proposed by WHO (2005) For instance, an individual is considered mentally healthy who experience positive emotions, experience growth in individual and public domains (Westerhof & Keyes, 2008). In nutshell mental health constitutes fusion of positive affectivity and prime functioning not merely lack of dysfunction.

Dual continua model of mental health (Keyes, 2005) clearly depicts mental health along a continuum, having two distinct moderately correlated continua i.e., mental dysfunction and mental health. (Huppert & Whittington, 2003). However, varied combination of mental health states and mental disorder at all-time are probable (Keyes, 2007).Numerous studies provided support for both traditions to be harmonizing. Hence mental health is understood in a broader perspective as comprising of negative and positive dimensions (Slade, 2010).

Specifically with respect to relationship of personality traits with mental health, big five relations with mental health and dysfunction are varied (Goldberg, 1990; McCrae & Costa, 1991). Recent

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empirical evidences demonstrated significance of the robust impact of Big five traits on distinct mental health dimensions (Steel, Schmidt & Shultz, 2008). Moreover, personality traits are found to be a substantial predictor of positive mental wellbeing (Kotov et al., 2010). Previous studies have shown neuroticism to be steady and robust predictor of mental dysfunction. Generally, extraversion correlate with high level of emotional wellbeing, and low levels of neuroticism (Steel et al., 2008). Earlier empirical evidences e.g., (DeNeve & Cooper, 1998; McCrae & et al., 1991) found small positive correlations between emotional wellbeing and agreeableness, conscientiousness and openness to experience. However, empirical evidences on relationship between Big five traits and eudaimonic (psychological & social wellbeing) are scant. Earlier study (Schmutte & Ryff, 1997) reported negative correlation between neuroticism and psychological wellbeing. However, extraversion, agreeableness and conscientiousness tend to have positive associations. Nevertheless, empirical evidences generated support (Keyes, et al., 2002) for personality traits in differentiating varied intensities of emotional and psychological wellbeing.

To date, plethora of research evidences had explored wellbeing among adolescents (Fogle, Huebner & Laughlin, 2002). Notwithstanding wellbeing literature point to scant empirical studies cross culturally. Majority of these studies had been conducted in western individualistic societies. The varied dimensions of mental wellbeing might reflect different associations across cultures. Hence needs to be explored extensively. Studies (Bhullar, Schutte & Malouff, 2012) indicates that psychological processes are affected by collectivistic and individualistic cultural orientations. The present study provide indigenous insight concerning the dynamic pattern of distinctive associations among big five and positive wellbeing in collectivistic cultures such as Pakistan. The current study would expand current base of literature by testing dual continua model of mental health on Pakistani adults. Presently, dual continua model has been confirmed in numerous western population (Suldo & Shaffer, 2008) but evidence in Asian countries like Pakistan is still lacking

Present Study

The current study aimed at exploring differential relationship of personality traits with psychopathology and positive mental health. In addition big five associations with emotional, social and psychological wellbeing were also explored. Two -continua model of mental health was tested by exploring unique relationship of Big Five traits with psychopathology and positive mental health dimensions.

Method

Research Participants

The data was collected from sample of (N=622) fully employed professionals. The research participants i.e. professionals belonged to diverse work settings. A sample of professionals (N=622) comprised of males 59.1% (n=376) and females 36.5% (n=234). Initially 700 questionnaire were distributed, however 20 questionnaire booklets were discarded due to missing data. The response rate was 88%. Their average age (Mean= 26.56 years and SD= 14.86). Of 622, (55.8% married) and (38.7 %) were unmarried. Only those participants were included who had prior job experience of one year.

Measures

Demographic Information Sheet. Personal information of the participants regarding their age, gender, designation, work organization, years of experience, marital status, and monthly income was gathered.

