

Self-compassion and posttraumatic growth: The mediating role of psychological flexibility

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Self-compassion and posttraumatic growth have previously been associated with positive mental health and functioning. They have recently garnered increased research interest in psychotherapeutic milieu as they have also been found to promote adaptive responses to trauma. On the other hand, psychological flexibility represents a variable known to have an impact on many human abilities including the capacity to shift mindsets and behavioural responses and is increasingly being understood as a crucial trait to develop for therapeutic change. The present study sought to examine whether self-compassion would lead to posttraumatic growth as well as the mediating role of psychological flexibility in this relationship. Data was obtained from 208 participants (females=143, males=65), age range=18 to 50 years ($M = 27$ years, $SD = 6.89$) who reported being exposed to at least one traumatic experience in the last 5 years. The results found positive correlations between all the three variables used in the study. It was found that self-compassion does lead to post-traumatic growth ($c' = 4.9303$, $CI = 0.4947$ to 9.3659 , $p = 0.0295$). Psychological flexibility proved as the mediator between self-compassion and post-traumatic growth, with indirect effect $IE = 5.9091$ at $95\% CI = (3.2340, 8.9695)$. The findings add to the host of literature on positive functions served by self-compassion, specifically in its contribution towards post traumatic growth. Further, this study explicates the mediating mechanism through which self-compassion exerts its potential effects by pointing out to the role of psychological flexibility.

Keywords: flexibility; mediation analysis; posttraumatic growth; psychological flexibility; self-compassion

Trauma and its implications for one's physical, behavioural and emotional and psychological responses has been one of the most relevant questions in human history, especially the social sciences (Tedeschi et al., 1998). A considerable amount of literature has focused on the prevalence and exposure to traumatic events and have most often highlighted it to occur in one of the following ways – “being witness to death or serious injury, unexpected death of a loved one, being mugged, being in a life-threatening automobile accident, and experiencing a life-threatening illness or injury” (Kessler et al., 2017).

Clinically speaking, PTSD and other forms of adjustment disorders are relevant as associated possible outcomes - emotional distress, increased physiological arousal, increased aggression against self and others, depersonalization, avoidance, other cognitive deficits including attention disturbance, ruminations and flashbacks, guilt, compulsions, anxiety and depression can likely become further predictors of decline in overall functioning (van der Kolk, 2000), characteristic of Post - Traumatic Deprecation. However, it is not just negative outcomes that constitute the gamut of stress responding. Initial research in the field has typically focused on the negative sequelae of traumatic events, however, interest in understanding how traumatic experiences can be a source of positive change and growth began in the 1980's and 1990's, in response to the paradigmatic shift towards studying healthy responses and attitudes of the human nature (Maslow, 1970).

Post-traumatic growth as described by Tedeschi and Calhoun (2004), reflects an enhanced state of thinking and functioning including shifting of values and orientations in the wake of the trauma. It has been understood to operate on a continuum, with the rates of growth reported between 30 and 80% (Linley & Joseph, 2004). Post-traumatic growth can result in five areas which include “new perspectives, improved relationships, personal strength, appreciation of life and spiritual change” (Tedeschi & Calhoun, 1996). Studies reveal that Post Traumatic Growth and Post Traumatic Deprecation can co-occur (Zięba & Wiecheć, 2019). Thus, the trajectory that a traumatic event triggers for an individual, whether towards growth or deprecation or both, cannot be seen in isolation. It is important to understand the psychological factors influencing growth subsequent to trauma - where one recognizes the damaging nature of trauma, while also giving credit to pathways that give way to PTG, both as a process and as an outcome and it is within this context that the present study is situated.

One of the more recent relationships that have been explored in the context of protective variables that serve as buffers in the aftermath of traumatic events, is that between self-compassion and post traumatic growth. Self-compassion, with underpinnings in Buddhist philosophy, is defined as allowing oneself non-judgmental understanding in the face of pain & failure, seeing them as part of human experience without avoiding or disconnecting from them, thus giving oneself a chance to heal and grow (Neff, 2003a). It includes three interactive and amplifying components, those being Self-kindness, Common Humanity and Mindfulness. Thus, in a large body of trauma research, self-compassion emerges as an important construct, associated with reduced intensity of ruminations & depressive symptoms (Nolen-Hoeksema et al., 2008), effective coping with stress through reliance on positive cognitive restructuring, lowering experiential avoidance, over-identification and obsessive rumination through mindfulness (Allen & Leary, 2010).

