

## Psychosocial Predictors of Suicidal and Non-Suicidal Self-Harm: A Mediation Analysis

Afifa Gull

Institute of Applied Psychology, University of the Punjab  
&

Dr. Najma Najam

Institute of Applied Psychology, University of the Punjab

### Abstract

Rates of Deliberate Self-Harm (DSH) have increased enormously in Pakistan despite the fact that many cases of minor injuries go unreported due to the fear of penalization and stigma attached to DSH. In Pakistan, though research has been done on the self-harm but the role of psychosocial factors is not explored. Therefore, this study aimed at investigating the predictive role of psychosocial factors in DSH cases reported to the emergency departments of three major hospitals. Deliberate Self-Harm, Quality of Life, Self-esteem, Emotional Intelligence, Depression, Anxiety and Stress were measured using scales WHO Quality of Life, Self Image Profile (SIP), Trait Emotional Intelligence Questionnaire (TEIQU), DASS and indigenously developed DSH scale respectively. A sample of 120 cases of Deliberate Self-Harm ( $M$  age= 19.2,  $SD$ = 3.22) was recruited. Suicidal ideation was reported by 29.6% of the sample while 70.4% did not report intention to die with DSH. Self-Poisoning (poisoning, acids, and organophosphates) was found to be the most common method of DSH cases i.e. ingesting rat killing powder, toilet cleaners and insecticides. Self-cutting (using sharp objects like knife, blades or glass) was the second most commonly reported method followed by overdose of prescription medicine. There was found to be a strong positive correlation in scores of Depression, Anxiety and Stress (DASS) and negative correlation in self-esteem, emotional intelligence and quality of life. Self-Esteem, Quality of Life and Emotional intelligence mediated the relationship between Depression, Anxiety, Stress and Deliberate Self-Harm. This research has clinical and research implications and further research on other predictors can provide insight about this perplexing behavior.

**Key words:** DSH, Depression, Anxiety, Stress, Self-Esteem, Emotional Intelligence

Deliberate Self-Harm has emerged as an area of concern for researchers and clinicians around the world due to rapidly increasing rates of such behaviors in adolescents and young adults. It is defined as intentional damage inflicted to one's body without any fatal outcome (Sutton, 2007, & Hawton et. al., 2002). Lack of a consistent definition (e.g., self-harm with and without suicidal intent) and use of varying terminologies (like self-injury, self-cutting, self-mutilation, self-inflicted violence, para-suicide, self-destruction, self-inflicted violence, self-cutting, self-poisoning, repetitive self-mutilation etc.) poses a significant issue in estimating the true prevalence rates. However, research has established that adolescents and young adults are highly vulnerable to DSH with some studies reporting rates as high as 35% (Brunner et. al., 2007; Swannell et. al. 2014; Gutierrez, Osman, Barrios & Kopper, 2001).

Cases of Deliberate Self-Harm have increased significantly in Pakistan as well, reaching as high as 1 lac cases per year according to a non-official estimate (Shahid, Khan, Naqvi & Razzak, 2008). Research has established that the typical age of onset for self-harm is between 14 and 24 years of age with a bimodal peak in onset among people 12 to 14 and 18 to 19 years of age (Nixon, Cloutier, & Jansson, 2008; Olsson, Gameroff, Marcus, Greenberg, & Shaffe, 2005; Whitelock, Ackenrode & Silverman, 2006).

In Pakistan the age group of adolescents and young adults is the more vulnerable group for suicide and deliberate self harm as reported by several researchers (Shekhani, Perveen, Hashmi, Akbar, Bachani & Khan 2018; Salman, Idress, Hassan, Idrees, Arifullah & Badshah, 2014; Shahid & Hyder, 2008; Syed & Khan 2008; Khan, Saeed, Bashir, Khan, Iqbal, Raja & Rehman, 2002; Khan, Islam & Kundi, 1996) and it is imperative to understand the psycho-social factors leading to self-harm so that a more effective preventive plan can be worked out. It is crucial to keep in mind that this is the largest group of Pakistani population (Mahar, 2014). Several methods are reported to induce self-harm. Researchers have found that a large group of self harmers (up to 69%) report using more than one method of DSH (Klonsky & Orino, 2008; Klonsky & Muehlenkamp, 2007; Muehlenkamp, 2005; Whitelock, Muehlenkamp & Eckenrode, 2008). In Pakistani context, poisoning and medicine overdose are most common methods reported in the emergency departments of hospitals (Haider & Haider, 2001; Waseem, Nadeem, Irfan & Waheed, 2004).

