

Resilience in Adolescence: Exploring the Role of Grit, Humor Styles, Gratitude, and Self-Compassion in Mental Health Outcomes

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Abstract

Mental health problems (MHP) are thought to affect 14% of teenagers worldwide between the ages of 10 and 19, and they are often left untreated (WHO, 2024). The WHO (2024) states that mental health initiatives should focus on enhancing people's ability to control their emotions, providing alternatives to risky behaviors, fostering resilient adversity management, and fostering supportive social networks and settings. This scholarly effort intends to identify variables that promote mental health and alleviate psychological symptoms among adolescents. Specifically, this study examines the associations between gratitude, grit, self-compassion, humor styles, and mental health problems. Data were collected from 184 participants (116 males and 68 females) aged between 13 and 19 years. Participants completed the General Health Questionnaire–30, Grit Scale, Gratitude Questionnaire, Child Humor Styles Questionnaire, and Self-Compassion Scale–Youth. Analysis of the responses was done using correlation and stepwise regression analyses. The findings revealed that gratitude, grit, and self-compassion were all inversely correlated with MHP, whereas an aggressive humor style was positively associated with MHP. Stepwise regression analysis identified self-compassion as the strongest negative predictor of MHP ($R^2 = .19$, $F = 43.50$, $p < .01$, $\beta = -.32$), followed by grit and, subsequently, gratitude. Collectively, these three variables accounted for 29% of the total variance in mental health problems ($R^2 = .29$, $F = 24.15$, $p < .01$, $\beta = -.20$). These findings suggest that gratitude, grit, self-compassion, and humor styles may all contribute to improved mental health among adolescents. Therefore, mental health promotion and prevention programs should consider incorporating these variables when designing interventions.

Keywords: Grit, Gratitude, Self-compassion, Humor styles, Mental health, Adolescents.

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Introduction

Adolescence is a key transitional stage where individuals undergo rapid evolution in their emotional, mental, and social lives. During this time, both the development of crucial coping mechanisms and an increased vulnerability to dangers occur. What matters most for an adolescent's adaptability during these changes is how effectively their environment addresses their changing needs and talents. Ogden and Amlund Hagen (2019) found that while most teenagers thrive throughout adolescence, accomplishing academic goals, making friends, keeping in touch with teachers and family, and avoiding major problems is no easy feat. Some teens, however, struggle

and end up feeling disconnected, unhappy, and maladjusted. Adolescents' reactions to novel situations and difficulties shape their present and future mental health in ways that are unique to them (Garbarino, 1985).

The environment in which a child grows up has a significant impact on their physical and mental health, says the World Health Organization (WHO). An increased chance of having psychiatric illnesses is linked to adverse childhood events, including witnessing or experiencing brutality, seeing or experiencing mental illness in caregivers, being the target of bullying, or growing up in poverty. Teens also have to deal with the stress of trying to figure out who they are and live up to the expectations of their peers. If a young

person's current situation is at odds with their ambitions, the disparity may widen due to media portrayals of gender roles and other prevalent preconceptions. According to Salam et al. (2016), risky behaviors such as smoking, drinking too much alcohol, and using drugs typically start around adolescence and lead to higher health risks and early mortality. Additionally, the World Health Organization (2021) notes that certain youths are more likely to experience mental health issues than others. This includes those who are poor, stigmatized, or do not have access to sufficient healthcare. Those falling into this category may include adolescents who are dealing with the effects of a long-term illness, a neurological ailment, a disability, a young marriage, a pregnant teen, a member of a racial or sexual minority, or an orphan.

According to studies conducted in India, an alarming 23.3% of school-aged children and 6.5% of community-dwelling youngsters suffer from mental health difficulties (Malhotra & Patra, 2014). Surprisingly, the top cause of mortality for teenagers in India is suicide, and the country has the world's highest suicide rate among young people (Patel et al., 2012). In order to promote mental health in teenagers and beyond, it is crucial to lessen their exposure to hardship, help them develop emotionally, and make sure they can get psychiatric help when they need it (WHO, 2021). Consequently, promoting mental wellness during this pivotal life period requires prompt and suitable interventions.

During adolescent phase, individuals begin to develop long-term goals (grit), coping strategies (humor styles), and emotional regulation skills (self-compassion, gratitude)—all of which significantly influence their mental health outcomes. However, while these traits have been studied independently, little research has examined how they interact to shape adolescent mental health.

