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Exploring the Relationship between Cyber-Bullying, Emotional Regulation, Aggression, Anxiety and Depression Among Adolescence

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Original Article

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Keywords

Cyberbullying, Victimization, Regulation, Reappraisal, Suppression, Anxiety, Adolescents.

Perpetration, Emotional, Cognitive, Expressive, Aggression, Depression,

Abstract

This study investigates the relationship between adolescent cyberbullying (both perpetration and victimization), emotional regulation strategies (cognitive reappraisal and excessive suppression), and psychological effects such as aggression, anxiety, and depression. Using the Revised Cyberbullying Inventory-II, Emotional Regulation Questionnaire, Aggressive Behaviour Questionnaire-Short Form, and DASS-21, data were gathered from N = 400 adolescents (n = 200 males and n = 200 females) aged 18–24 years. Cyberbullying and aggressiveness ($r = .42, p < .01$), anxiety ($r = .37, p < .01$), and depression ($r = .35, p < .01$) showed strong positive correlations. While excessive suppression was positively linked ($r = .33, p < .01$), suggesting it is deleterious, cognitive reappraisal was adversely associated with cyberbullying ($r = -.30$). These findings underline the negative psychological effects of cyberbullying and too strong suppression as well as the need of cognitive reappraisal as a practical tool to avoid it. Interventions should mostly target suppression and improve cognitive reappraisal.

Introduction

Since the 1970s, bullying as a social concern has been studied extensively; it is common in colleges, organisations, and society at large (Rigby, 2003; Bjärehed et al., 2019). Cyberbullying—the deliberate and regular use of digital communication tools like social media, text messages, and emails—to harass or harm another person—has emerged thanks in part to digital technology (Smokowski & Evans, 2019). This new kind of bullying has special difficulties including anonymity, accessibility, and fast spread that has grown to be a chronic public health issue (Nixon, 2014; Buelga et al., 2020).

Adolescents who are usually connected to mental health problems like anxiety, depression, and anger, are more prone to cyberbullying. Common among victims is emotional dysregulation, in this case victims cannot manage strong negative emotions, therefore raising their risk of mental health issues (Chu et al., 2018; Hu et al., 2021). As a maladaptive coping strategy, victims could potentially participate in negative activities including violence (Kowalski et al., 2014). Both a core cause and a result of cyberbullying, emotional regulation issues may set off a vicious cycle damaging victims as well as offenders (Sheng et al., 2024).

Cyberbullying may cause victims—who could respond with rage or impotence—defensive hostility. Moreover, victims are sometimes inclined to violence; the online environment of bullying accentuates their reactions (Tokunaga, 2010). In both groups, emotional regulation impairments including inadequate cognitive reappraisal skills have been associated to higher aggressiveness; thus, intervention is necessary (Gross, 1998).

One further major psychological impact of cyberbullying is anxiety. Many times, victims of ongoing anxiety and concern retreat socially and suffer emotionally (Juvonen & Gross, 2008). Anxiety symptoms in victims of cyberbullying are hypothesised to be linked to a poor ability for emotional control; maladaptive methods like rumination aggravate the problem (Feinstein et al., 2014). Given comparable emotional and biological processes, chronic anxiety may also cause depression (Cerdeira et al., 2010).