In terms of the risk and protective factors research (e.g., Favazza, 2001; Gratz, Chapman, Dixon-Gordon & Tull, 2016) reports that DSH is used to regulate emotions. Petrides (2009) compels that it is important to understand the underlying psychological issues that lead adolescents to harm themselves. Fliege, Lee, Grimm and Klap (2009) argue that adolescent and adult self-harmers experience more frequent and more negative emotions, such as anxiety, depression, stress and aggressiveness, than persons who do not self-harm. Marshall, Tilton-Weaver and Statton (2013) reported the direction of relationship in depressive symptoms and DSH in a longitudinal study proposing that depressive symptoms were a

predictor of DSH initially however the direction of relationship faded over the time. As proposed by the emotion regulation hypothesis of DSH, one major reason of initiation of such behaviors is regulation of negative emotions, therefore trait EI has been found to be one of the most important protective factors against DSH as reported by several researches (as Mikolajczak, Petrides & Hurry, 2009). Life stressors and Self-esteem has also been found to predict the likelihood of DSH (Hawton, Rodham, Evans & Weatherall 2002; Kumar & George, 2013). The current correlational study aims at exploring the mediating role of emotional intelligence in Deliberate Self Harm, Depression, Anxiety and Stress in adolescents and young adults..

Studies suggest that emotional intelligence can play a role to mitigate the relationship between negative emotions like (depression, anxiety, stress) and deliberate self-harm (Gratz, Chapman, Dixon-Gordon & Tull, 2016; Gratz & Tull, 2010; Mikolajczak, Petrides, & Hurry, 2009; Cha & Nock, 2009). Studies have also been reported (Cawood, Steven & Huprich, 2011) on the importance of self-esteem as a predictor and mediator of self-harm. Furthermore, Nock et. al., (2013) assert that the average age of onset of Deliberate Self-Harm is less than 30 years with a peak in early adolescents or more specifically between the ages of 11 to 25 years as period of transitional development (Johnson, Wishman, Corley, Hewitt & Rhee, 2012). Considering the fact that this age group comprises most of the population and is vulnerable to negative emotions it was considered important to understand the interlink of these factors in indigenous context. To test these hypotheses, adolescents and young adults reporting with DSH in three public sector hospitals were studied. It was hypothesized that

**Hypothesis 1:** There is likely to be a negative correlation of DSH with quality of life, self-esteem, and trait emotional intelligence.

**Hypothesis 2:** DSH is likely to have a positive correlation with depression, anxiety and stress.

**Hypothesis 3:** Trait Emotional Intelligence, Self-esteem and Quality of Life are likely to mediate the relationship between DSH and Depression, Anxiety.

## Method

**Sample:** A purposive sample of 120 [n1= 60 adolescents (age range 11- 18 years) and n2= 60 adults (age range 19-25)] was recruited. Out of these 120 participants, 60 were recruited from the emergency departments of three major hospitals of Rawalpindi and 60 were recruited from the general population (consisting of the DSH cases that are not reported to the hospitals) using the snowball sampling. Mean age of the sample was 19.11 ( $SD= 3.8$ ). Individuals with a psychiatric diagnosis were excluded. The percentage of males was 51.7% while 48.3% were females and a significant portion (75%) of the self-harmers were found to be unmarried and 48.3% were students. 58.3% belonged to a nuclear family system while 40% reported to be educated up to matric.

### Measures:

**i) Mental Health Screening Questionnaire (MSHQ):** Mental Health Screening Questionnaire (Mohsina & Kausar, 2010) was used to screen psychiatric and non-psychiatric populations. The four items of this questionnaire are based on DSM, IV-TR and ICD-10. Response option of 'Yes' and 'No' is implied to indicate the presence or absence of each problem. The score of general population is not more than 1.

**ii) Deliberate Self-Harm Scale (DSH):** The indigenously developed self-harm scale (Gull & Najma, 2019) was used to obtain

data related to the risk factors, methods and factors related to non-suicidal self-harm. This scale comprises of three sub sections. Section I pertains to the information about the risk factors. Section II, consists of the items related to suicidal ideation, methods of suicidal and non-suicidal self-harm, frequency, localization of self-harm and pain experienced during the episode of self-harm. Section III, is related to the reasons of suicidal and non-suicidal self-harm and consists of 23 items. Four point likert scale is used to record responses into strongly agree, agree, disagree and strongly disagree.

**iii) Quality of Life (QoL):** Quality of Life scale developed by WHO (1999) provides scores on the participants' perception about four life domains including physical, psychological, social and environmental. It consists of 26 total items and higher score indicates higher quality of life. The question format consists of positively framed and negatively framed questions. Urdu version of this scale was obtained from WHO. Scoring for negatively framed questions is reversed. For the current study the reliability was .77.

