



## Self-Regulation and Cognitive Emotion Regulation among Adolescents

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### ABSTRACT

The present correlational study aimed to examine the relationship between self-regulation and cognitive emotion regulation strategies in adolescents. A sample of 718 adolescents, comprising both boys and girls, from public and private educational institutes in Faisalabad, was conveniently selected for analysis. The participants completed the Adolescents Self-Regulation Inventory (ASRI) and Cognitive Emotion Regulation Questionnaire (CERQ). A significant but negative relationship with one maladaptive cognitive emotion regulation strategy was identified. Additionally, it was found that long-term self-regulation exhibited a significant relationship with several adaptive cognitive emotion regulation strategies, including refocus on planning, positive refocusing, positive reappraisal, and putting into perspective. The Multiple Regression Analysis further revealed that only long-term self-regulation emerged as a significant predictor of other blame (a maladaptive cognitive emotion regulation strategy) and the aforementioned adaptive cognitive emotion regulation techniques. Notably, short-term self-regulation was identified as a significant negative predictor of positive reappraisal. Gender differences in self-regulation and cognitive emotion regulation strategies were observed through independent sample t-tests. This study contributes valuable insights to the existing literature and holds relevance for school psychologists. Importantly, the findings suggest that mindfulness-based interventions have the potential to enhance cognitive emotion regulation and self-regulation in adolescents, offering a promising avenue for helping them develop essential skills to regulate their emotions and behaviors.

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## 1. Introduction

Self-regulation contributes an essential part in interactions, pro-social and moral conduct, wellness, learning, (academic) success, good health, and overall achievement in life (Chu, Li, & Yu, 2020). It is often considered as the fundamental element for sustaining a good level of performance throughout one's life in various fields. The phrase "self-regulation" is a catch-all that encompasses several different structures (Burman et al., 2015). Self-regulation involves the capacity to manage physiological responses, as indicated by heart-rate variability (HRV), along with executive functions (EF). It encompasses both fundamental (neuro-) cognitive aspects of self-regulation and more intricate processes that may be deliberate, such as the regulation of behavior and emotions (McClelland et al., 2018).

Behaviors that are self-generated, planned, and consistently adjusted to achieve personal goals are known as self-regulating behaviors (Zimmerman, 2000). According to Schunk and Usher (2011), self-regulation is a cyclical procedure that involves setting goals, monitoring progress, making adjustments, and evaluating outcomes to further personal objectives. Zimmerman (2000) discusses three cycle phases. Goal-setting, planning, self-efficacy, and

motivation, are all examples of thoughtfulness. It occurs before the actual performance itself. Control over one's self and self-monitoring is the necessary component of this activity. It influences behavior and attentiveness. Repeating forward-thinking, organizing, one's assessment and capacity for adaptation is what is meant by reflection (Schunk & Usher, 2011; Zimmerman, 2000). For instance, self-regulating students set objectives for an educational movement, select learning strategies that might be expected to support them reach those objectives, track their improvement toward the goal, and adjust their study strategy as needed (Ormrod, 2013). Because modifications are made during current attempts based on feedback from past attempts, Zimmerman (2000) views self-regulation as cyclical. As individual, behavioural, and external factors change continually through development and achievement, such modifications are required (Zimmerman, 2000).

Studies conducted by (Artuch-Garde et al., 2017) and de la Fuente-Arias (2017) have identified self-regulation as a robust predictor of resilience. Additionally, self-regulation serves as a protective factor for vulnerable adolescents who may face social exclusion and engage in maladaptive social behaviors, such as inappropriate or ineffective interactions with others (Gardner, Dishion, & Connell, 2008). Individuals who possess the capacity to manage and regulate their emotions and behaviors are better equipped to adhere to their values, effectively cope with stress, handle conflicts, persevere in challenging situations, and recognize positive qualities (Boekaerts, 2011).