For individuals who have undergone or are living with trauma, event centrality or the degree to which trauma becomes an integral part of one's identity (Kemani et al., 2016) and has a substantial impact on trauma recovery. Thus, it becomes necessary to reorganise the mental resources and switch to alternative perspectives. Psychological flexibility is the ability to experience the present moment fully and to persist or change behaviour in the service of chosen values (Gloster et al., 2011). Studies have found an association between post-traumatic stress symptoms, PTG and psychological flexibility (Boykin et al., 2020) with it serving as a protective factor for even those who are negatively impacted by ‘Early Life Trauma’ (Richardson & Jost, 2019). Hence, a focus on the development of psychological flexibility becomes even more important.

As we have seen so far, despite the ubiquitous nature of the prevalence of traumatic events, the range of responses to the same can differ in significant ways, emphasising the need for a broader lexicon when it comes to stress responding. Just as observers can exert a degree of intentional control over the perception of reversible figures (Toppino, 2003), research has shown that restructuring and re-scripting form an integral component to post-traumatic stress recovery (Kangaslampi & Peltonen, 2019) and post-traumatic growth (Janoff-Bulman, 2004). Thus, multiple variables such as self-compassion & cognitive fusion (Basharpoor et al., 2020), psychological flexibility (Boykin et al., 2020), resilience, social support & positive coping (Yu et al, 2014) may mediate and moderate this relationship.

Thus, the current study focuses on self-compassion and psychological flexibility in how they pertain to post-traumatic growth. As we have highlighted earlier, there is much literature to evidence that both self-

compassion and psychological flexibility may be seen as predicting and protecting factors when it comes to posttraumatic growth, and both independently have been the focus in the management of PTSD in the context of cognitive restructuring (Adams and Leary, 2007) and coping strategies (Vettese et al., 2011). There is less research, however, in understanding the interlinked pathways by which these may operate. Few emerging studies do highlight psychological flexibility as increasing the chances of compassionate responding (Hayes et al., 2006), through mindfulness and values directed action (Atkins & Parker, 2012). We extend the line of previous work by Wong & Yeung (2017), where they found that self-compassion leads to post-traumatic growth and that several adaptive cognitive processes such as acceptance, positive reframing and meaning mediate this relationship. Thus, in the present study, we consider the role of psychological flexibility as the mediating variable between self-compassion and post-traumatic growth.

METHODS

Participants

The sample consisted of 208 participants who were recruited using a Google form which was posted on social media websites such as LinkedIn, Instagram and Facebook. The mean age of the participants was 27 years, of which 68.8% were females and 31.3% were males (Table 1). Inclusion criteria for participation in the study included being at least 18 years of age and having experienced a crisis or negative life event(s) (e.g., losing a loved one, experiencing abuse, experiencing natural disaster, having an accident, having cancer/other diseases).

Table 1
Sociodemographic Characteristics of Participants

Variable		<i>n</i>	%
Gender	Male	65	31.25
	Female	143	68.75
Age	18–20	20	9.62
	21–30	146	70.19
	31–39	31	14.90
	40–49	9	4.33
	50 and above	2	0.93

Procedure

Participants were invited to the study using a link to the Google Form posted on various social media sites such as LinkedIn, Instagram and Facebook. After obtaining informed consent, participants were asked to complete an online survey. They were required to fill in a short demographic questionnaire, and to respond to a checklist through which they reported the type of past crises or traumatic event(s) experienced by them. Only those participants who had undergone one or more of the enlisted events were asked to complete the Google Form. After completion of the survey, participants were debriefed and due to the sensitive nature of the questions asked, the participants were provided details of mental health services that they can access. This study was conducted in accordance with the guidelines of the Declaration of Helsinki (Holm, 2013).