The terms grit and resilience are commonly used to describe a person's

capacity to persist through challenges in order to achieve their objectives. Grit specifically refers to a long-term drive and steadfast dedication to pursuing goals, even when faced with obstacles, failures, or difficulties (Duckworth et al., 2007). Studies have found that grit is associated with beneficial results, including greater job satisfaction, enhanced performance (Ursua et al., 2020), achievement in academics, strong determination, and reduced burnout (Brateanu et al., 2020; Kannangara et al., 2020). Furthermore, studies such as Kaur (2021) and Choi and Jeong (2022) have demonstrated that mental health is predicted by grit. Research such as O'Neal et al. (2016) and Musumari et al. (2018) demonstrates that a greater degree of grit is linked to a reduction in anxiety, stress, and depression as well as a promotion of mental health in general. It is hypothesized that high levels of grit, when coupled with poor emotional regulation (i.e., lower gratitude and self-compassion), may contribute to mental health problems.

Although gratitude and self-compassion are separate concepts, they are both linked in how they contribute to enhancing overall well-being. Embracing oneself with understanding and kindness is a component of self-compassion, identical to gratitude. Grit and gratitude work together to promote well-being, with individuals high in both showing almost no suicidal thoughts over time (Kleiman et al., 2013). Grit can also be predicted by gratitude (Lijo et al., 2018), and both grit and gratitude are positively associated with life satisfaction and optimism (Oriol et al., 2020). Reduced anxiety and depression in teenagers have been associated with self-compassion (SCP) (Neff & McGehee, 2010), and higher SCP has been associated with greater grit, which, in turn, is linked to less mind-wandering (Cheung & Djekou, 2023).

Adolescence is also a time when peer relationships and social identity play a major role in well-being. Humor serves as a key social tool, however the kind of humor

employed determines how it affects mental wellness. Martin et al. (2003) introduced a framework that categorizes humor into four distinct, independent styles. These classifications depend on how humor is used—either to improve one's own well-being or to strengthen social connections—and whether its effects are constructive or harmful. While the two negative, or potentially destructive, humor types are called Aggressive and Self-defeating, the two good, or adaptive, forms are called Affiliative and Self-enhancing. While affiliative and self-enhancing humor are connected to greater resilience, self-defeating humor is connected to greater levels of depression (Frewen et al., 2008). Nevertheless, the relationship between humor and grit has not been well studied. While previous research has examined grit, humor, gratitude, and self-compassion separately, their combined effects on adolescent mental health remain understudied. Understanding these relationships could inform school-based interventions, counselling, and positive psychology programs designed to foster resilience in adolescents. Therefore, the purpose of the current study is to examine how grit, gratitude, self-compassion, and humor styles contribute to the mental health of adolescents. The current study employs a quantitative approach to analyse the link among variables.

Objectives

1. To examine the link between self-compassion, grit, and mental health problems among adolescents.
2. To explore the associations between gratitude, humor styles, and mental health problems among adolescents.
3. To check whether grit, gratitude, self-compassion, and humor styles predict mental health problems among adolescents.

Hypotheses

1. Grit exhibits an inverse correlation with mental health problems among adolescents.

2. Gratitude is inversely related to mental health problems among adolescents.
3. Self-compassion correlates negatively with mental health problems among adolescents.
4. Self-enhancing and Affiliative humor are negatively related with mental health problems among adolescents.
5. Self-defeating and Aggressive humor styles are expected to be positively related with mental health problems among adolescents.
6. Among adolescents, grit, gratitude, self-compassion, and humor styles are expected to predict mental health problems.

Method

Participants

The study included 184 adolescents, ranging in age from 13 to 19 years, drawn from secondary and senior secondary schools in Kurukshetra district, Haryana. Before completing the self-report questionnaires, participants received detailed instructions, and verbal consent was obtained. Within the sample, 68 females and 116 males were included.

Measures

Grit Scale (12-Items) is developed by Duckworth et al. (2007) to evaluate a person's tenacity and enthusiasm for goals that are lasting. Consistency of Interests and Perseverance of Effort are its two subscales. Each item gets a score on a five-point Likert scale, with the range being "1 = Very much like me" to "5 = Not like me at all." Grit-related traits are more prevalent when scores are higher. The scale demonstrates high internal consistency ($\alpha = .85$), with both the Consistency of Interests and the Perseverance of Effort subscales having Cronbach's alpha values of .84 and .78 respectively.