The Brief Symptoms Inventory (BSI; Derogattis, & Melisaratos, 1983). Comprises of 53-items, measures multidimensional psychological disorders. It's a 5-point Likert scale which allows for rating of the symptoms experienced by the respondents in past week. The BSI screens nine symptom dimensions: depression, anxiety, phobic anxiety, Interpersonal sensitivity, obsessive-compulsive disorder, hostility, paranoid ideation, psychoticism, and somatization. This study found (Batool & Hanif, 2016), alpha reliabilities ranged from .77 to .95 for all the subscales, which was found to be satisfactory.

NEO-Five Factor Inventory. (NEO-FFI: Costa & McCrea, 1992). Measures personality traits comprising of 60 items. The NEO-FFI consists of five subscales, i.e. extraversion, neuroticism, openness to experience, agreeableness and conscientiousness; each having 12 items. Maximum and minimum scores on each factor are 60 and 12 respectively. It's a 5-point Likert scale ranging from 1 (Strongly Disagree) to 5 (strongly agree).

The Mental Health Continuum-Short Form (MHC-SF; Keyes, 2002).14–item, multidimensional measure of emotional, psychological and social wellbeing. Items are derived from theoretical underpinnings of feelings of wellbeing. It's a 6-point Likert scale. Feelings of wellbeing are rated along response options 1-6 past month. Emotional wellbeing comprises of 3-items, psychological, 6-items and social-5items. MHC-SF psychometric properties are established across cultures. Three factor structure had been confirmed earlier (emotional, psychological & social well-being) (Lamers et al., 2011). Currently alpha reliabilities was found to be .84 for emotional wellbeing, .82 for psychological wellbeing and .76 social wellbeing and .86 for entire positive mental health.

Procedure

The branch heads of departments of various organizations located in Islamabad, Lahore and Karachi were approached. They were requested to provide consent for data collection from respective organizations. They were briefed about purpose of the current research. Researcher provided ascertaninty regarding the anonymity and confidentiality of the given information. After having their consent booklet was handed over to respondents. Participants were individually contacted and explicated regarding present research. Some of the authorities were reluctant to provide consent for approaching participants. Some members were not comfortable for sharing their personal information specifically related to current designation, organization and monthly income. Some of the respondents refused to fill questionnaire booklet, and some were approached again and again by researcher but they did not return after having kept them for two to three weeks. Informed consent was obtained from all those who agreed to participate in the present research. Altogether questionnaires were cautiously screened for identifying response errors and lack of seriousness in selecting the given response options.

Hypotheses

H1: Neuroticism trait negatively predicts positive mental health among professionals

H2: Extraversion trait positively predicts positive mental health among employed male and female professionals.

H3: Openness to experience trait positively predicts positive mental health among professionals.

H4: Agreeableness trait positively predicts positive mental health among professionals.
H5Conscientiousness trait positively predicts positive mental health among professionals.
H6: Neuroticism trait will be positively associated with psychopathology among employed male and females.
H7: Positive mental health will be moderately negatively correlated with psychopathology

To investigate the differential relationship to personality traits, psychopathology and positive mental health, firstly correlations were computed between Big five personality traits, psychopathology, positive mental health. Secondly hierarchical regression analysis was done for exploring the differential associations among study variables. Model 1, entered positive mental wellbeing and psychological dysfunction correspondingly to explore unique associations with big five traits. Demographics were added in model II. In Model III, big five traits were entered. Moreover, unique associations of big five with positive mental wellbeing components were further explored by keeping psychopathology controlled, afterwards with psychopathology while positive mental health held constant.

Results

Table 1 shows the means, standard deviations of study variables. All the subscales of MHC-SF has shown good alpha reliabilities ranging from .76 to .84 along with NEO-FFI subscales ranging from .52 to .70. Among MHC-SF subscales, highest mean was reported by psychological wellbeing followed by social and emotional wellbeing. Conscientiousness trait has highest mean among extraversion, neuroticism, openness to experience and agreeableness.