MEASURES

Past traumatic events

The past traumatic events experienced by the participants were measured by a checklist of events. The checklist included different types of traumatic events such as academic achievement problems (e.g., failure and frustration), Relationship problems (end of an important relationship and conflicts), death of a close one, problems in social adjustment in school or workplace (e.g., feeling socially isolated and experienced bullying), betrayal (e.g., fraud, lied to, cheated etc.), serious illness of oneself or a close person (e.g., chronic illness, potentially fatal illnesses, surgery etc.), experienced parent's separation or divorce, childhood maltreatment (e.g., physical, emotional, sexual, economic and psychological abuse), sudden unemployment, suffered grievous injuries to oneself or was a witness to other being seriously injured (accident, human/natural disaster), was involved in a crime as a victim or witness (e.g., sexual violence, robbery, attack

etc.) and had incurred a significant economic loss or crisis. Participants were asked to report the duration that had passed since they experienced the events (less than 6 months ago, 6 months to a year ago, 1 to 2 years ago, 2 to 5 years ago and more than 5 years ago).

Posttraumatic growth

The Post Traumatic Growth Inventory (PTGI) was developed by Tedeschi & Calhoun (1996), which construes posttraumatic growth as a construct that depicts innate capacities of the people who emerge from adversity with more adaptive, fuller depictions of who they are and how they want to live (Calhoun & Tedeschi, 2013; Tedeschi et al., 2018). The PTGI is composed of 21 items and participants have to rate their response on a 6-point Likert scale based on the degree to which the given change took place in their lives as a result of crisis. The test-retest reliability for the 21-item PTGI was $r = 0.71$.

Self-compassion

The Self-Compassion Scale (Neff, 2003b) was used to assess self-compassion as a trait measure. The scale includes 26 items that are responded to on a 5-point scale and is based on a two-factor model: positive and negative self-compassion. The self-compassion scale has been validated in community and clinical samples, demonstrating adequate reliability and validity (Castilho et al, 2015; Costa et al, 2015).

Psychological flexibility

The Multidimensional Psychological Flexibility Inventory (MPFI) was developed as a method of objectively assessing individuals to identify the areas in which they are flexible and the areas in which they find themselves being rigid and inflexible. The MPFI (Rolffs et al., 2018) is a 60-item scale used to evaluate dimensions (Acceptance vs. Experiential avoidance, Present Moment Awareness vs. Lack of contact with present moment, Self as context vs. Self as content, Defusion vs. Fusion, Values vs. Lack of contact with values, Committed action vs Inaction) each of psychological flexibility and inflexibility. It demonstrated a satisfactory convergent validity and divergent validity.

Data analyses

Regression analysis was the principal data analysis technique used to examine the hypotheses. All tests were 2-tailed, and significance was set at 0.05. All statistical procedures were completed using SPSS. To test mediating effects, we used PROCESS for SPSS Macro (Hayes, 2012). In our study using the process modelling approach, we tried assessing the direct effects between self-compassion and post-traumatic growth and indirect effect as mediated through psychological flexibility (Figure 1). Bootstrapping, a nonparametric resampling procedure which does not impose an assumption of normality on the sampling distribution, was applied with 5,000 resamples. Bias-corrected 95% confidence intervals (CI) were used to investigate mediation effects. The mediational model used here lends itself well to research in this domain and has been used in studies assessing post-traumatic growth and its associations with different variables with a single mediator. Prior studies assessing coping strategies as a mediator of the relationship between social support and post-traumatic growth (Zhou et al, 2014), resilience as a mediator of relationship between PTSD and PTG (Lee et al, 2020), cognitive processes as mediators of the relationship between self-compassion and PTG (Wong & Yeung, 2017) among others have used a similar mediational framework.