Gratitude Questionnaire-6 (GQ-6) was developed by McCullough et al. (2002) to evaluate dispositional gratitude. A Likert scale of seven points is used in the instrument, with one representing strongly

disagree and seven representing strongly agree. The instrument consists of six items. Employing confirmatory factor analysis (CFA), McCullough et al. (2002) identified a unidimensional structure exhibiting robust internal consistency ($\alpha = 0.82$).

Child Humor Style Questionnaire (Child HSQ) (Fox et al., 2013) assesses humor styles in children aged 11 and above across four subscales: Aggressive, Self-Defeating, Self-Enhancing, and Affiliative Humor (six statements each). The following procedure (Likert scale) is followed to score the responses (1 being strongly disagree and 4 being strongly agree). Good reliability was shown by the scale ($\alpha = 0.87$ to 0.75) and a clear four-factor structure. For this study, it was translated into Hindi, with an overall reliability coefficient of $\alpha = 0.73$.

The original 26-item Self-Compassion Scale was adapted into a 17-item version, the **Self-Compassion Scale–Youth (SCS–Y)**, developed by Neff et al. (2021) to assess self-compassion among adolescents. It assesses three key dimensions: over-identification vs. mindfulness, isolation vs. common humanity, and self-judgment vs. self-kindness. With a Cronbach's α range of 0.80 to 0.90 , the scale has strong internal consistency.

General Health Questionnaire-30 (GHQ-30), developed by David Goldberg, is a 30-item self-report tool used to screen

for general mental health issues and psychological distress. A 4-point Likert scale is used for rating the items. The scale has high test-retest reliability (0.70 – 0.90), ensuring stable results over time and strong internal reliability (Cronbach's $\alpha = 0.85$ – 0.95).

Data Analyses

The data that was gathered was analysed with IBM SPSS Version 20. To check if the link between variables was linear, Pearson's Product-Moment correlation was used. A stepwise regression analysis was conducted to evaluate the contribution of variables to mental health problems.

Results

Descriptive Statistics

At first, skewness and kurtosis values were used to check if the data were normal. As shown in Table 1, all values resided inside the permissible range, indicating no violations of the assumption of normal distribution. Gender differences across all study variables were examined using Welch's independent-samples t-tests due to the unequal distribution of male and female participants in the sample. The results as shown in table 1 indicated that there were no statistically significant gender differences for any of the variables examined ($p > .05$).

Table 1. Summary of Gender Differences Across Variables Using Welch's t-Tests

Variables	Mean-Female (Male)	Standard deviation-Female (Male)	Welch's t-test	p value
GT	30.90 (30.57)	4.729 (5.264)	.435	.664
TSC	3.01 (3.12)	0.499 (0.421)	-1.472	.144
MHP	34.62 (36.95)	12.552 (12.007)	-1.235	.219
GRIT	36.84 (37.00)	9.819 (7.374)	-0.118	.906

AG	12.69 (13.71)	3.533 (3.393)	-1.910	.058
AF	12.69 (13.71)	3.371 (3.677)	-1.331	.185
SE	16.66 (17.37)	3.414 (3.658)	-1.759	.081
SD	14.01 (14.96)	2.899 (3.302)	0.808	.420

Note. GT- Gratitude; TSC- Total self-compassion; GRIT- Total grit score; AG- Aggressive humor; SD- Self-defeating humor; SE- Self-enhancing humor; AF- Affiliative humor; MHP- Mental health problems.

Correlation Analyses

As no significant gender differences were found across any of the study variables, the data from male and female participants were combined for subsequent correlation and regression analyses. The correlation coefficients between all the research variables are presented in Table 2. It was discovered that while gratitude was negatively related to both mental health problems ($r = -.30$, $p < .01$) and aggressive style of humor ($r = -.20$, $p < .01$), it was positively and significantly linked with self-compassion ($r = .18$, $p < .05$) and grit ($r = .19$, $p < .01$). These findings suggest that adolescents who are more grateful tend to be more self-compassionate, grittier and report fewer mental health problems. Self-compassion showed a positive correlation of .37 with grit, which is significant at the .01 probability level, while self-compassion

shows a significant and inverse association with aggressive humor style and mental health problems, i.e., $-.19$ ($p < .05$) and $-.44$ ($p < .01$), respectively. The above findings suggest that those with greater degrees of self-compassion are generally more persistent and passionate about long-term goals, are less prone to employ aggressive humor, and have fewer mental health problems. Although grit was not significantly associated with any humor styles, it was adversely linked with mental health problems ($r = -.38$, $p < .01$), suggesting that adolescents with higher grit report fewer mental health issues. Finally, aggressive humor style showed a positive correlation with mental health problems ($r = .21$, $p < .01$), indicating that adolescents who frequently use sarcastic, taunting, or demeaning humor tend to experience more mental health difficulties.