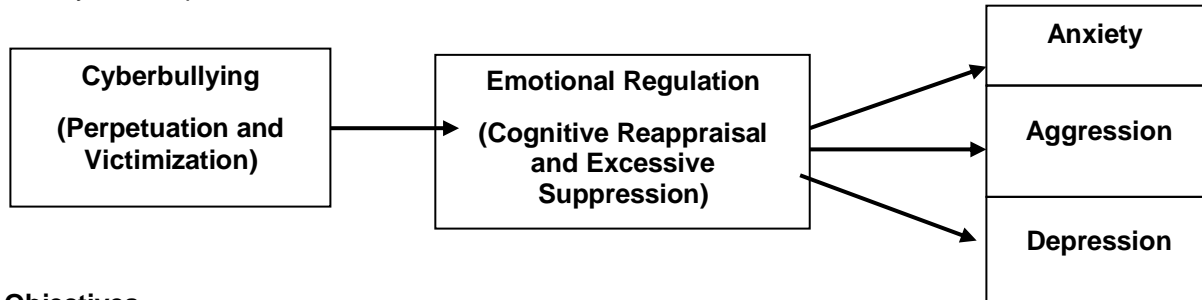
A persistent and incapacitating psychological effect of cyberbullying, depression shows itself as social disengagement and despondency. This is especially true when online harassment becomes so pervasive that victims feel helpless (Gómez-Guadix et al., 2013). Adolescents with poor emotional regulation—those who use suppression or avoidance as a coping strategy—are more likely to experience depression (Jose & Huntsinger, 2005). Adaptive interventions, such as cognitive reappraisal, can help improve psychological well-being for both victims and perpetrators (Gross & John, 2003).

The interconnected nature of cyberbullying, emotional regulation, aggression, anxiety, and depression underscores the need for comprehensive intervention strategies. Promoting adaptive emotional regulation, like cognitive reappraisal, can mitigate the psychological costs of cyberbullying and foster resilience in affected adolescents. As noted in Gross's (1998) Emotion Regulation Theory, people manage their emotions through two main approaches: antecedent- and response-oriented strategies. Antecedent techniques (e.g., cognitive reappraisal) help reframe unpleasant experiences to minimize emotional consequences. Cyberbullying victims who effectively employ these strategies are less likely to exhibit aggression, anxiety, or depression. Conversely, respondent-centered interventions, such as expressive suppression, may alleviate external emotional responses but fail to address deeper emotional issues, potentially causing greater psychological suffering (Gross & John, 2003). By fostering adaptive behaviors like cognitive reappraisal, both cyberbullying victims and bullies can better manage their emotions, ultimately breaking the cycle of negative emotional and behavioral responses. Thus, emotional regulation is crucial for mitigating the harms of cyberbullying and enhancing psychological resilience.

Conceptual Framework

Figure 1

The figure depicts the association between cyberbullying, emotional regulation, aggression, anxiety, and depression in adolescents.



Objectives

1. To find out the relationship between cyberbullying, emotional regulation, aggression, anxiety, and depression among adolescence.

Hypotheses

1. There is a positive relationship between cyberbullying, aggression, anxiety and depression among adolescence.
2. There is a negative relationship between cyberbullying and cognitive reappraisal among adolescence.

Research Design

The research utilized a cross-sectional survey method to examine the impact of cyberbullying on aggression, anxiety, and depression in teenagers in Pakistan. The sample consisted of $N = 400$ participants, evenly divided by family type and sex. Participants were recruited through convenience sampling. A power calculation via G*Power (effect size = 0.5, $\alpha = .05$, power = 0.80) estimated that $N = 178$ was the minimum sample size, and $N = 400$ participants were recruited to ensure valid and robust results.

Inclusion and Exclusion Criteria

Participants aged 18-24 years with cyberbullying experience or engagement in bullying behaviors 2-3 times or more on at least three out of ten items of the scale were included. This threshold was determined to reveal subjects exhibiting repetitive and harmful behaviors. Inclusion criteria required participants to score 7 or below on the DASS-21 scale measuring depression, and 6 or below for anxiety. Participants outside the age range, those with fewer than three cyberbullying behaviors, or higher DASS-21 scores were excluded.

Instruments

The Revised Cyber-Bullying Inventory-II (RCBI-II)

The RCBI-II or the Revised Cyber-bullying Inventory-II (Topcu & Erdur-Baker, 2017) is a ten items tool assessing cyberbullying perpetration and victimization. Respondents indicate their experience over the past six months on a 4-point likert scales (1 = Never, 4 = More than 3 times). Higher scores (10-40) indicates greater cyberbullying involvement. Reliability coefficients for victimization and perpetration were $\alpha = .80$ and $\alpha = .79$, respectively, ensuring consistent results.