Individuals who possess weak abilities to regulate themselves, on the other hand, are susceptible to dealing with stress and frustration, as well as an inadequate level of self-worth and self-possession, which can lead to anxiety and anger. This leads to poor well-being, unhealthy lifestyles (Moffitt et al., 2011). Additionally, reduced SR predicts antisocial behavior and externalizing problematic behavior (Oldehinkel, Hartman, De Winter, Veenstra, & Ormel, 2004). Adolescents vary in their capacity to control themselves, according to studies, this skill is crucial in teenagers' learning, cognitive, and social functioning (Dent & Koenka, 2016). Given the increasing complexity of academic requirements during adolescence, including multiple teachers, assignments, and schedules, it is not surprising that self-regulation and its development play a crucial role in teenagers' school performance. The heightened challenges of academic achievement during young adulthood necessitate the need for effective self-regulation skills.

Adolescents' emotional lives differ from the lives of kids and grown-ups because they engage more strongly in emotional circumstances, encounter unpleasant emotions, feel varied mixed emotions, and spike out more quickly in particular circumstances (Gross, 2014). Recently, there is an increase in recognizing emotional impact both the beneficial and adverse aspects of learning (Linnenbrink, 2007). Research findings have indicated that the ability to regulate emotions through cognitive processes or thoughts is deeply intertwined with human existence. This capability empowers individuals to retain a sense of control over their emotions, even in the face of challenging or stressful situations (Garnefski, Boon, & Kraaij, 2003).

To effectively manage one's emotions, it requires comprehension of the triggers and evaluations of emotions, alongside employing behavioral and cognitive techniques to modify both the experience and expression of those emotions (Bargh & Williams, 2007). This study focuses on the influence of self-regulation on cognitive emotion regulation techniques, which can be classified as adaptive and maladaptive while coping with difficult circumstances (Garnefski et al., 2003).

Cognitive regulation of emotion is a subset of regulation of emotions, which is characterized as all external and internal mechanisms for evaluation, analyzing, and altering emotional responses (Gross, 2001). The phrase "cognitive emotion regulation" is rarely used in educational policy, school reforms, or recommended best teaching strategies. The Cognitive Emotion Regulation Questionnaire developed by Garnefski et al. (2001) is a widely employed tool to measuring cognitive emotion management techniques.

The researchers extensively developed the Cognitive Emotion Regulation Questionnaire (CERQ), devised by Garnefski et al. (2001), with a primary focus on assessing cognitive coping strategies while excluding behavioral tactics. The CERQ evaluates cognitive coping techniques specifically related to emotion regulation. Notably, it encompasses a broader range of cognitive coping methods compared to earlier assessment tools, consisting of nine dimensions that

encompass both adaptive and maladaptive strategies. These dimensions include: (a) Self-blame: Involves feelings of self-blaming for the experiences one has encountered. (b) Acceptance: Encompasses the idea of embracing what has happened and surrendering oneself to it. (c) Concentration on thought or rumination: Refers to the act of thinking about the thoughts and emotions related to the negative event. (d) Positive refocusing: Entails redirecting one's thoughts towards joyous and pleasurable subjects instead of dwelling on the actual occurrence. (e) Refocus on planning: Involves considering strategies to effectively deal with the unfavorable incident. (f) Positive reappraisal: Involves deriving personal growth and benefit by attributing a positive meaning to an event or incident. (g) Putting things in perspective: Involves downplaying the severity of an incident or highlighting its relative significance compared to previous occurrences. (h) Catastrophizing: Denotes thoughts that emphasize the fear and magnification of what one has experienced. (i) Blaming Others: Refers to attributing one's experiences to external factors or other individuals. These dimensions capture the various cognitive coping strategies individuals employ when regulating their emotions. (Garnefski & Kraaij, 2006).