RESULTS

Descriptive and preliminary statistical analysis

The highest number of participants, i.e., 133 participants (63.9%) reported relationship problems (e.g., end of an important relationship, farewell, broken hearted, conflicts), followed by 129 participants (62%) who experienced academic problems (e.g., failure and frustration), death of a close one (102 participants, 49%), and 92 participants (44%) suffered problems with social adjustment like feeling socially isolated and experience of bullying (Table 2). With regard to time since the experience of the event, the highest percentage of participants were found to be between 1-3 years (29.3%), followed by traumatic experience more than 5 years ago (20.7%), between 6 months-1year (19.2 %), less than 6 months (16.3%) and finally between 3-5years (13.9%) (Table 3).

Table 2
 List of Traumatic Events Reported

List of events	<i>n</i>	%
Academic achievement problems	129	62.02
Relationship problems	133	63.94
Death of loved one	102	49.04
Problems in social adjustment	92	44.23
Betrayal	72	34.62
Serious illness	61	29.33
Parents' separation or divorce	37	17.79
Childhood maltreatment	37	17.70
Unemployment	52	25.00
Accident or injuries (or was a witness)	34	16.35
Crime victim	35	16.83
Incurred huge economic losses	29	13.94

Table 3
 List of Traumatic Events Reported

Duration of events	<i>n</i>	%
Less than 6 months ago	35	16.83
6 months– 1 year ago	40	19.23
1–3 years ago	61	29.33
3–5 years ago	29	13.94
More than 5 years ago	43	20.67
Total	208	100

Correlation between variables

In the initial steps of the data analysis process, descriptive statistics and correlational analysis were completed. The frequency description, means, standard deviation for the variables are shown in Table 4. The highest mean value was found for psychological flexibility ($M=126.$) as compared to the other two variables namely self-compassion ($M=87.4$), and post-traumatic growth ($M=69.5$). The descriptive statistical analysis of the data was followed by a correlational analysis among the variables. All the variables were found to have positive significant correlation with each other. With respect to the type of traumatic event, problems with social adjustment were negatively associated with post-traumatic growth.

Table 4
 Descriptive Statistics and Correlations for the Self-Compassion, Psychological Flexibility, and Posttraumatic Growth ($n=208$)

Variables	<i>M</i>	<i>SD</i>	1	2	3
Self-compassion	4.20	0.74	–	.443*	.328*
Psychological flexibility	2.98	0.53	.443*	–	.469*
Posttraumatic growth	69.56	17.7	.328*	.469*	–

* $p < .05$

Mediation analysis

For the purpose of the study, mediational analysis was performed to examine the mediating role of psychological flexibility in the relationship between self-compassion to posttraumatic growth. An analysis was done to test the simple mediation model and direct and indirect effects were computed. As shown in Figure 1, the direct effect between self-compassion and post-traumatic growth ($c' = 4.9303$, $CI = 0.4947$ to 9.3659 , $p = 0.0295$) was found to be significant. This implies that a higher degree of self-compassion leads to a better post-traumatic growth. Also, both indirect relationships between self-compassion and psychological

flexibility, as well as psychological flexibility and post-traumatic growth were also found to be significant. Most importantly, the overall indirect mediational effect of psychological flexibility on the relationship between self-compassion and post-traumatic growth values at 5.9091, after bootstrapping, with class interval between 3.2340 and 8.9695, and is statistically significant. This further implies that psychological flexibility is an important variable that influences the relationship between Self-compassion and Post-traumatic growth.