Emotional Regulation Questionnaire

The Emotional Regulation Questionnaire (Gross & John, 2003) is a 10-item tool measure two emotional regulation strategies: cognitive reappraisal and excessive suppression. It employs a seven-point Likert scale that ranges from "strongly disagree" (1) to "strongly agree" (7). Reliability was $\alpha = .79$ for cognitive reappraisal and $\alpha = .73$ for expressive suppression, with a strong test-retest reliability validating its effectiveness for emotional regulation questionnaire.

The Aggressive Behavior Questionnaire - Short Form

The Aggressive Behavior Questionnaire – Short Form (ABQ-SF) by Bryant and Smith (2001) is a 12-item scale which measures general aggression – verbal, physical, and relational aggression on a 5-point Likert scale where 1 stands for strongly disagree and 5 for strongly agree. It demonstrates strong internal consistency ($\alpha = .87$), and its test-retest reliability score ($\alpha = .82$) confirming its stability and validity for assessing aggression.

Depression Anxiety Stress Scale – Short Form (DASS-21)

The DASS-21; Depression Anxiety Stress Scale (Lovibond & Lovibond, 1995) is 21-item tool assessing severity of depression, anxiety, and stress in adults older adolescents (17 years +). It uses a 4-points likert scale 0 (did not apply to me at all) to 3 (applied to me very much or most of the time). Higher scores reflect higher levels of symptom endorsement. Reliability of the DASS-21 is excellent ($\alpha = .95$, $\alpha = .96$, and $\alpha = .94$) (Lovibond & Lovibond, 1995).

Procedure

Participants were recruited from various universities in Rawalpindi and Islamabad using convenience sampling. Permission was secured from university principals, who were informed about the study's objectives. Participants were briefed on the research purpose and provided informed consent before completing the questionnaires. Demographic information, including age, gender, family system, and educational background, was collected, alongside data on cyberbullying, emotional regulation, aggression, anxiety, and depression. The inclusion criteria ensured participants were aged 18-24 years, met cyberbullying involvement thresholds, and had low depression and anxiety scores on the DASS-21 scales. Participants were assured of anonymity and informed of their right to withdraw at any time.

Results

The study was designed to investigate the impact of cyberbullying on aggression, anxiety, and depression among adolescents. A sample of $N = 400$ participants, including ($n = 200$ males and $n = 200$ females), was used. The objectives of the study were analyzed using analyses run on various parameters in SPSS-27 to identify their relationships with cyberbullying, emotional regulation, aggression, anxiety, and depression among adolescents.

The study utilized multiple validated tools, including the Revised Cyberbullying Inventory-II (RCBI-II) for Cyberbullying Perpetration (10 items, $\alpha = .81$, $M = 27.80$, $SD = 4.88$) and Victimization (10 items, $\alpha = .78$, $M = 26.88$, $SD = 6.16$), Emotional Regulation Questionnaire (ERQ) for Cognitive Reappraisal (6 items, $\alpha = .88$, $M = 13.94$, $SD = 8.37$) and Excessive Suppression (4 items, $\alpha = .86$, $M = 12.80$, $SD = 6.31$), Aggressive Behavior Questionnaire (12 items, $\alpha = .86$, $M = 24.44$, $SD = 13.29$), and DASS-21 (21 items, $\alpha = .89$, $M = 29.39$, $SD = 9.74$). All scales demonstrated good reliability, confirming their suitability for the study.

However, the correlation analysis revealed significant relationships among the key variables. Cyberbullying Perpetration showed a strong positive correlation with victimization ($r = .82$, $p < .01$) and moderate correlations with aggression ($r = .42$), depression ($r = .35$), and anxiety ($r = .41$). Cognitive reappraisal exhibited a negative correlation with both perpetration ($r = -.45$) and victimization ($r = -.35$),

while excessive suppression was positively associated with aggression ($r = .77$), depression ($r = .67$), and anxiety ($r = .32$). These findings suggest that emotional regulation strategies significantly influence the psychological impact of cyberbullying.