**iv) Self Image Profile:** The Self Image Profile (SIP) is developed by Butler and Gasson and consists of three forms for Child (7-11 years), adolescents (12 to 16 years) and adults (17-75 years). It measures both self-image and self-esteem as the participants rate themselves on 'how they think of themselves' and 'how they would like to be'. The self-esteem score is calculated by estimating the discrepancy between how they think of themselves and how they want to be. SIP was translated by the researchers in Urdu for use in current research. Scale reliability was found to be .71 for adolescents and .83 for adults.

**v) Depression Anxiety Stress Scale (DASS):** Depression anxiety stress scale was developed by Lovibond and Lovibond (1995) and translated in urdu language by Zafar and Khalily (2014). Total score for each subscale (Depression, Anxiety, Stress) is calculated by summing the scores on the relevant items of each subscale. Each subscale consists of 14 items. The depression scale assesses constructs relevant to depression including lack of involvement, dysphoria, hopelessness, devaluation of life, self-deprecation, anhedonia, and inertia. The anxiety scale encompasses situational anxiety, autonomic arousal, skeletal muscle effects, and subjective experience of anxious affect. The stress measures constructs like difficulty relaxing, nervous, being easily agitated, irritable/over-reactive and impatient. Reliability was found to be .84

**vi) Trait Emotional Intelligence Questionnaire- Short Form (TEI Que-SF):** Trait Emotional Intelligence Questionnaire developed by Petrides (2009) is a self-report inventory that comprises 30 items. It measures 15 distinct facets, 4 factors, and global trait EI on a 7 point rating scale. It covers adaptability, assertiveness, emotion perception (self and others), emotion expression, emotion management (others), emotion regulation, impulsiveness (low), relationships, self-esteem, self-motivation, social awareness, stress management, trait empathy, trait happiness and trait optimism. Urdu versions were provided by the original author of scales. It has separate forms for adolescents and adults. TEI Que yielded alpha reliability of .51 (adolescents) and .67 for adults.

**Procedure:** After obtaining permissions from the concerned quarters; cases reported to the emergency departments of hospitals were approached with the help of nursing staff. It was made sure that the relevant House Officer (HO) has already done the patient assessment and HO and/or Hospital Psychologist has not provided any psychiatric diagnosis. There are many cases of DSH that are not reported to the hospitals because of being less lethal (e.g. skin pricking, wound picking, burning etc.). Such cases were recruited from the general population using the snow ball sampling.

Participants were offered a brief introduction of the research purpose and questionnaire format followed by their consent. It took 45 to 60 minutes to complete one form. Parallel mediation was used to explore the mediating roles of emotional intelligence, self-esteem and quality of life.

**Results**

More than 53% of the participants reported 2 or more episodes of DSH in year. Although multiple body parts were used for self-harm, however, arm was the most common part of body where injury was induced.

**Table 1**

*Inter-correlation among DASS, Trait EI, QoL, SE and Deliberate Self-Harm (N= 120)*

Variables	Trait Emotional Intelligence	Quality of Life	Self-Esteem	Deliberate Self-Harm
1. Depression, Anxiety, Stress	-.63***	-.75***	-.62***	.64***
2. Trait Emotional Intelligence		.54***	.52***	-.66***
3. Quality of Life			.40***	-.57***
4. Self-Esteem				-.81***

Inter-correlation among DASS, Trait EI, QoL, SE and Deliberate Self-Harm (N= 120)

The results of correlation analysis showed that depression, stress and anxiety significantly negatively associated with trait emotional intelligence, quality of life and self-image, whereas depression, anxiety and stress was found to be significantly positively associates with deliberate self-harm. Trait emotional intelligence was found to be significantly and positively associated with quality of life and self-image, while it was found to be negatively significantly correlated with deliberate self-harm. Furthermore quality of life was found to

be positively correlated with self-image and negatively associated with deliberate self-harm. Whereas self-image had a significant negative correlation with deliberate self-harm. It was also hypothesized that, trait emotional intelligence, quality of life, self-image will mediate the relationship between depression, anxiety, stress and deliberate self-harm. Table 2 represents direct effects while table 3 presents indirect effect.