Table 1
Descriptive Statistics for Variables of Study (N=622)

Variables	Standard Deviation	Mean	α
Age	13.44	28.68	
Emotional well being	3.49	12.59	.84
Social well being	5.13	18.20	.76
Psychological well being	5.51	26.43	.82
Neuroticism	5.53	35.89	.70
Extraversion	5.13	38.94	.62
Openness to experience	4.27	35.82	.52
Agreeableness	4.59	36.72	.64
Conscientiousness	6.29	42.62	.60
Psychopathology	50.75	129.78	.97
Positive mental health	11.13	57.06	.86

Table 2
Correlation Matrix among the Variable of the Study (N=622)

Variables	Ewb	Pwb	Swb	Neu	Ext	Open to exp	gree	Con	Psy	Pmh
Emotional wellbeing	-	.48**	.31**	-.22**	.10**	.12**	-.09*	.02	-.22**	.69**
Psychological wellbeing		-	.45**	.03	.29*	.26**	.19**	.36**	-.33**	.85**
Social well being			-	.22**	.31**	.20**	.22**	.19**	-.14**	.78**
Emotional stability				-	.53**	.42**	.58**	.43**	.23**	.03
Extraversion					-	.58**	.68**	.65**	-.13**	.28**
Openness to experience						-	.64**	.61**	-.09	.23**
Agreeableness							-	.64**	.01	.17**
conscientiousness								-	-.17**	.28**
Psychopathology									-	-.30**
Positive mental health										-

p>.05*, *p*>.01**
Note. ewb= emotional wellbeing, pwb= psychological wellbeing, swb= social wellbeing, neu=neuroticism, ext= extraversion, open to exp = openness to experience, agree= agreeableness, con= conscientiousness, psy= psychopathology.

Table 2 indicates correlations of positive mental health subscales i.e., emotional, social, psychological wellbeing with psychopathology and personality traits. Emotional stability has shown significant correlation with extraversion, agreeableness and conscientiousness and significant positive with psychopathology. Extraversion has significantly positively correlated with agreeableness and conscientiousness and significantly negatively with psychopathology.

Table 3 shows the standardized beta weights of study variables. It reveals distinctive pattern of relationship between big five and psychopathology (model 1), positive mental health (model3) while the other mental health dimension and demographics was kept constant.

Table 4 depicts the relationship of Big Five traits to positive mental health components. As expected neuroticism was found to have unique significant relationship with emotional wellbeing, while openness to experience had shown unique associations to both psychological and social wellbeing and conscientiousness to psychological wellbeing alone.

Table 3
Hierarchical Multiple Regression Analysis of Personality Traits Predicting Psychopathology and Positive Mental Health (N=622)

Predictors	Psychopathology						Positive mental health					
	Model 1		Model 2		Model 3		Model 1		Model 2		Model 3	
	ΔR^2	β	ΔR^2	β	ΔR^2	β	ΔR^2	β	ΔR^2	β	ΔR^2	β
Step 1												
Constant Mental health	.09**	-.30**					.00	-.09				
Step 2												
Constant Mental health			.13**	-.03**	.15**	-.16**			.04	-.09	.11**	.05**
Age				.02		.00				.03		.06
Gender				-.00		-.03				-.02		.00
Education				-.02		-.03				-.20**		-.18**
Marital status				-.10		-.08				.02		-.00
Designation				-.07		.07				.01		02
Years of experience				-.21**		-.12				.02		-.03
Monthly income				.05		.04				.01		.02
Step 3												
Personality traits												
Neuroticism				.24**		.24**						-.10
Extraversion				-.05		-.05						.13*
Openness to experience				-.07		-.07						.00
Agreeableness				.06		.06						.05
Conscientiousness				-.26**		-.26**						.26**

Note. Psychopathology : R^2 = .09 for Model 1 F(1, 292)= 29.57 **; $R^{2=}$ .13for Model2 (F change7, 285)= 1.76** ; $R^{2=}$.28 for Model 3 (F change (5, 280)= 12.19**. Positive mental health: R^2= .00 for Model 1 (F (1,292) = 2.62; R^2 = .05 for Model 2 (F change (7, 285) = 1.90; R^2 = .16 for Model 3 (F change (13, 280) = 4.18**. ***p < .00, **p <.001, *p <.0001