Numerous studies have highlighted the pivotal role of self-regulation as a prominent predictor of cognitive emotion regulation among adolescents. Self-regulation entails the ability to observe and control one's thoughts, emotions, and actions, while cognitive emotion regulation involves the capacity to adapt and adjust emotional responses in different circumstances. These abilities, self-regulation and cognitive emotion regulation, carry significant significance for adolescents as they navigate the complexities of adolescence, including social and academic stressors. Multiple research endeavors have explored the connection between self-regulation and cognitive emotion regulation in the adolescent cohort.

Zeman, Cassano, Perry-Parrish, and Stegall (2006) conducted a study that emphasized the positive association between higher levels of self-regulation and emotion regulation, improved social skills, and a reduction in internalizing and externalizing behavior problems among adolescents. These findings support the idea that self-regulation plays a crucial role in promoting positive social and emotional functioning during adolescence. Additionally, a study by Benoit and Gabola (2021) revealed that an intervention focused on enhancing self-regulation skills in adolescents with elevated anxiety levels resulted in improvements in cognitive emotion regulation strategies, such as cognitive reappraisal and problem-solving. This suggests that interventions targeting self-regulation can positively influence cognitive emotion regulation techniques in adolescents, leading to enhanced emotional well-being.

Research findings have also indicated that individuals who possess higher levels of self-regulation skills exhibit greater proficiency in regulating their emotions. (Webb, Miles, & Sheeran, 2012) concluded that individuals with elevated self-regulation capabilities are more likely to employ effective cognitive reappraisal techniques. Similarly, a study conducted by Berking et al. (2012) demonstrated that individuals who underwent self-regulation training exhibited enhanced abilities in managing their emotions through the utilization of reappraisal, distraction, and acceptance-based strategies. Furthermore, Brausch and Muehlenkamp (2018) discovered that individuals with stronger self-regulation skills tended to employ cognitive reappraisal more frequently while relying less on detrimental coping mechanisms such as avoidance or self-harm. This study also revealed that individuals with lower levels of self-regulation displayed a higher tendency towards rumination, a maladaptive cognitive emotion regulation strategy.

Taken together, the above research suggest that self-regulation is an important predictor of cognitive emotion regulation in adolescents. Adolescents with enhanced self-regulation skills are more inclined to employ effective cognitive emotion regulation strategies, enabling them to manage their emotions in a healthy and adaptive manner.

In spite of the increasing attention given to the emotional development of adolescents, there remains a lack of research specifically examining the relationship between self-regulation and cognitive emotion regulation in this age group. The current study seeks to bridge this gap in the existing literature and enhance our understanding of the factors influencing emotional well-being in adolescents. The primary objective of this study is to explore the association between self-regulation and cognitive emotion regulation among adolescents, with a particular emphasis on elucidating how these factors interact and influence overall emotional well-being during this crucial period of development.

## 2. Methodology

### 2.1. Sample

A convenient sample of 718 adolescents both boys ( $n = 359$ ) and girls ( $n = 359$ ) with an age ranged between 14-17 years ( $M_{age} = 15.1$ ;  $SD_{age} = 4.43$ ) were recruited from different public and private sector educational institutes of Faisalabad. A correlational research design was followed. Participants with any physical and psychological illness were not included in current research.

### 2.2. Measures

The following measures were used in current study.

#### 2.2.1. Adolescents Self-Regulation Inventory (ASRI)

Moilanen (2007) constructed the Adolescent Self-Regulatory Inventory (ASRI). It is a 36-item scale that assesses teenagers' ability to engage, observe, sustain, suppress, and change their emotions, opinions, interest, and behaviour. The Inventory features a multifaceted framework designed particularly to examine teenage self-management in both the short and long term. The short-term self-regulatory component is concerned with whim attention to detail, and emotional management concerning immediate goals. Long-term self-regulation entails assessing teenage attempts to manage impulse, interest, and emotional control towards targets for the future (such as job aspirations, saving money, and so on). Participants use a Likert-type answer scale to score how accurate each statement is for them, ranging from 1 (*not completely true for me*) to 5 (*very true for me*). In current study translated Urdu version of ASRI (Khawar, Attia, Zulfqar, & Hussain, 2023) was used with good internal consistency ( $\alpha = .82$ ).