**Table 2**

*Direct Effects of DASS, Trait EI, QoL and SE on Deliberate Self-harm*

Antecedent	Consequent							
	Trait Emotional Intelligence		Quality of Life		Self-Image		Deliberate Self-Harm	
	$\beta$	SE	$\beta$	SE	$\beta$	SE	$\beta$	SE
Constant	171.62***	9.506	114.45***	5.167	40.45***	8.118	116.31***	9.80
Depression, Anxiety, Stress	-.73***	.09	-.83***	.050	-.69***	.07	-.08	0.06
Trait Emotional Intelligence							-.19**	0.03
Quality of Life							-.30***	0.06
Self-Esteem							-.60***	0.04

Antecedent	Consequent								
	Trait Emotional Intelligence		Quality of Life		Self-Image		Deliberate Self-Harm		
	$\beta$	SE	$\beta$	SE	$\beta$	SE	$\beta$	SE	
Covariates									
Gender	.06	2.83	.15*	1.53	.01	2.41	-.02	1.02	
Age	.08	3.10	.04	1.68	.50***	2.64	-.02	1.35	
Education	.04	.47	.06	.25	-.09	.40	.02	0.16	
Family System	.02	3.09	-.10	1.68	.18**	2.64	-.07	1.13	
Physical Abuse	-.17*	3.40	-.05	1.85	.14*	2.90	.01	1.25	
Sexual Abuse	.01	4.30	-.02	2.33	-.06	3.67	-.05	1.52	
Mental Abuse	.11	3.14	.03	1.71	-.06	2.68	-.02	1.12	
Parents Death	-.06	3.62	.10	1.97	-.05	3.09	.07	1.29	
Criticism by Parents	-.25**	3.35	-.07	1.82	.01	2.86	.01	1.23	
Neglect by Others	.10	3.30	-.09	1.79	-.02	2.82	-.05	1.18	
Fight with Close One	.06	3.06	.06	1.66	-.01	2.61	-.05	1.08	
Death of Close One	.06	5.19	-.01	2.82	-.14*	4.43	.02	1.88	
Financial Problems	-.09	3.60	.12	1.95	-.08	3.07	.16**	1.30	
		$R^2 = .575$		$R^2 = .628$		$R^2 = .658$		$R^2 = .821$	
		$F(14, 105) = 10.14, p < .001$		$F(14, 105) = 12.67, p < .001$		$F(14, 105) = 14.41, p < .001$		$F(17, 102) = 27.57, p < .001$	

Note: *Coeff.* = standardized regression coefficient, \* $p < .05$ , \*\* $p < .01$ , \*\*\* $p < .001$ .

**Table 3**

*Specific Indirect effect of Trait Emotional Intelligence, Quality of Life and Self-image between Depression, Stress, Anxiety and Deliberate Self-harm.*

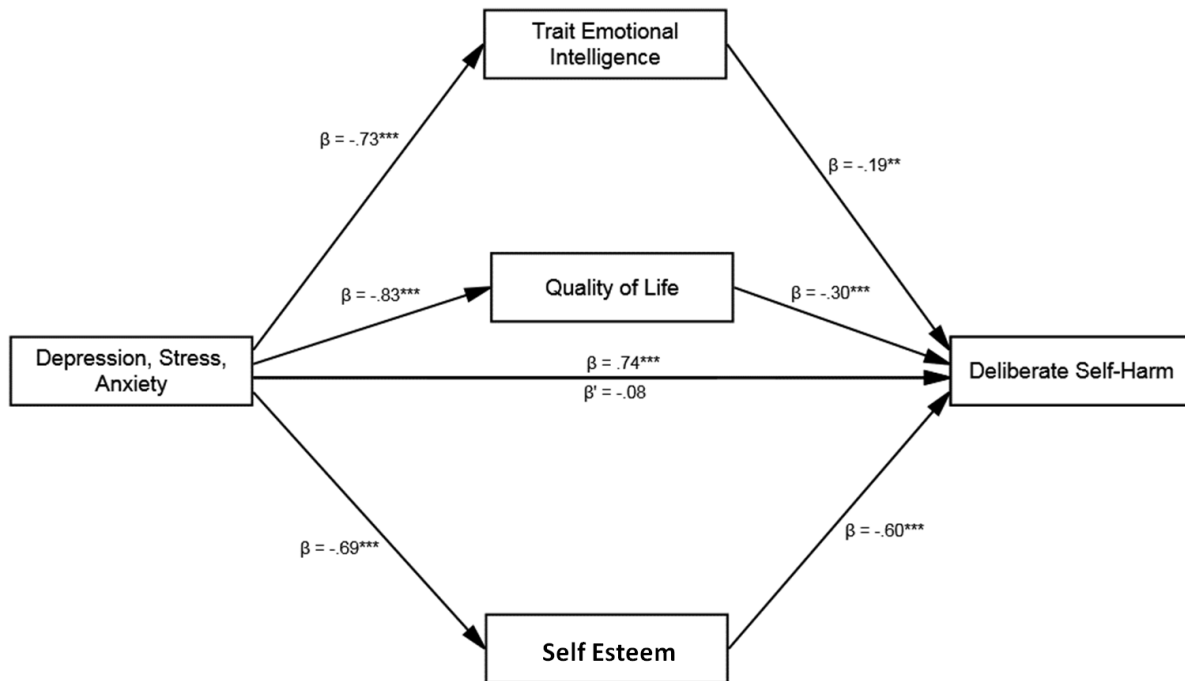
Mediators	<i>Coeff.</i>	<i>BootSE</i>	<i>BootLLCI</i>	<i>BootULCI</i>
Trait Emotional Intelligence	.15***	0.06	0.04	0.26
Quality of Life	.26**	0.07	0.13	0.39
Self-Esteem	.42**	0.08	0.27	0.58

