An Examination of Depressive Symptoms in Adolescents: The Relationship between Personality Traits and Perceived Social Support

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Abstract
Present study aimed at investigating the association between personality traits, perceived social support and depressive symptoms in adolescents. Through convenient sampling, total 302 students (110 males and 192 females) were recruited from different universities of Rawalpindi and Islamabad. The age range of sample was 18-25 years. In present study, The Big Five Inventory- Short Version (BFI-S) (Gerlitz & Schupp, 2005), The Multidimensional Scale of Perceived Social Support (MSPSS) (Zimet et al., 1988), and Depression, Anxiety and Stress Scale (DASS-21) (Lovibond & Lovibond, 1995) were used to access personality traits, perceived social support and depressive symptoms. Findings of the present study showed a significant positive relationship between neuroticism and depressive symptoms. However, extraversion, conscientiousness and perceived social support showed significant negative association with depressive symptoms. According to regression analysis, neuroticism is a positive while, perceived social support is significant negative predictor of depressive symptoms in young adolescents. Furthermore, findings of present study may assist in identifying the personality traits at risk of experiencing depression.

INTRODUCTION
Depression is affecting individuals worldwide and it is considered as a leading health dilemma. Klein (1964) posited that people suffer from depression more than any other disease. According to DSM-5, depression can be characterized by prevalence of at least 5 symptoms including depressed mood, loss of interest in activities, sleep disturbance, fatigue, negative self-concept, inability to concentrate, psychomotor agitation and recurring thoughts of hurting self during two weeks (American Psychiatric Association, 2013). Depression is different from short duration mood changes that result as a consequence of daily stressors. It affects more than 300 million people worldwide according to WHO (2018) estimate. Depression is linked with physical symptom, fatigue, sleep trouble, psychomotor activity changes, and hunger changes are links with high depression. In addition, it also linked with two hormonal changes within the brain; serotonin and norepinephrine. It is believed that any imbalance between serotonin and norepinephrine leads to depression (Trivedi, 2004).

A vast body of studies has demonstrated the association between personality traits and depressive disorder such as major depressive disorder and depression (Clark et al., 1994; Elovainio et al., 2015; Kendler et al., 1993; Kotov et al., 2010; Ormel et al., 2013). In addition, at least six theoretical models have been explained in previous studies to enlighten
these associations and at least six theoretical models (Clark, 2005; Enns & Cox, 1997; Klein et al., 2011; Krueger, & Tackett, 2003; Watson & Clark, 1995). In 2006, Matsudaïra & Kitamura (2006) ascertained that different personality traits are interrelated and their effects are independently associated to depression and anxiety.

Different models suggest the association between personality and depression including vulnerability model that suggests that personality traits or constructs predispose individuals and make them more vulnerable for developing disorder (Bagby et al., 2008). Pathoplasty model of personality-depression association suggests that personality traits affect the onset, course and severity of the depression. According to this model, neuroticism affects the severity and chronicity of depression but not development of the disorder (Bagby et al., 2008). In addition, complication model of personality-depression association suggests that personality traits affect the onset, course and severity of the depression. According to this model, neuroticism affects the severity and chronicity of depression but not development of the disorder (Bagby et al., 2008). Common-cause model suggest that depression and personality traits share common etiological factors. According to this model, serotonin functioning might be involved in personality traits and depression (Bagby et al., 2008).

According to Li et al. (2019) high neuroticism, low extraversion, and conscientiousness are significantly associated with depression. Among them, neuroticism is the chief construct which can predict the onset of depression. In addition, Jylha & Isometsa (2006) posited strong relationship between neuroticism and depressive symptoms, and moderate association between introversion and depressive symptoms. Moreover, one study conducted to investigate the association between personality traits and psychological distress revealed significant positive association between neuroticism and psychological distress. While, findings depicted significant negative association between extraversion, openness, agreeableness, conscientiousness and psychological distress (Shaheen et al., 2014).