Table 2. Correlation Coefficients Between Study Variables

Variables	Mean	Standard Deviations	Skewness	Kurtosis	GT	TSC	GRIT	AG	AF	SE	SD	MHP
GT	30.69	5.06	-0.44	0.46	1	.18*	.19**	-.20**	-0.07	0.00	-0.04	-.30**
TSC	3.08	0.45	0.05	0.35		1	.37**	-.19*	-0.12	-0.03	-0.13	-.44**
GRIT	3.08	0.69	-0.61	1.37			1	-0.09	-0.04	0.06	-0.04	-.38**
AG	13.36	3.21	0.54	0.30				1	.18*	-0.07	.28**	.21**
AF	17.30	3.37	0.01	-0.18					1	.29*	0.01	0.08
SE	14.54	3.43	0.00	-0.15						1	0.07	-0.02
SD	11.86	3.29	0.47	-0.18							1	0.09

MHP	36.09	12.23	0.36	-0.32								1
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** $p < .01$, * $p < .05$.

Note. GT- Gratitude; TSC- Total self-compassion; GRIT- Total grit score; AG- Aggressive humor; SD- Self-defeating humor; SE- Self-enhancing humor; AF- Affiliative humor; MHP- Mental health problems.

Regression Analysis

Table 3 is showing the stepwise regression summary for the dependent variable, mental health problems. Three predictors were identified that significantly contributed to the variance in the dependent variable. Self-compassion emerged as the strongest predictor, entering the regression model in the first step ($R^2 = .19$, $F = 43.50$, $p < .01$, $\beta = -.32$), accounting for 19% of the variance in mental health problems. The negative beta coefficient indicates that self-compassion is inversely related to mental health problems. This suggests that adolescents who adopt a compassionate and understanding stance toward themselves are less likely to experience psychological distress.

Grit entered the model at the second step ($R^2 = .25$, $\Delta R^2 = .06$, $F = 30.16$, $p < .01$, $\beta = -.23$), explaining an additional 6% of the variance. These results imply that adolescents with higher levels of grit—defined by tenacity and a strong desire to achieve long-term objectives—tend to report fewer mental health issues.

Gratitude was added in the final step, contributing an additional 4% to the explained variance ($R^2 = .29$, $\Delta R^2 = .04$, $F = 24.15$, $p < .01$, $\beta = -.20$). This finding suggests that adolescents who frequently experience and express gratitude are also less likely to encounter mental health problems.

Table 3. Summary of Step-wise regression analysis- Dependent Variable: Mental Health Problems

Predictors	R	R ²	R ² Change	F	β	Significance
TSC	0.44	0.19	0.19	43.50	-.32	.01
GRIT	0.50	0.25	0.06	30.16	-.23	.01
GT	0.54	0.29	0.04	24.15	-.20	.01

Note. GT- Gratitude; TSC- Total self-compassion; GRIT- Total grit score

In summary, self-compassion, grit, and gratitude significantly predict mental health outcomes, collectively accounting for 29% of the total variance. These findings highlight the protective role of positive personal traits in adolescent mental health. Cultivating self-compassion, maintaining long-term goals with persistence, and fostering gratitude may help reduce mental health problems during adolescence.

Discussion

This study sought to investigate the connection between self-compassion, grit, gratitude, humor styles, and mental health problems among adolescents. Exposure to hardship, neglect, or violence may heighten adolescents' susceptibility to mental health

issues (WHO, 2024). For teens to grow up healthy and happy, they need to be protected from problems, learn about their emotions and social skills, and have access to the right mental health treatment (WHO, 2024). At this developmental stage, it is essential for adolescents to adopt emotional

and social habits that support psychological well-being. Habits such as healthy sleep patterns, regular physical activity, interpersonal skills, coping mechanisms, problem-solving abilities, and emotional regulation are particularly important (WHO, 2024).