Table 1
Demographic characteristics of participants (N=400)

Categories	<i>f</i>	(%)
Age	400	100%
18-24		
Gender		
Male	200	50%
Female	200	50%
Family System		
Nuclear	200	50%
Joint	200	50%
Educational Level		
BS	256	64%
MS	144	36%

Note: *f* = frequency, % = Percentage

Table 2
Psychometric Properties of the Cyberbullying, Emotional Regulation, Aggression, Anxiety and Depression (N=400)

Variables	<i>k</i>	<i>M</i>	<i>SD</i>	α	Range		Skewness	Kurtosis
					Actual Range	Potential Range		
RCBI-II								
Cyberbullying Perpetuation	10	27.80	4.88	.81	11-37	10-40	-.05	.12
Cyberbullying Victimization	10	26.88	6.16	.78	16-39	10-40	.08	-.05
ER								
Cognitive Reappraisal	6	13.94	8.37	.88	5-17	5-20	.01	.03
Excessive Suppression	4	12.80	6.31	.86	6-17	5-20	-.02	.15
ABQ	12	24.44	13.29	.86	13-35	10-40	.04	.10
DASS								
Depression	21	29.39	9.74	.89	15-36	12-42	.07	.10
Anxiety	7	12.61	4.22	.82	4-22	7-40	.02	.08
	7	12.10	4.13	.76	5-19	6-30	-.01	.02

Note: *K* = no of items, α = Alpha, *M* = Mean, *SD* = Standard deviation, RCBI-II = Cyberbullying Perpetuator and Cyberbullying Victimization, ER = Cognitive Reappraisal and Excessive Suppression, ABQ = Aggressive Behavior Questionnaire, DASS = Depression and Anxiety.

Table 3

Correlation Analysis of Cyberbullying, Emotional Regulation, Aggression, Anxiety and Depression (N=400)

Variales	1	2	3	4	5	6	7	8
1 Cyberbullying Perpetuation	-	.82**	-.45**	.52**	.42**	.37**	.35**	.41**
2 Cyberbullying Victimization		-	-.35**	.47**	.37**	.45**	.42**	.49**
3 Cognitive Reappraisal			-	-.81**	-.65**	-.63**	-.59**	-.56**
4 Excessive Suppression				-	.77**	.71**	.67**	.32**
5 ABQ					-	.90**	.65**	.73**
6 DASS						-	.90**	.93**
7 Depression							-	.86**
8 Anxiety								-

Note: α = Alpha, RCBI-II = Cyberbullying Perpetuator and Cyberbullying Victimization, ER = Cognitive Reappraisal and Excessive Suppression, ABQ = Aggressive Behavior Questionnaire, DASS = Depression and Anxiety, D = Depression, A= Anxiety, ** $p < 0.01$ (2 tailed).

Discussion

The current study was conducted to investigate the relationship between cyberbullying, emotional regulation, aggression, anxiety and depression among late adolescence. The cyberbullying is one of the growing issues in modern times having significant impact upon the internet and social media users. The study sample comprised of $N = 400$ participants with both males ($n = 200$) and females ($n = 200$), and equal representation from family system i.e. nuclear family system ($n = 200$) and joint family system ($n = 200$) within age range 18-24 years old. The study was quantitative in nature and data was collected using survey questionnaires. The variables were assessed using standardized tools and the reliability of those scales was found to be higher than "0.7" which is good and acceptable (Ursachi et al., 2015).

Drawing on the literature and theoretical frameworks mentioned above, hypotheses were devised to identify how cyberbullying and emotional regulation, aggression, anxiety and depression related to late adolescents.

However, the second hypothesis states that there is a contribution to low levels of cognitive reappraisal in adolescents caused by cyberbullying, while the levels of aggression, anxiety, and depression increased. From Table 3, it can be seen as supporting this hypothesis through a significant negative correlation between cyberbullying perpetration and cognitive reappraisal with a value of $r = -.45$, $p < .01$. This shows that adolescents engaged in cyberbullying, either as perpetrators or victims, are less likely to use cognitive reappraisal as an emotional regulation strategy. In addition to this, cognitive reappraisal is negatively correlated to aggression, anxiety, and depression with values of $r = -.65$, $p < .01$; $r = -.59$, $p < .01$; and $r = -.56$, $p < .01$ respectively. This provides the perspective that if one is not able to utilize cognitive reappraisal, then that perhaps leads to worse psycho-emotional and behavioral ramifications resulting from cyberbullying. Literature

supports this theory as it proposes the mitigating role cognitive reappraisal is believed to have along with its greater usefulness for coping with the psychological demand stemming from pressured experiences like cyberbullying.