Note. *Coeff.* = standardized regression coefficient, *BootSE* = bootstrapped standard error, *BootLLCI* = bootstrapped lower limit confidence intervals, *BootULCI* = bootstrapped upper limit confidence intervals \* $p < .05$ , \*\* $p < .01$ , \*\*\* $p < .001$ .

Results of direct effects (table 2) showed depression anxiety and stress to be significant negative predictor of emotional intelligence, quality of life and self-esteem, however, it (depression, anxiety and stress) was found to be a non-significant predictor of deliberate self-harm. On the other hand, emotional intelligence, quality of life and self-esteem were significant negative predictors of deliberate self-

harm. Similarly, in table 3, it could be seen that emotional intelligence, quality of life and self-esteem mediated the relationship between depression, anxiety stress and deliberate self-harm. Higher levels of depression, anxiety and stress lead to a decrease in EI, QoL and SE which subsequently lead to increased self-harm (Fig 1).

Figure 1  
Statistical Model of Parallel Mediation



## Discussion

The correlation analysis revealed positive correlation between the scores of Depression, Anxiety and Stress with Deliberate Self-Harm (DSH) scores. Several researches (Garish & Wilson, 2015; Klonsky, Oltmanns, & Turkheimer, 2003; Marshall, Tilton-Weaver, & Stattin, 2013; You, Leung, & Fu, 2012; Stallard, Spears, Montgomery, Phillips, & Sayal, 2013) have also supported the hypothesis that depression is consistently correlated with self-harm, i.e. people who engage in self-harm report higher levels of depression than their non self-harming counterparts. Garisch and Wilson (2015) conducted a longitudinal study to explore the correlates of self-harm in adolescents and reported that depression and anxiety (along with other correlates for example alexithymia, bullying, impulsivity, substance abuse, sexuality concerns, mindfulness, resilience and self-esteem) were directly related to self-harm. In Pakistan, though very few studies have explored the psychological correlates of self-harm, however, depression and anxiety have been found to be associated with self-harm in clinical cases of DSH with some reporting a higher incidence of depression. For example, Patel et. al. (2003) in a retrospective case series found 58.4% incidence of depression in sample of 202 adolescents (mean age= 17).

Similarly, Shaikh (2014) also reported anxiety to be statistically correlated with self-harm. In Pakistan, higher prevalence rates of depression, anxiety and stress were also reported by WHO in 2017, similarly some individual studies have also reported rates of depression as higher as 35% (Hussain et. al. 2011). Varying but high prevalence rates of depression, anxiety and stress have been reported in different studies. For example, in survey of medical students 70% were found to have anxiety and depression (Khan et. al. 2006), Gaddits (2005) reported 6% prevalence rate of depression while 34% mean prevalence of anxiety and depression in general population was reported by Mirza and Jenkins (2004). This may explain the relationship of DSH with depression, anxiety and stress as a risk factor for youth with limited coping strategies for emotional regulation and problem solving it is likely that they can revert to maladaptive coping strategies such as DSH.

The association among Self-Esteem (SE), Trait Emotional Intelligence (TEI) and QoL (Quality of Life) was found to be negative, proposing that higher rates of these factors can contribute to low level of DSH.

Self-esteem is either positive or negative self-evaluation resulting in global judgement of oneself (Leary & Baumeister, 2000) and levels of SE have been consistently found to be a significant predictor of outcomes like happiness, quality of life, interpersonal relationships (Baumeister, Campbell, Krueger, & Vohs, 2003) as well as problems related to the suicidal and non-suicidal self harm (Gooding et al., 2015). Level of SE has been repeatedly associated to DSH e.g. the findings of Hawton et al., (2002) also support the results of current study. Haug et al., (2017) have also found the level of SE to be low in 5879 self harming adolescents with a mean age of 16.02 years, moreover, they also reported depression to be a risk factor of self-harm. Oktan (2017) reported self-esteem to be a regressor for self-harming behaviors in 263 high school students. Kitilla (2012) presents the notion that low self-esteem can result in lack of personal regard which can make it easier for people to engage in self-harming behaviors and vice versa.