According to Cronkite and Moos (1995) social support is defined as availability of resources to an individual (as cited in Zixi & Zhang, 2013). However, individual’s perception of having social resources providing aid and care is known as perceived social support (Zixi, & Zhang, 2013). According to Procidano and Heller (1983) the severity of psychological symptoms is majorly affected by the adequacy of social support (as cited in Lee, Dickson, Conley, & Grayson, Holmbeck, 2014). Cobb (1976) identified three basic components of the social-support as succor, nurturance and affiliation, recognition and respect, group membership. Multiple studies have addressed the linkage between social support, perceived social support and depression (Najafabadi et al., 2015; Zixi, & Zhang, 2013; Lee et al., 2014). Study conducted by Barnett and Gotlib (1988) aims to investigate the causal psychosocial factors associated with the depressive illness. Study identified six psychosocial factors as contributing in the illness were attributional styles, dysfunctional attitudes, personality, social support, marital status and coping styles. Results of review of studies suggested that marital distress and low social support plays role as etiological factors in depression.

The dynamics of social support and protection from depression through individual’s life is highly encouraged to be observed (Gariepy et al., 2016). Literature suggests huge evidence regarding relationship between personality traits and depressive symptoms but contradicting findings has made the association between these two constructs more interesting to be investigated on target in sample diverse cultures.

Rationale of the Current Study
In present era, depression is a big trouble. Most of the population being affected is left undiagnosed and not given any proper attention which increases the chances of risk-taking behaviors and different mental health problems (Williams et al., 2017). Individual differences make an individual more and less oriented towards mental health issues. It is important to
know the personality factors which are more susceptible towards depression in Pakistani culture. Therefore, the primary objective of present study is to identify the personality at risk of experiencing depression, so that it would be helpful in assisting such people.

As human is social animal and always remains in contact with people around him. It is a vivid point that social support provided to an individual in difficult decreases vulnerability of worry, stress and pain. Therefore, the aim of current study is also to discover relationship between perceived social support and depressive symptoms in adolescents to figure out the perception of adolescents regarding available social support.

**Hypotheses**

1. Neuroticism will have significant positive association with depressive symptoms in adolescents.
2. Personality traits such as extraversion, openness to experience, agreeableness and conscientiousness will show significant negative relationship with depressive symptoms.
3. Perceived social support will have significant negative association with depressive symptoms.

**METHODS**

**Participants**

In present study, three hundred and two adolescents (N = 302) were recruited from multiple universities of Rawalpindi and Islamabad. The age of participants ranged from 18-25 years (M = 22.54, SD = 3.54). Both males 36.4% (n = 110) and females 63.6% (n = 192) were part of the study. 65% (n = 198) of participants belong to nuclear family system whereas 34.4% (n = 104) belong to joint family system. 76.8% (n = 232) were students, 13.9 (n = 42) were employed and 9.3% (n = 28) were unemployed.

**Instruments**

Following instruments were used to access study constructs.

**Big Five Inventory- Short Version (BFI-S)**

Gerlitz, and Schupp (2005) developed 15-item BFI-S to assess big five personality factors. Response answers were reduced from seven Likert scale to five-point Likert scale (1 = strongly disagree to 5 = strongly agree) (Lang et al. 2011). Conbach’s alpha for personality traits such as neuroticism = .52, extraversion = .60, openness = .55, agreeableness = .45, conscientiousness = .52 (Brust, Hader, & Hader, 2016).

**The Multidimensional Scale of Perceived Social Support (MSPSS)**

Zimet et al. (1988) developed MSPSS to examine individual’s perception of social support. It consists of three subscales such as Family, Friends, and a Significant Other with four items each. Seven-point Likert scale was used for responses ranging from 1 = strongly disagree to 7 = very strongly agree. Rizwan and Aftab (2009) reported Cronbach’s alpha .89 for MSPSS.

**Depression, Anxiety, and Stress Scale (DASS-21)**

DASS-21 was developed by Lovibond and Lovibond (1995) to measure emotional states such as depression, anxiety and stress of an individual. Each subscale consists of seven items. Response options were made on 4-point Likert-type scale (0 = Did not apply to me at all, 3 = Applied to me very much or most of the time). Cronbach’s alpha reported by Sinclair et al. (2012) for depression was .91.
Procedures

By using convenient sampling technique data were collected from diverse colleges and universities of Rawalpindi and Islamabad. Informed consent was shared with respondents and were instructed about questionnaire booklet. They were assured about the confidentiality of provided information. Participants were thanked for their participation in study. Later on, the collected data was analyzed through statistical tool SPSS-21.