Table 4
Hierarchical Regression Analysis of Personality Traits Predicting Positive Mental Health Dimensions (N=622)

Predictors	Emotional well being		Psychological well being		Social well being	
	ΔR^2	β	ΔR^2	β	ΔR^2	β
Step 1	.00	-.03**	.02*	-.16**	.22**	.47**
Constant Psychopathology						
Step 2						
Constant	.08**-	.04**	.02	-.15	.06**	.50**
Demographics						
Age		-.05		-.02		.01
Gender		.02		.05		.02
Education		-.21**		-.14		-.19**
Marital status		-.13		.03		-.09
Designation		.03		-.01		.00
Years of experience		.04		.00		-.09
Monthly income				.02		.04
Step 3						
Constant	.03**	.01**	.15*	-.02	.05**	.52**
Personality traits						
Neuroticism		.22**		-.35**		-.08
Extraversion		.06		.17		.02
Openness to experience		.08		.21*		.19**
Agreeableness		-.05		-.01		.05
Conscientiousness		-.01		.23**		.06

***p < .00, **p <.001, *p <.0001

Note. Emotional wellbeing : R^2 = .00 for Model 1 F(1, 292)= .36; $R^{2=}$ .08for Model2 (F change (8, 285)=3.36**; R^2 = .12 for Model 3 (F change (13, 280)= 3.03**. Psychological wellbeing: R^2= .02** for Model 1(F (1,292) = 8.30**; R^2 = .04 for Model 2 (F change (8, 285) = 1.78**; R^2 = .20**for Model 3 (F change (13, 280) = 5.42**. Social wellbeing R^2 = .22 for Model 1 F(1, 288)= 81.83**; $R^{2=}$ .28for Model2 (F change (8, 281)= 14.25** ; R^2 = .34 for Model 3 (F change (13, 276)= 11.03**

Discussion

The present study investigated differential relationship of personality traits with psychopathology and positive mental health among professionals belonging to diverse workfields i.e., telecommunication, health care sector, banking and consultancy companies. Key contribution of present study is extending indigenous mental health literature within Asian collectivistic

culture. Empirical evidences has suggested that wellbeing indices differ in individualistic and collectivistic cultures (Bhullar, et al., 2012).To the best of our knowledge distinctive pattern of relationship among big five and positive mental health and mental dysfunction simultaneously on Pakistani population has not been previously explored. In line with previous studies, positive relation was likely between neuroticism and psychopathology, while other big five traits were anticipated to positively correlate with positive mental wellbeing. In addition, unique relationship of five personality traits to three components i.e., emotional, psychological, social well-being were compared and analyzed.

Findings of the present study showed significant negative correlation between positive mental health and psychopathology (r = -.30**, p < .001), thereby confirming the Dual Continua model of Positive mental health, which states that two continua i.e., positive mental wellbeing and psychological dysfunction are associated but distinct mental wellbeing indicators. These findings led to confirmation of two continua model on Pakistani adult populace (Batool & Hanif, 2016). The present study employed a large sample of Pakistani professionals working in diverse fields of life. Findings partly supported previous studies (Lamer, et al., 2015). Findings depicted positive correlation among positive wellbeing components. Big five traits shown to be associated (correlations ranging from .02 to .36), emotional wellbeing has shown significant positive association with extraversion, agreeableness, conscientiousness traits and negative association with psychopathology (confirming hypothesis1), extraversion has shown significant positive association with agreeableness and conscientiousness and negative with psychopathology. Findings of the bivariate correlation confirm the hypotheses 2, 3, 4 and 5 which indicates that big five other than neuroticism significantly predicts positive mental wellbeing. Conversely openness to experience has shown non-significant association with other traits and psychopathology. Prior research evidences were partly in line with our results (Lamers, et al., 2015). The slight differences from previous studies might depict difference between collectivistic and individualistic culture (Bhullar, et al., 2012), as these prior studies were carried out on western population. Besides the broader national culture, present sample comprised of heterogeneous group of professionals working under diverse work environments, organizational culture necessarily impact interrelationships among study variables. These results might reflect indigenous organizational environment perspective in which employees are bound to work within boundaries and set rules, which does not allow employees to go for creative endeavors that involved risk.