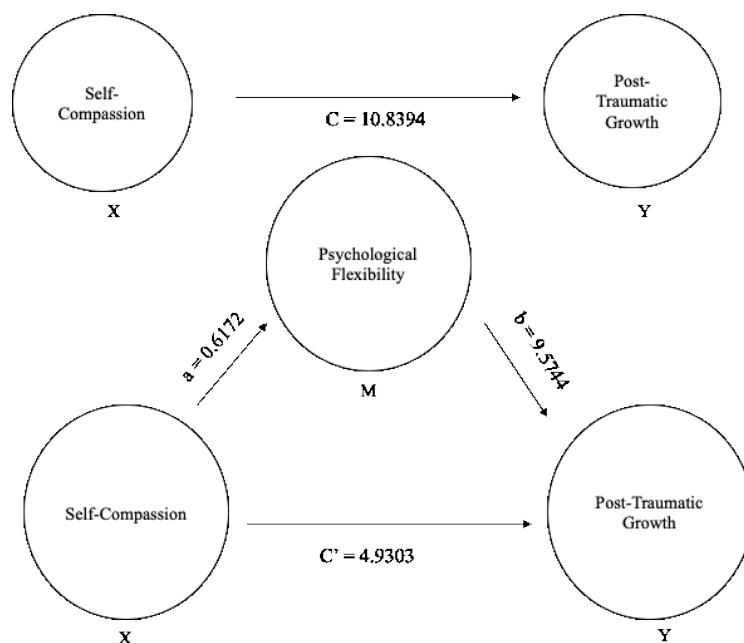


Figure 1

Mediational Model of the Self-Compassion, Post-Traumatic Growth & Psychological Flexibility

This figure depicts the direct and indirect effects between self-compassion, post traumatic growth and indirect effects through psychological flexibility

DISCUSSION

The present study investigated the role of self-compassion in facilitating post-traumatic growth by considering the mediating influence of psychological flexibility. First and foremost, in our current study, the highest number of participants, i.e., 133 participants (63.9%) reported intensely negative experiences due to intimate interpersonal relationships (like termination of an important relationship, being in frequent conflicts with romantic partners etc). The other predominant source attributed to be a traumatic experience was that of significant academic failures or frustrations, which held true for 62% of the participants. Given that the mean age of the participants in the current study was observed to be 27 years, the issues reflected in the data are to be expected, in line with Erikson's theory of psychosocial development (Marcia, 2002). There is evidence to suggest that for young adults going to college is understood as a stressful experience with encounters which could lead to the development of stress related pathology (Galatzer-Levy et al., 2012), specifically, stressful attachment associated incidents including the loss of a significant relationship or of a loved one have been associated with the development of PTSD (Fearon & Mansell, 2001).

Similarly, given the age group, difficulties or failures in academic and career-related pursuits also have the potential to damage one's view of self and identity, which could lead to the situation being experienced as difficult (Turner, Husman & Shallert, 2002). In a related study, lower academic performance in a sample of university students was linked with the subsequent development of PTSD symptoms (Periera et al., 2018).

With respect to the type of traumatic event, problems with social adjustment were negatively associated with post-traumatic growth. It is to be noted, however, that the relationship between the type of traumatic event and traumatic growth remains variable. Recent research supports less growth following harmful events purposefully caused by other persons, (Kılıç, Magruder, & Koryürek, 2016), compared to non-interpersonal events (Shakespeare-Finch & Armstrong, 2010). Positive correlations have been found between self-compassion, psychological flexibility and post traumatic growth. Furthermore, the results also indicate that self-compassion leads to PTG and psychological flexibility proves to be a mediator between self-compassion and PTG.

A study by Nolen-Hoeksema et al. (2008) revealed that heightened self-compassion is not only associated with reduced symptom severity in PTSD but has also been linked consistently to well-being (Zessin, Dickhäuser, & Garbade, 2015) and adaptive psychological functioning (Neff, Kirkpatrick, & Rude, 2007). Especially in the context of our study, wherein academic related stressors/trauma is one of the major events reported by participants, research indicates that self-compassion can be significantly involved in the learning process, where it has been linked to coping with failure, increased feelings of mastery and self-competence (Neff, Hsieh & Dejjterat, 2005). Given such findings, it is easy to understand how self-compassion a factor can be leading to PTG. Looking at this relationship from a cognitive and affective processing viewpoint, studies demonstrate that higher levels of self-compassion facilitate individuals to engage in lower experiential avoidance and feel less threatened by the painful thoughts and memories (Thompson and Waltz, 2008). Furthermore, research also supports that self-compassion is an important aspect of building coping resources in traumatic and stressful situations, especially with regard to positive cognitive restructuring, which entails altering one's perspective of a stressful situation in order to see it in a more positive light. Self-compassion provides the basis of such a coping strategy in two ways – first, an individual is able to overcome over-identification and obsessive rumination with problems; and secondly a self-compassionate individual finds it easier to refocus on positive elements of the experience rather than the negative ones (Allen & Leary, 2014). Thus, the sub-processes of self-compassion, namely, mindfulness, and self-kindness, enable a balanced perspective towards emotions, events and experiences and thereby facilitating post-traumatic growth (Wong & Yeung, 2017).