#### 2.2.2. Cognitive Emotion Regulation Questionnaire (CERQ)

The Cognitive Emotion Regulation Questionnaire (CERQ) was developed by Garnefski, Kraaij, and Spinhoven (2001) as a comprehensive self-reported assessment tool. It comprises 36 items, measuring nine distinct cognitive emotion regulation techniques: Self-blame, Catastrophizing, Other-blame, Rumination, Acceptance, Positive Refocusing, Refocus on Planning, Positive Reappraisal, and Putting into Perspective. The first four techniques are categorized as maladaptive, while the remaining five are considered adaptive strategies. Each subscale of the CERQ consists of four items, and respondents rate their agreement on a five-point Likert-type scale. In the present research, the translated Urdu version of the CERQ (Hensley et al., 2016) was utilized, demonstrating good internal consistency with a Cronbach's alpha coefficient of .81.

#### 2.2.3. Demographic Information Sheet

A self-structured demographic information sheet was used to gather important demographic information about the participants. It included age, gender, family size, monthly income, residential area, etc.

## 3. Result

Table 1 describes the demographic information of the participants including age, family size, monthly income, gender, education level, family system, etc. It shows that their equal number of boys (50%) and girls (50%) with a mean age of 15.14 years present in the current study. Most of the participants live in urban areas (71.7) with a nuclear family system (63.37%). It also shows the average monthly income of the participants (41580.68).

**Table 1: Demographic Information of the Participants (N = 718)**

Variables	Groups	M(SD)	f(%)
Age		15.14(4.43)	
Family size		7.58(3.35)	
Earning members		2(1.35)	
Monthly income		41580.68(121140.67)	
Gender	Boys		359(50)
	Girls		359(50)
	Total		718(100)
Residential area	Urban		515 (71.7)
	Rural		173 (24.1)
	Missing		30 (4.2)
	Total		718 (100)
House status	Own		541 (75.3)

	Rented	117 (16.3)
	Missing	60 (8.4)
	Total	718 (100)
Education	9 <sup>th</sup>	168 (23.39)
	10 <sup>th</sup>	173 (24.10)
	11 <sup>th</sup>	185 (25.77)
	12 <sup>th</sup>	192 (26.74)
	Total	718 (100)
Family system	Nuclear	455 (63.37)
	Joint	263 (36.63)
	Total	718 (100)

Table 2 shows the results of Pearson product-moment correlation among long-term and short-term self-regulation and adaptive and maladaptive cognitive emotion regulation strategies. Findings specified that long-term self-regulation skills significantly negatively associated with one maladaptive cognitive emotion regulation strategy, other-blame ( $r = -.13, p < .01$ ). Results also revealed that long-term self-regulation had a significant positive but weak association with following adaptive cognitive emotion regulation strategies; refocus on planning ( $r = .13, p < .01$ ), positive refocusing ( $r = .09, p < .05$ ), positive reappraisal ( $r = .14, p < .001$ ) and putting into perspective ( $r = .11, p < .01$ ).

**Table 2: Inter-correlation among Self-regulation (Long-term & short-term) and Cognitive Emotion Regulation Strategies (N = 718)**