Relationship between Emotional Intelligence (EI) and DSH was also negative. These results are also supported by the previous research, for example, Mikolajczak, Petrides and Hurry (2009) and Petride (2009) have reported that people who engage in self-harm have lower emotional intelligence supporting the notion that DSH could be a way of dealing with negative feelings. Similarly, in indigenous context Shah, Ghouri and Shah (2015) reported low emotional stability in the DSH cases reported to the hospital. Their sample also scored lower on 'reasoning' which may explain the relationship of emotional intelligence with DSH. Similarly Siddiqi and Hass have also reported emotional dysregulation in adolescents involved in DSH.

Quality of Life was found to be negatively associated with DSH. These findings also get support from the empirical literature for example, Reis et al.,(2012) predicted that poor QoL and poor self-regulation increased the likelihood of engaging in DSH by 9 times. Chamberlain, Redden and Grant (2017) have also presented the same results on three groups of self harming behaviors i.e. injury related self-harm, interpersonally related self-harm and reckless self-harm. According to them all three types of self-harm were associated with poor QoL. In indigenous context, Idress et al., (2012) have also found poor QoL to be associated with DSH in hospital cases. Some researchers suggest that this relationship could be bi-directional implying that as QoL can be a predictor of DSH, similarly as the self-harming behavior increases QoL decreases making it a vicious cycle. Kholodkov (2011) also argues that the lower quality of life could result from the stigma attached to the DSH as it hinders the possibility of seeking help affecting social life and overall quality of life. Though the research on the quality of life as a mediator of DSH is non-existent, however, it has been reported that stressful life events are associated with the tendency to self-harm, for example, Tang et al., (2016) reported that self-harm was associated with stressful life events (as health, interpersonal relationships) even after controlling for age and gender. They explored the association of stressful life events and self-harm in a school sample of N=4405 within the age range of 10 to 22, and using multinomial regression they found that stressful life events to be significantly associated with decreased risk of moderate to severe self-harm in adolescents and young adults with good emotional regulation.

Trait emotional intelligence was found to be a mediator between depression, anxiety, stress and deliberate self-harm. Anderson and Crowther (2012) build the narrative that participants with poor emotional regulation skills are prone to engaging in self-harming behaviors and EI moderate the relationship between outcomes of depression, stress and suicidal ideation. Consistent with our hypothesis results of current study also found that emotional intelligence mediated the association between the symptoms of depression, anxiety and stress. There could be several explanations for this mediating role of EI, for example, Ciarrochi, Chan and Bajgar (2001) asserted that people who are good at managing emotions related to themselves and others have better chances of getting social support when experiencing negative emotions which might protect them from self-harming behaviors. High emotional intelligence can also lead to better adaptation hence protecting from negative effects of depression and stress (Ciarrochi, et al., 2000). Trait Emotional Intelligence enables the individual to recognize and manage the negative emotions and reducing the chances of using maladaptive coping (like DSH). As Petrides (2009) reported significantly lower emotional intelligence in teenagers who deliberately harmed themselves and their negative feelings get worse due to maladaptive emotional regulation. Likewise, Christine and Nock (2009), also described that emotional intelligence is a protective factor from DSH and if adolescent score lower on trait emotional intelligence their likelihood of engaging in DSH gets higher (up to 75%) when they experience negative emotions and vice versa.

Lower level of Self-Esteem are linked to increased DSH, for example, Forrester, Slater, Jomar, Mitzman and Taylor (2016) provided a synthesis of the literature available on the association between SE and DSH. After reviewing seventeen studies, he postulated that lower levels of SE are linked to self-harm in DSH group as compared to the non DSH group and this relationship was significant in both clinical and non-clinical populations. Harrison (2009) and Tatnell et al., (2013) also provided support for this association. Muehlenkamp et al. (2011) studied the mediating role of self-esteem in context of the association between childhood sexual abuse and self-harm using the structured equation modeling. Cawood, Steven and Huprich, (2011) explored the association between self-esteem, self-harm, coping and personality pathology. Based on the data obtained from the late adolescents (N=203) they reported that self-esteem fully mediated the relationship between personality pathology and self-harm.