RESULTS AND DISCUSSION

Results

The current study aimed at examining the association between personality traits, perceived social support and depressive symptoms in young adolescents. Descriptive statistics, correlation and regression analysis of study variables is as shown in Table 1. Results indicated satisfactory alpha reliabilities of scales and subscales.

Table 2. depicts relationship between personality traits, subscales of MSPSS and depression. According to results neuroticism has significant positive association with depression whereas extraversion, conscientiousness, perceived social support and its subscales have significant negative association with depressive symptoms. However, personality traits including openness and agreeableness have non-significant relationship with depressive symptoms.

Findings in Table 3. specify predictive role of neuroticism and perceived social support in relation to depression. Results indicate that neuroticism and perceived social support explained 21% variance in depressive symptoms among adolescents. According to findings neuroticism negatively and perceived social support positively predicts depressive symptoms.

Discussion

The objective of current study was to discover link between personality traits, perceived social support and depressive symptoms in adolescents. Different scales used to measure study constructs showed satisfactory internal consistency. Results of current study suggest that neuroticism has significant positive association with depressive symptoms. However, extraversion and perceived social support showed significant negative association with depressive symptoms among adolescents. Whereas, personality factors such as openness and agreeableness showed non-significant relationship with depressive symptoms.

In research field the association between personality traits and depression is a key topic (Klein et al., 2011). Personality trait such as neuroticism is considered as an important trait related to psychological disorders and physical problems (Lahey, 2009). Neurotic individuals are more inclined to negative emotions such as sadness, aggression, self-criticism, guilt and fear (Watson & Clark, 1992). Research suggests that emotional stability is opposite to neuroticism in which individual experiences less mood swings and unpleasant emotions (John & Srivastava, 1999). Consequently, it is obvious that personality trait (neuroticism) is strongly associated with depressive symptoms and anxiety, and in other words broadly with psychopathology (Jylha & Isometsa, 2006; Clark & Watson, 1991). Results of present study in lined with previous studies that neuroticism has significant positive association with symptoms of depression (Hakulinen et al., 2015; Yang et al., 2008). Literature also suggests that neuroticism has strong relationship with psychological distress (Engen 2008; Shaheen et al., 2014; Shirazi & Ansari, 2012).

Findings of current study suggest that extraversion and conscientiousness has significant negative association with symptoms of depression. Results of earlier studies in line with present study (Bakker, Van der Zee, Lewig, & Dollard, 2006; Hakulinen et al., 2015; Jylha & Isometsa, 2006). Some of Personality traits including extraversion and conscientiousness are significantly decreases the likelihood of mental problems (Haslam,
Extraversion has significant concerns with wellbeing (Ozer & Benet-Martinez, 2006), cognitive performance and (Smith & Jones, 1992) social interactions (Eaton & Funder, 2003). According to Widiger (2005), the risk and resilience of diverse psychopathology can be assessed by extraversion. Additionally, conscientiousness is associated with discipline and goal orientation. A conscientious person has a tendency to strive hard for planned goals and implementing on it (Petter, 2017).

The association between openness to experience and agreeableness was found non-significant with depressive symptoms in current study. The role of openness to experience and

**Table 1. Descriptive Statistics of Personality traits, MSPSS and DASS-21 (N = 302)**

<table>
<thead>
<tr>
<th>Variables</th>
<th>k</th>
<th>α</th>
<th>M</th>
<th>SD</th>
</tr>
</thead>
<tbody>
<tr>
<td>Neuroticism</td>
<td>3</td>
<td>.83</td>
<td>9.42</td>
<td>1.30</td>
</tr>
<tr>
<td>Extraversion</td>
<td>3</td>
<td>.67</td>
<td>9.57</td>
<td>1.60</td>
</tr>
<tr>
<td>Openness E</td>
<td>3</td>
<td>.68</td>
<td>11.22</td>
<td>2.22</td>
</tr>
<tr>
<td>Agreeableness</td>
<td>3</td>
<td>.40</td>
<td>11.22</td>
<td>2.00</td>
</tr>
<tr>
<td>Conscientiousness</td>
<td>3</td>
<td>.51</td>
<td>9.20</td>
<td>1.30</td>
</tr>
<tr>
<td>MSPSS</td>
<td>12</td>
<td>.88</td>
<td>60.00</td>
<td>13.75</td>
</tr>
<tr>
<td>SOS</td>
<td>4</td>
<td>.86</td>
<td>19.75</td>
<td>6.18</td>
</tr>
<tr>
<td>Family Subscale</td>
<td>4</td>
<td>.85</td>
<td>20.41</td>
<td>5.48</td>
</tr>
<tr>
<td>Friends Subscale</td>
<td>4</td>
<td>.81</td>
<td>19.34</td>
<td>5.16</td>
</tr>
<tr>
<td>Depression</td>
<td>7</td>
<td>.73</td>
<td>6.97</td>
<td>3.99</td>
</tr>
</tbody>
</table>