Variables	1	2	3	4	5	6	7	8	9	10	11
1. Long term Self-regulation	1										
2. Short term Self-regulation	.52***	1									
3. Self-blame	.04	.07	1								
4. Rumination	.04	.05	.49***	1							
5. Catastrophizing	-.003	.03	.41***	.32***	1						
6. Other-blame	-.13**	-.02	.24***	.22***	.21***	1					
7. Acceptance	-.03	-.02	.35***	.34***	.22***	.16***	1				
8. Positive Refocusing	.09*	.06	.13**	.13**	.01	.04	.19***	1			
9. Refocus on Planning	.13**	.02	.23***	.30***	-.01	-.06	.29***	.42***	1		
10. Positive Reappraisal	.14***	-.02	.14***	.14***	.03	-.12**	.27***	.53***	.58***	1	
11. Putting into Perspective	.11**	.07	.26***	.31***	.32***	.02	.31***	.36***	.38***	.45***	1
M	44.06	40.25	10.52	11.03	10.27	9.72	10.99	12.44	13.01	13.52	12.23
(SD)	(9.49)	(8.01)	(3.34)	(3.45)	(3.61)	(3.58)	(3.28)	(3.43)	(3.51)	(3.49)	(3.27)

Note: \* $p < .05$ , \*\* $p < .01$ , \*\*\* $p < .001$ .

**Table 3: Summary of Regression Analyses for Self-Regulation (Long-term & Short-term Self-regulation) as Predictor of Cognitive Emotion Regulation Strategies (N = 718)**

Predictors	DV's	B	SE	$\beta$	t	p	R <sup>2</sup>	$\Delta R^2$
Long-term SR	Other-blame	-.05	.014	-.13	-3.45	.001	.016	.015
Long-term SR	Positive refocusing	.03	.013	.09	2.48	.013	.009	.007
Long-term SR	Refocus on planning	.05	.014	.13	3.44	.001	.016	.015
Long-term SR	Positive reappraisal	.07	.016	.20	4.74	.000	.031	.028
Short-term SR	Positive reappraisal	-.05	.019	-.12	-2.87	.004		
Long-term SR	Putting into perspective	.04	.013	.11	2.93	.004	.012	.010

Note: SR (Self-Regulation)

- Other-blame:  $F(df) = 11.93 (1, 717), p = .001$ .
- Positive refocusing:  $F(df) = 6.15 (1, 717), p = .013$ .
- Refocus on planning:  $F(df) = 11.34 (1, 717), p = .000$ .
- Positive reappraisal:  $F(df) = 14.29 (1, 717), p = .000$
- Putting into perspective:  $F(df) = 8.58, p = .004$ .

Table 3 showed the summary of regression analysis through the stepwise method. Findings revealed that only long-term self-regulation proved to be a significant predictor of one

maladaptive strategy other blame ( $\beta = -.13, p < .01$ ) by accounting for 15% of the variance, while long-term self-regulation also proved to be a significant predictor of following adaptive cognitive emotion regulation techniques; positive refocusing ( $\beta = .09, p < .05$ ), refocus on planning ( $\beta = .13, p < .01$ ), positive reappraisal ( $\beta = .20, p < .001$ ) and putting into perspective ( $\beta = .11, p < .01$ ) by accounting 7%, 15%, 28% and 10% of the variance respectively. Short-term self-regulation emerged as a significant negative predictor of positive reappraisal ( $\beta = -.12, p < .01$ ) by accounting for 28% of the variance.

**Table 4: Gender Differences across Self-Regulation (Long term & Short term) and Cognitive Emotion Regulation Strategies among Adolescents (N = 718)**

Variables	Gender		t	p	SE	95% C.I		Cohen's d
	Boys (n = 359) M(SD)	Girls (n = 359) M(SD)				LL	UL	
Long term Self-regulation	43.24 (9.15)	44.88 (9.76)	-2.31	.021	-1.63	-3.02	-.25	0.173
Short term Self-regulation	40.05 (7.64)	40.45 (8.38)	-.68	.497	-.41	-1.58	.76	0.042
Self-blame	10.57 (3.00)	10.47 (3.66)	.40	.688	.10	-.39	.59	0.029
Rumination	10.68 (3.22)	11.37 (3.65)	-2.69	.007	-.69	-1.19	-.18	0.200
Catastrophizing	9.99 (3.16)	10.56 (3.99)	-2.11	.035	-.57	-1.10	-.04	0.158
Other blame	10.27 (3.44)	9.17 (3.64)	4.15	.000	.24	.58	1.62	0.310
Acceptance	10.64 (3.02)	11.35 (3.48)	-2.92	.004	-.71	-1.19	-.23	0.218
Positive refocusing	11.99 (3.08)	12.89 (3.70)	-3.51	.000	-.89	-1.39	-.39	0.264
Refocus on planning	12.53 (3.39)	13.48 (3.55)	-3.65	.000	-.95	-1.45	-.44	0.273
Positive reappraisal	12.98 (3.30)	14.07 (3.59)	-4.23	.000	-1.09	-1.59	-.58	0.316
Putting into perspective	11.56 (2.87)	12.91 (3.49)	-5.20	.000	-1.34	-1.81	-.87	0.422