### Implications

According to the report of the World Bank (South Asia Human Development & Health, Nutrition, and Population, 2011) a major number of (as high as 59%) burden of disease can be accounted to the illnesses that are not contagious, with self-harm being of those. In Pakistan, the state of mental health care and facilities still need more attention and development. The economic burden of suicidal and non-suicidal deliberate self-harm can be decreased significantly by identifying this behavior and providing adequate help to the youth indulging in DSH. Identification of risk and protective factors can be helpful not only in educational institutions to increase focus on the emotional development of the students but also hospitals can train their respective staff in providing

the support a self-harming patient needs during the time of treatment and reduce the stigma attached to DSH.

## Conclusion

This research was an effort to explore the reasons behind DSH and it appears that DSH is more of an emotional regulation strategy and less of a manipulation technique.

## References

- Anderson, N. L., & Crowther, J. H. (2012). Using the experiential avoidance model of non-suicidal self-injury: Understanding who stops and who continues. *Archives of Suicide Research, 16*(2), 124-134.
- Andover, M. S., Pepper, C. M., & Gibb, B. E. (2007). Self-mutilation and coping strategies in a college sample. *Suicide and Life-Threatening Behavior, 37*(2), 238-243.
- Brunner, R., Kaess, M., Parzer, P., Fischer, G., Carli, V., Hoven, C. W., ... & Balazs, J. (2014). Life-time prevalence and psychosocial correlates of adolescent direct self-injurious behavior: A comparative study of findings in 11 European countries. *Journal of Child Psychology and Psychiatry, 55*(4), 337-348.
- Bresin, K., & Schoenleber, M. (2015). Gender differences in the prevalence of nonsuicidal self-injury: A meta-analysis. *Clinical Psychology Review, 38*, 55-64. doi: 10.1016/j.cpr.2015.02.009.
- Cha, C. B., & Nock, M. K. (2009). Emotional intelligence is a protective factor for suicidal behavior. *Journal of the American Academy of Child & Adolescent Psychiatry, 48*(4), 422-430.
- Ciarrochi, J., Chan, A. Y., & Bajgar, J. (2001). Measuring emotional intelligence in adolescents. *Personality and Individual Differences, 31*(7), 1105-1119.
- Fliege, H., Lee, J. R., Grimm, A., & Klapp, B. F. (2009). Risk factors and correlates of deliberate self-harm behavior: A systematic review. *Journal of Psychosomatic Research, 66*(6), 477-493.
- Garisch, J. A., & Wilson, M. S. (2015). Prevalence, correlates, and prospective predictors of non-suicidal self-injury among New Zealand adolescents: Cross-sectional and longitudinal survey data. *Child and Adolescent Psychiatry and Mental Health, 9*(1), 28.
- Gratz, K. L., Chapman, A. L., Dixon-Gordon, K. L., & Tull, M. T. (2016). Exploring the association of deliberate self-harm with emotional relief using a novel implicit association test. *Personality Disorders: Theory, Research, and Treatment, 7*(1), 91.
- Haider, S. I., & Haider, I. (2001). Deliberate self harm. *Pakistan Journal of Medical Sciences, 17*(3), 151-155.
- Hawton, K., Rodham, K., Evans, E., & Weatherall, R. (2002). Deliberate self harm in adolescents: Self report survey in schools in England. *British Medical Journal, 325*(7374), 1207-1211.
- Khan, M. M., Islam, S., & Kundi, A. K. (1996). Parasuicide in Pakistan: Experience at a university hospital. *Acta Psychiatrica Scandinavica, 93*(4), 264-267.
- Klonsky, E. D., & Olino, T. M. (2008). Identifying clinically distinct subgroups of self-injurers among young adults: A latent class analysis. *Journal of consulting and clinical psychology, 76*(1), 22.
- Klonsky, E. D., & Muehlenkamp, J. J. (2007). Self-injury: A research review for the practitioner. *Journal of Clinical Psychology, 63*(11), 1045-1056.
- Kumar, P. S., & George, B. (2013). Life events, social support, coping strategies, and quality of life in attempted suicide: A case-control study. *Indian Journal of Psychiatry, 55*(1), 46.
- Mahar, A. (2014). Pakistan's youth bulge: Human resource development (HRD) challenges. *Islamabad Policy Research Institute*.
- Marshall, S. K., Tilton-Weaver, L. C., & Stattin, H. (2013). Non-suicidal self-injury and depressive symptoms during middle adolescence: A longitudinal analysis. *Journal of Youth and Adolescence, 42*(8), 1234-1242.
- Mikolajczak, M., Petrides, K. V., & Hurry, J. (2009). Adolescents choosing self-harm as an emotion regulation strategy: The protective role of trait emotional intelligence. *British Journal of Clinical Psychology, 48*(2), 181-193.
- Muehlenkamp, J. J. (2005). Self-injurious behavior as a separate clinical syndrome. *American Journal of Orthopsychiatry, 75*(2), 324-333.
- Nixon, M. K., Cloutier, P., & Jansson, S. M. (2008). Nonsuicidal self-harm in youth: A population-based survey. *Canadian Medical Association Journal, 178*(3), 306-312.
- Olfson, M., Gameroff, M. J., Marcus, S. C., Greenberg, T., & Shaffer, D. (2005). National trends in hospitalization of youth with intentional self-inflicted injuries. *American Journal of Psychiatry, 162*(7), 1328-1335.
- Patel, M. J., Shahid, M., Riaz, M., Kashif, W., Ayaz, S. I., Khan, M. S., ... & Furqan, M. (2008). Drug overdose: A wake up call! Experience at a tertiary care centre in Karachi, Pakistan. *Journal of the Pakistan Medical Association, 58*(6), 298.
- Petrides, K. V. (2009). Psychometric properties of the trait emotional intelligence questionnaire (TEIQue). In C. Stough, D. H. Saklofske, and J. D. Parker, *Advances in the assessment of emotional intelligence*. New York: Springer. DOI: 10.1007/978-0-387-88370-0\_5.
- Reis, M., Matos, M. G., Ramiro, L., & Figueira, I. (2012). Understanding self-harm in young people: An emotional imbalance in need for intervention. *Problems of Psychology in the 21st Century, 4*, 50-61.
- Roy, B., & Chakma, P. (2017). Social Support, Coping Strategies and Quality of Life in Attempted Suicide: A Hospital Based Study. *Eastern Journal of Psychiatry, 18*(2).
- Ahmad, S., Bashir, M. Z., Khan, D., Iqbal, J., Raja, K. S., & Rehman, A. (2002). Epidemiology of suicide in Faisalabad. *Journal of Ayub Medical College Abbottabad, 14*, (4).
- Salman, S., Idrees, J., Hassan, F., Idrees, F., Arifullah, M., & Badshah, S. (2014). Predictive factors of suicide attempt and non-suicidal self-harm in emergency department. *Emergency, 2*(4), 166.