*Note. Openness E = Openness to Experience, MSPSS = Multidimensional Scale of Perceived Social Support, SOS = significant other subscale.*

**Table 2. Correlation between Personality traits, MSPSS, and Depressive Symptoms among Adolescents (N = 302)**

<table>
<thead>
<tr>
<th>Variables</th>
<th>1</th>
<th>2</th>
<th>3</th>
<th>4</th>
<th>5</th>
<th>6</th>
<th>7</th>
<th>8</th>
<th>9</th>
<th>10</th>
</tr>
</thead>
<tbody>
<tr>
<td>Neuroticism</td>
<td>-.04</td>
<td>-.05</td>
<td>.04</td>
<td>.07</td>
<td>-.03</td>
<td>.05</td>
<td>-.09</td>
<td>-.03</td>
<td>.35**</td>
<td>.35**</td>
</tr>
<tr>
<td>Extraversion</td>
<td>.13*</td>
<td>.20**</td>
<td>.16**</td>
<td>.18**</td>
<td>.15**</td>
<td>.08</td>
<td>.19**</td>
<td>-.16**</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Openness E</td>
<td>.17**</td>
<td>.25**</td>
<td>.13**</td>
<td>.08</td>
<td>.16**</td>
<td>.09</td>
<td>-.10</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Agreeable</td>
<td>.16**</td>
<td>.11</td>
<td>.12**</td>
<td>.03</td>
<td>.13**</td>
<td>-.07</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Conscientiousness</td>
<td>.11**</td>
<td>.06</td>
<td>.14**</td>
<td>.07</td>
<td>-.11**</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>MSPSS</td>
<td>1</td>
<td>.86**</td>
<td>.86**</td>
<td>.76**</td>
<td>-.26**</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>SOS</td>
<td>1</td>
<td>.70**</td>
<td>.53**</td>
<td>-.17**</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Family S</td>
<td>1</td>
<td>.43**</td>
<td>.27**</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Friends S</td>
<td>1</td>
<td>-.17**</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
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</tr>
</tbody>
</table>

*Note. Openness E = Openness to experience, Agreeable = Agreeableness, Consc = Conscientiousness, MSPSS = Multidimensional Scale of Perceived Social Support, SOS = Significant Other Subscale, Family S = Family Subscale, Friends S = Friends Subscale.*

**Table 3. Regression Analysis of Study Variables (N = 302)**

<table>
<thead>
<tr>
<th>Predictors</th>
<th>B</th>
<th>S.E</th>
<th>B</th>
<th>S.E</th>
</tr>
</thead>
<tbody>
<tr>
<td>(Constant)</td>
<td>6.16</td>
<td>2.53</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Neuroticism</td>
<td>1.08</td>
<td>.16</td>
<td>.35***</td>
<td></td>
</tr>
<tr>
<td>Extraversion</td>
<td>-.20</td>
<td>.13</td>
<td>-.08</td>
<td></td>
</tr>
<tr>
<td>Openness E</td>
<td>-.01</td>
<td>.09</td>
<td>-.00</td>
<td></td>
</tr>
<tr>
<td>Agreeableness</td>
<td>-.06</td>
<td>.10</td>
<td>-.03</td>
<td></td>
</tr>
<tr>
<td>Conscientiousness</td>
<td>-.30</td>
<td>.16</td>
<td>-.09</td>
<td></td>
</tr>
<tr>
<td>PSS</td>
<td>-.06</td>
<td>.01</td>
<td>-.21***</td>
<td></td>
</tr>
<tr>
<td>R²</td>
<td>.21</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>ΔR²</td>
<td>.19</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>F</td>
<td>13.14***</td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

*Note. *p < .05, **p < .01, ***p < .001, Openness E = Openness to experience, PSS = Perceived Social Support.*

Whelan, & Bastian, 2009). Extraversion has significant concerns with wellbeing (Ozer & Benet-Martinez, 2006), cognitive performance and (Smith & Jones, 1992) social interactions (Eaton & Funder, 2003). According to Widiger (2005), the risk and resilience of diverse psychopathology can be assessed by extraversion. Additionally, conscientiousness is associated with discipline and goal orientation. A conscientious person has a tendency to strive hard for planned goals and implementing on it (Petter, 2017).