Significant gender differences were identified after applying the independent sample t-test across long-term self-regulation ( $t = -2.31, p < .05$ ), rumination ( $t = -2.69, p < .01$ ), catastrophizing ( $t = -2.11, p < .05$ ), other blame ( $t = 4.15, p < .001$ ), acceptance ( $t = -2.92, p < .01$ ), positive refocusing ( $t = -3.51, p < .001$ ), refocus on planning ( $t = -3.65, p < .001$ ), positive reappraisal ( $t = -4.23, p < .001$ ) and putting into perspective ( $t = -5.20, p < .001$ ). Results revealed that girls use maladaptive cognitive emotion regulation coping skills such as rumination, and catastrophizing, as compared to boys; while boys used other blame more compared to girls as maladaptive coping. Among adaptive cognitive emotion regulation strategies other than acceptance all are used more by girls as compared to boys. Girls are also high in long-term self-regulation than boys.

#### 4. Discussion

Self-regulation is a cognitive ability that occurs gradually from childhood and continues throughout late adolescence. Teenagers progress in their capability to control their emotions during this time period with fast and major changes in biological, social, cognitive, and emotional domains (Blakemore, 2008). Governing one's emotions necessitates an understanding of how feelings are triggered and judged, as well as the use of behavioral and cognitive methods to alter the feeling and/or its expression (Bargh & Williams, 2007). The primary objective of this research is to examine how self-regulation and cognitive emotion regulation are related in adolescents, intending to gain insight into how these factors impact emotional health and well-being during this alarming stage of growth. Checking the gender differences across self-regulation and cognitive emotion regulation among adolescents is also an important objective of the present research.

Results revealed that long-term self-regulation skills proved to be a significant negative predictor of other blame (maladaptive cognitive emotion regulation strategy). It means that adolescents who put great effort to control their impulses, giving attention, and regulate their emotions towards any stressful situation over a longer period, actually blame less on external things, resources, and conditions about any inconvenience, and are better able to regulate their selves. We can say that long-term self-regulation skills are negatively associated with blaming others for any stressful event. Findings also suggested that adolescents who give attention, had great control over their impulses, and regulate their emotions as well are more likely to indulge in using adaptive cognitive emotion regulation techniques such as putting into perspective, positive reappraisal, positive refocusing and refocus on planning. It reveals that adolescents who are better able to regulate their selves over a long time or use long-term self-regulation skills in stressful situations, usually involve in accrediting an optimistic gist to that situation in terms of personal development, thinking about those situations that bring satisfaction instead of the real stressful situation, and plan about those steps who will bring effective changes to deal with that

specific event. Moreover, they also involve in those thinking patterns that play a vital part in alleviating the weight of stressful situations. While on the other hand adolescents who use short-term self-regulation skills had a negative association with adaptive coping and positively linked with maladaptive coping strategies (rumination, catastrophizing, self-blame). We can say they blame their selves for stressful situations, constantly think about the negative feeling related to that situation, fixate on the worst possible outcomes and treat it as likely, even when the event has not happened actually. Previous research has also indicated that among adolescents, the most frequently employed adaptive cognitive emotion regulation strategies include refocus on planning, which entails contemplating the necessary steps to address a stressor, and positive refocusing, which involves redirecting attention from stressors towards positive thoughts. These findings were reported by various studies such as (Andrés, Richaud de Minzi, Castañeiras, Canet-Juric, & Rodríguez-Carvajal, 2016) and Garnefski and Kraaij (2014) are aligned with the definition of these strategies.