Findings of present study supported previous studies (e.g., DeNeve, et al., 2012), in specific domain regarding distinctive association, extraversion and openness to experience illustrated unique association to mental wellbeing, neuroticism to psychopathology. Unexpectedly, extraversion has revealed non-significant association to mental well-being components. Furthermore, openness to experience has shown distinct association with social but not to other wellbeing dimensions. Meanwhile positive affective states helps in gaining a clear perspective of managerial demands, developing belongingness with upward progression (Harter, Schmidt & Keyes, 2003). Individuals with high levels of openness to experience are more willing to accept new ideas, to perform new behaviors which may improve their effective functioning in individual life.

In this study agreeableness did not show exclusive relations neither to emotional nor social well-being except for psychological wellbeing. Conscientiousness was found unrelated to emotional and social wellbeing and significantly related to psychological wellbeing. Prior studies clearly depicted association between agreeableness, conscientiousness traits and well-being (Marzuki, 2013). Another study (Grant, Langan, Anglim, 2009) revealed subjective and psychological well-being to be correlated with extraversion, emotional stability and conscientiousness.

In nutshell, big five accounted for (28%) variance in psychological dysfunction and (16%) positive wellbeing. However big five contributed 12% variance for emotional, 20% for psychological and 34% social wellbeing. Results of current study indicated explained variance to be higher for psychopathology as compared to positive mental health by personality traits. Previous empirical literature reflected lower percentages of explained variance (DeNeve & Cooper, 1998), 20 to 33% in well-being by personality traits. However results of meta-analysis reported higher explained variance 39 to 63% for personality traits (Steel et al., 2008), when measurement differences across studies were controlled. Despite cultural variation, these differences might reflect employing varied methodological approaches. Further research should explore these variables based on variations in explained variance between current and previous studies conducted on the personality traits (DeNeve & Cooper, 1998; Steel et al., 2008; Lamers, 2011).

Limitations

Some of the limitations of present research need to be considered. The present study did not allow for drawing causal inferences among the study variables due to the cross-sectional design. Secondly, sample population consisted of professionals belonging to different work fields, there is lack of uniformity between different professional categories. Third, positive mental wellbeing and psychopathology instruments assess an individual emotional states on how they felt in the last week or month hence assessment of concurrent presence of psychological dysfunction and mental wellbeing cannot be done. Fourth, since wellbeing dimensions bear a resemblance with traits having affective component there might exist a conceptual overlap. Nevertheless, in general personality items capture individual while wellbeing relates more with affective state. Lastly, study instruments measuring wellbeing and dysfunction were standardized on western samples, there is a need to develop indigenous measures to overcome language barriers and lack of conceptual clarity that might contaminate findings, though sample was drawn from educated strata of the mainstream population.

Conclusion and Implications

To conclude, Big Five traits were distinctively related with psychological dysfunction and mental wellbeing, confirming independence of continua on Pakistani adults. These findings highlight need to upsurge mental wellbeing movement in investing towards improving individuals' mental health rather than solely utilizing efforts to deal with dysfunction. Implications of current findings suggest a strong relation between neuroticism and psychopathology, while extraversion and openness to experience are found to be related with positive mental health. This signposts need to augment intrapersonal characteristics by employing interventions to improve mental health states, this will result in alleviating psychological dysfunction. Consequently, enhanced mental wellbeing will act as buffer against developing mounting dysfunctional states. Evidently, these findings calls attention to larger

investment towards rising metal wellbeing levels at organizational and national level.

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