The association between openness to experience and agreeableness was found non-significant with depressive symptoms in current study. The role of openness to experience and
its relation to health has being studied but the findings are not consistent (Eldeouky, 2012). However, the relationship between openness to experience and depression was non-significant (Kotov et al., 2010; Klein et al., 2011). However, the results of present study contradict with earlier studies (Jylha & Isometsa, 2006; Bakker et al., 2006; Chioqueta & Stiles, 2005). Additionally, study conducted by (Bienvenu et al., 2004) showed slightly high mean of depressive patients on a facet of openness to experience. On contrary to literature, Ortiz and Gandara (2007) reported significant positive association between openness to experience and depression, depicting that association may be assessed when assessed with large sample size. As a good indicator of intellect openness to experience is considered as a good indicator of creativity (Eldeouky, 2012). Moreover, the non-significant association between agreeableness and depression is supported by previous researches (Junni, 2017; Leow & Lynch, 2016).

In line with past studies, the results of current study depicted significant negative association between perceived social support and depressive symptoms (Baltaci, & Karatas, 2015; Cohen & Wills, 1985; Thoits, 1995). The ability of individual to become positive towards any stressful event makes individual less constraint which protects individual psychological well-being. Thus, an individual may become able to cope and control any kind of stressful life event. Additionally, past study conducted by Teoh and Rose (2001) illustrates that low social support is linked to depression, anxiety, low self-esteem, and other psychological problems. It is vivid that social support is an important factor involved in promoting better health and buffer against life stressors. Perceived social support acts as a protective factor as it decreases the perception of any situation as a threat and enhances the perception of resources in surrounding (Roohafza et al., 2014). Furthermore, social support facilitates intrapersonal skills, self-trust, responsibility, and self-control by three dimensions such as warmth, behavioral control and self-determination which decline the chances of psychological issues such as depression and anxiety (Oswald & Suss, 1994).

In present study 19% of variation was contributed by neuroticism and perceived social support. The predictive role of neuroticism with depressive symptoms is reported by different study in research area (De Graaf et al., 2002; Hayward et al., 2000; Kendler et al., 2006; Ormel, et al., 2004). It is also found that neuroticism is a good marker of emotional disorders (Krueger et al., 1996). However, personality traits such as extraversion, openness to experience, agreeableness and conscientiousness were not found to be significant predictors of depressive symptoms in young adults.

Limitations and Suggestions

Along with strengths present study has also exhibits some limitations. Initially, data was collected with self-measuring inventories. However, structured interviews are recommended. Depressive symptoms can be over and under reported by the respondents so future studies should also consider interviews from family, friends and significant others. It is clear that personality traits cannot be properly accessed at single moment that is why longitudinal research design is suggested.

Implications

Present study will assist in identifying the personality traits associated with depressive symptoms in adolescents with respect to this specific culture. Additionally, findings of current study will help in designing the preventive strategies for individuals from experiencing mental health issues. It will also provide knowledge about the perception of adolescents regarding the provided social support.
CONCLUSIONS

The findings of present study reported significant positive association between neuroticism and depressive symptoms. Moreover, significant negative association between was also found between extraversion, conscientiousness and perceived social support. According to results, neuroticism is significant positive and perceived social support is significant negative predictor of depressive symptoms.

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AUTHOR CONTRIBUTIONS STATEMENT

HS worked as the principal investigator for this research project. The study was designed, conceptualized and carried out by him. He had major contribution in devising theoretical framework and reviewing literature pertaining to the study. N has been an integral part of the whole process from brainstorming to writing her input has always been important. She played an important role in data collection and analysis. She worked diligently and with interest and integrity. Both authors (HS & N) read and approved the final manuscript.

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