The t-test results present a significant gender differences across both types of self-regulation strategies (long-term & short-term) and adaptive and maladaptive cognitive emotion regulation strategies. Findings specify that significant meaningful gender differences are observed in long-term self-regulation. Findings show that girls are more able to regulate their selves put effortful control in stressful situations and are more attentive to their emotions during any stressful situation over a long period as compared to boys. That is why we can say that girls with developmental periods become mature, thoughtful, and less impulsive as compared to boys. Literature also supports that girls reported more self-regulatory skills as compared to boys (Matthews, Ponitz, & Morrison, 2009). Consistent with this perspective, several meta-analytic studies Cross, Copping, and Campbell (2011) have found that girls exhibit greater motivation and ability to regulate their behaviour than boys.

Findings also revealed significant gender differences across adaptive cognitive emotion regulation techniques. Girls use more adaptive coping strategies to fight against stressful situations as compared to boys. It indicates that girls accept the situation early and take effective measures to deal with it. Girls also appraise stressful situations positively and plan to handle them impressively. Girls are also better able to assess the true value, importance, or significance of something although that would be stressful. They think stressful situations also had some positive outcomes and they focus on them more as compared to boys. In a study conducted by Thompson et al. (2010), it was observed that adolescent girls exhibited a higher propensity for employing positive reappraisal as a coping strategy in comparison to boys. Positive reappraisal involves the cognitive process of reevaluating a stressful situation from a more positive perspective. Another research also supports this finding is by Matud and García (2019), who examined the coping strategies used by Spanish adolescents in response to stress. The findings of their study revealed that female adolescents exhibited a higher likelihood of employing positive reappraisal as a coping strategy in comparison to their male counterparts. Likewise, Compas et al. (2017) also found adolescent girls were more prone to utilize cognitive coping strategies in contrast to their counterparts. These results suggest that girls may display a greater inclination towards utilizing adaptive coping strategies when confronted with stressors.

Apart from it is also observed in our findings that girls not only use adaptive coping strategies in any stressful situation but sometimes they ruminate and catastrophize the situation more as compared to boys. It means that girls often involve in magnifying and exaggerating the negative aspect of the situation and imagine the worst possible outcomes of the situation. Girls are always encouraged to express their emotions and this thing is acceptable that is why they catastrophize situations more as compared to boys. Literature also revealed that girls and boys are different in their cognitive styles. Researches show that girls tend to ruminate about the situation more than boys, which leads them to dwell more on negative thinking and worries (Sanchis-Sanchis, Grau, Moliner, & Morales-Murillo, 2020). A study conducted on Pakistani adolescents showed that girls use more maladaptive cognitive coping such as rumination and catastrophizing as compared to boys (Mumtaz, Maqsood, & Rehman, 2017). Another study conducted on adolescents in Turkey is in line with our findings that adolescents female use more maladaptive coping (rumination) as compared to males.

## 5. Conclusion

The study on the relationship between self-regulation and cognitive emotion regulation among adolescents suggests that there is a significant correlation between the two constructs. Adolescents who possess higher levels of self-regulation skills tend to exhibit more effective cognitive emotion regulation strategies. This finding supports the notion that self-regulation plays an important part in the way adolescents manage their emotions and cope with stressors. It is recommended that interventions aimed at improving adolescents' emotional well-being should include strategies to enhance their self-regulation skills. Further studies are required to explore the mechanisms underlying the relationship between self-regulation and cognitive emotion regulation, as well as to determine the effectiveness of interventions targeting these skills in adolescents.

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