- Shahid, M., Khan, M. M., Naqvi, H., & Razzak, J. (2008). Cost of treatment of deliberate self-harm: a study from Pakistan. *Crisis, 29*(4), 213-215.
- Shahid, M., & Hyder, A. A. (2008). Deliberate self-harm and suicide: A review from Pakistan. *International Journal of Injury Control and Safety Promotion, 15*(4), 233-241.
- Shekhani, S. S., Perveen, S., Akbar, K., Bachani, S., & Khan, M. M. (2018). Suicide and deliberate self-harm in Pakistan: A scoping review. *BMC Psychiatry, 18*(1), 44.
- Stallard, P., Spears, M., Montgomery, A. A., Phillips, R., & Sayal, K. (2013). Self-harm in young adolescents (12–16 years): Onset and short-term continuation in a community sample. *BMC Psychiatry, 13*(1), 328.
- Syed, E. U., & Khan, M. M. (2008). Pattern of deliberate self-harm in young people in Karachi, Pakistan. *Crisis, 29*(3), 159-163.
- Waseem, T., Nadeem, M. A., Irfan, K., & Waheed, I. (2004). Poisonings in patients of medical coma and their outcome at Mayo Hospital, Lahore. *Annals of King Edward Medical University, 10*(4).
- Whitlock, J., Muehlenkamp, J., & Eckenrode, J. (2008). Variation in nonsuicidal self-injury: Identification and features of latent classes in a college population of emerging adults. *Journal of Clinical Child & Adolescent Psychology, 37*(4), 725-735.
- Whitlock, J., Eckenrode, J., & Silverman, D. (2006). Self-injurious behaviors in a college population. *Pediatrics, 117*(6), 1939-1948.
- Yates, T. M., Tracy, A. J., & Luthar, S. S. (2008). Nonsuicidal self-injury among privileged youths: Longitudinal and cross-sectional approaches to developmental process. *Journal of Consulting and Clinical Psychology, 76*(1), 52.
- You, J., Leung, F., & Fu, K. (2012). Exploring the reciprocal relations between nonsuicidal self-injury, negative emotions and relationship problems in Chinese adolescents: A longitudinal cross-Lag study. *Journal of Abnormal Child Psychology, 40*(5), 829-836.

Received: March, 19, 2019

Revisions Received: January 1, 2022