Similarly, the results of the present study also indicate psychological flexibility as mediating the relationship between self-compassion and PTG. In existing research in the field, psychological flexibility has been seen to have positive outcomes in terms of overall mental well-being (Marshall & Brockman, 2016), and has also been one of the core principles in the practice of Acceptance and Commitment therapy (ACT; Hayes, Strosal & Wilson, 2011), which has been seen to be efficacious in treatment of PTSD as well (Woidneck, Morrison & Twohig, 2014).

As mentioned earlier, the mediating influence of psychological flexibility on the relationship between self-compassion and PTG, has been the focus of limited research. However, these findings can be understood within the framework of the Functional-Descriptive Model (FDM, Tedeschi & Calhoun, 2004) which underscores that it is not the event, but the emotional struggle consequent to trauma that serves as the catalyst for PTG (Tedeschi & Calhoun, 2004). Individuals not only have differing understanding of events, but they also differ in the emotional evaluation of those experiences (Leahy, 2002). In this light, it may be possible that a psychologically flexible individual will be more openly able to accept and understand their emotional experience which is also in alignment with his/her personal values. Thus, engagement towards negative/traumatic emotional experiences, rather than avoiding the same, is important in the context of PTG and is made possible by Psychological flexibility (Leahy et al., 2012).

Furthermore, emerging studies also emphasize psychological flexibility as augmenting self-compassionate, non-controlling and non-judgemental ways of responding, through the sub-processes of mindfulness and values directed action (Hayes et al., 2006). Not just this, psychological flexibility may have implications in reducing the event centrality of the trauma as well, though further research may be needed to corroborate the same (Boykin et al., 2020).

Thus, these findings may also be beneficial for trauma practitioners and clinicians in attempts at fostering self-compassion amongst clients, in a manner that facilitates post-traumatic growth as well. The research would find a significant role in guiding intervention planning directed at reducing PTSD symptom severity as well (Miron et al., 2015), incorporating strategies such as self-compassion and psychological flexibility along

with the third wave CBT approaches (e.g., ACT, Dialectical Behavioural Therapy [DBT], & Mindfulness Based Interventions [MBI]) that emphasize changing the context of thoughts and behavioural responses (Hayes & Hofman, 2017). The current paper illuminates some of the processes involved in the third wave psychotherapeutic approaches and contribute towards healthier and more adaptive responses to trauma. Finally, the area of self-compassion as a facilitator of recovery from trauma needs more attention in both trauma and in general mental health research and services. In terms of policy framing as well, the findings of the research may serve as useful indicators to factors to consider when developing structured intervention programmes towards the treatment of trauma and related stress disorders. It further has implications for professionals undergoing training in the field, in terms of fostering sensitization towards the varyingly complex presentation, as well as towards conceptualizing protective and facilitating factors subsequent to the experience of trauma.

SUMMARY

Constructs such as post-traumatic growth, resilience and self-compassion are gaining emphasis in everyday life as well as in research in current times. The present study sought to examine whether self-compassion would lead to post-traumatic growth as well as the mediating role of psychological flexibility in this relationship. The study was successful in meeting the objectives proposed and has been able to establish a significant mediational relationship between the variables under consideration.

Limitations & future directions

The present study has some limitations in terms of sample size & representativeness. The smaller sample size and the sample consisting of a large percentage of relatively younger participants reduce the generalisability of the findings. The proposed mediation model is needed to be replicated on the clinical sample and other diverse samples. A case for causality cannot be made due to the cross-sectional design of the present study. A longitudinal study is needed to have a more comprehensive understanding of the association between self-compassion and post-traumatic growth, required to make a causal inference, which can be taken up in future research. Moreover, looking at anecdotal data and personal narratives could further help in enriching the data, and help us understand the processes involved in a more experiential light.

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