Many researchers have confirmed this negative correlation between cyberbullying and cognitive reappraisal, and so emotional regulation can buffer the damage of bullying. As Zhou et al (2023) discovered, cognitive reappraisal reduces the emotional distress of cyberbullying. The teenage students who engaged in cognitive reappraisal showed less depressive symptoms, attesting to the protective potential of this strategy to mitigate the emotional impact of cyberbullying (Zhou et al., 2023). Similarly, Fahy et al (2016) made it clear that cognitive reappraisal reduced anxiety and depression among adolescents who experienced cyberbullying. People who valued their bad experiences again had a better emotional experience than those who did not use such techniques (Fahy et al., 2016). The use of cognitive reappraisal in teens reduced depression following cyberbullying episodes, suggesting that the tool is essential to emotional recovery (Calvete & Gámez-Guadix, 2016).

Moreover, Martnez-Monteagudo et al (2020) found that cognitive reappraisal mitigated adolescents' social anxiety in response to cyberbullying. Teens who used reappraisal effectively suffered less from social anxiety (Martnez-Monteagudo et al., 2020). In the research paper, Grigore & Maftai (2020), they observed that adolescence with cognitive reappraisal strategies responded more successfully to the psychological impact of cyberbullying and therefore had fewer depressive symptoms (Grigore & Maftai, 2020). The psychological outcome of hopelessness influenced the association between victimisation from cyberbullying and depression, according to Chu et al (2018), but cognitive reappraisal neutralised this impact by enabling adolescents to reframe the event in a less destructive manner (Chu et al, 2018).

Likewise, Hellfeldt et al. (2019) also found that cognitive appraisal mitigates emotional pain from cyberbullying, with victims who engaged in reappraisal experiencing fewer symptoms of anxiety and depression than others (Hellfeldt et al., 2019). In their study on cyberbullying, Hinduja & Patchin (2013) pointed out that cognitive reappraisal reduced perpetration and victimisation as teenagers began to understand how to regulate emotions (Hinduja & Patchin, 2013). McLoughlin et al. (2022) observed that teens with better cognitive reappraisal abilities had less likelihood of chronic emotional damage from cyberbullying, illustrating the value of this approach to emotional healing (McLoughlin et al., 2022). According to Delgado et al (2019), cognitive reappraisal did not only recover adolescents emotionally but also reduced the risk of engaging in cyberbullying as a victim or a perpetrator (Delgado et al., 2019).

Conclusion

The study explored the relationship between cyberbullying, emotion regulation, aggression, anxiety and depression in late 18- to 24-year-old adolescents. Their results demonstrate a strong positive association between cyberbullying participation and higher rates of aggression, anxiety and depression. Furthermore, adolescents exposed to cyberbullying had fewer processes of cognitive reappraisal, a critical element of emotional regulation. These findings concur with published research describing the negative effects of cyberbullying on mental health.

Limitations and Implications

This study only addressed late adolescents aged 18-24, and therefore the findings may not apply across ages. Furthermore, the use of self-reported questionnaires introduces potential biases, such as social desirability or self-assessment errors. Even the cross-sectional nature of the research limits the potential for causation between variables. In an attempt to address these limitations, future

studies would need to include participants of varied age to generalise the findings. Quantitative surveys coupled with qualitative research can provide a more holistic view of the phenomena being investigated. Longitudinal research would determine the causality and the long-term impact of cyberbullying on emotional regulation and mental health. By creating and implementing intervention programmes focusing on improving emotional regulation, cyberbullying could reduce its negative impact on teenagers.

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