The present study found that grit, gratitude, and self-compassion were inversely related to mental health problems, supporting the first three hypotheses and aligning with previous research. For instance, Pennings et al. (2015) reported that higher levels of grit were associated with reduced hopelessness and suicidal ideation. In a similar vein, Musumari et al. (2018) identified a negative correlation between grit and anxiety and depression, while Datu et al. (2019) demonstrated that grit indirectly reduces depression through a sense of life purpose. The present results provide more evidence that grit may be a buffer for adolescents' mental well-being.

Gratitude was also found to be a significant positive predictor of better mental health, consistent with prior research (Lambert et al., 2010; Ramírez et al., 2014; Wood et al., 2010). Jindal et al. (2022) found that gratitude predicted mental well-being among Indian adolescents. Similarly, Tomczyk et al. (2022) reported that grateful women with depressive symptoms demonstrated more acceptance of their condition, which was associated with reduced levels of depression and anxiousness and higher levels of well-being. Other studies have confirmed gratitude's contribution to mental health outcomes (Bluth et al., 2017; Nguyen & Le, 2021; Voci et al., 2019; Wu et al., 2018). The current study's findings align with this body of research and contribute further evidence in the Indian context.

Self-compassion also promotes mental health, according to earlier studies (Froh et al., 2008; Luo et al., 2019; McCullough et al., 2002; Stockton et al., 2016; Van Dam et al., 2010; Wood et al., 2007). Similarly, the current study found

that self-compassion significantly alleviates mental health symptoms, highlighting its importance among Indian adolescents.

Contrary to expectations, no significant correlations were found between self-enhancing or affiliative humor styles and mental health problems, leading to the rejection of Hypothesis 4. These results contradict earlier studies (Chen & Martin, 2007; Kuiper et al., 2004; Yue et al., 2010), which found protective effects of positive humor styles. However, aggressive humor was positively correlated with mental health problems, supporting Hypothesis 5. Aggressive humor and mental health have also been linked negatively in previous research (Edwards & Martin, 2010; Lu et al., 2023). Jovanovic (2011) discovered a negative correlation between aggressive and self-defeating humor styles and affective well-being. These results imply that reducing the use of maladaptive humor styles should be the goal of mental health professional's therapies.

Hypothesis 6 proposed that grit, humor styles, gratitude, and self-compassion would contribute to mental health outcomes. The results confirmed that grit, gratitude, and self-compassion significantly predicted mental health problems, supporting this hypothesis and reinforcing findings from previous literature.

In summary, setting long-term goals and being passionate about achieving them may help individuals reduce stress and maintain hope for the future. Practicing gratitude and appreciating positive experiences may assist in managing psychological distress. Additionally, engaging in regular physical activity and fostering supportive relationships can further enhance emotional resilience. By cultivating these habits, individuals can create a more balanced and fulfilling life that promotes overall well-being. Finally, showing compassion toward oneself during times of adversity fosters emotional resilience and supports better mental health

outcomes for adolescents. These strategies promote individual well-being and encourage a supportive environment among peers. By cultivating a culture of kindness and understanding, communities can empower adolescents to thrive even in challenging circumstances. This collective effort not only strengthens individual resilience but also builds a sense of belonging, which is crucial during formative years. As adolescents learn to navigate their emotions and challenges, they become more equipped to handle future obstacles, ultimately leading to healthier, more resilient adults.

Limitations and Future Directions

Although it provides useful insights, the current study does have certain limitations to consider. First, data were collected from only one district in Haryana, which restricts the extent to which the findings can be generalized to the entire teenage population in the region. Subsequent research should incorporate a wider range of diverse samples from various districts to improve representativeness. Second, the study's relatively small sample size and uneven gender distribution may limit the robustness of the findings. Future studies ought to strive for larger, more balanced samples to strengthen the validity of the conclusions. Moreover, the convenience sampling method limits the generalizability of the current findings.

Conclusion

Despite these limitations, the current work significantly advances what we know about the interplay between grit, gratitude, humor styles, self-compassion, and mental health problems among Indian adolescents. The findings suggest that cultivating grit, gratitude, and self-compassion may help adolescents manage stress more effectively and maintain psychological well-being. Future mental health programs should consider incorporating interventions that promote these traits, along with adaptive humor and

forgiveness, to build more resilient and emotionally healthy youth populations.

Ethical Considerations

The study was conducted in accordance with ethical guidelines for research involving human participants. Informed consent was obtained from all participants, and parental/guardian consent was secured for participants below 18 years of age. Participation was voluntary, and participants were informed of their right to withdraw at any time without penalty.

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NOTE: The authors have sole responsibility for the originality of the contents of this manuscript.