

Psychological Well-being and its Relationship with Meta-Cognitive Skills among Adolescents

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ABSTRACT

This study examines the relationship between psychological well-being and metacognitive skills among Indian adolescents enrolled in government secondary schools in the Nainital district of Uttarakhand. Drawing upon Ryff's multidimensional model of psychological well-being and established frameworks of metacognitive regulation, the study employed a descriptive-correlational design. A sample of 617 Class XI students from Government Intermediate Colleges was selected through multistage random sampling. Data were collected using standardized instruments. Descriptive statistics indicated moderate to high levels of both psychological well-being and metacognitive functioning. Pearson's correlation analysis revealed a significant positive relationship ($r = .629, p < .01$) between the two constructs. Interpersonal relations and planning emerged as the most strongly associated subcomponents. Gender comparisons showed females scored higher on satisfaction, implementation, and monitoring. The findings highlight the intertwined nature of emotional well-being and cognitive self-regulation, with implications for adolescent mental health support and educational interventions in Indian secondary schools.

Keywords: *Psychological Well-Being, Meta-Cognitive Skills, Adolescents, Secondary Education, India*

Adolescence is a pivotal developmental stage characterized by significant cognitive, emotional, and social transitions. Successfully navigating this phase demands not only academic competence but also psychological resilience and self-regulatory abilities. Two key constructs that underpin adolescent success—both within and beyond the classroom—are psychological well-being and meta-cognitive skills. Psychological well-being, as conceptualized by Carol Ryff (1989), extends beyond the absence of mental illness to include positive functioning across dimensions such as self-acceptance, autonomy, environmental mastery, and interpersonal relationships. Simultaneously, meta-cognitive skills involve dimensions i.e., planning, monitoring, and evaluation of one's cognitive processes, play a pivotal role in shaping how adolescents approach learning, solve problems, and make decisions.

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Psychological well-being, as theorized by Carol Ryff (1989), is a multidimensional construct including six domains: self-acceptance, autonomy, environmental mastery, positive relations, purpose in life, and personal growth. Unlike hedonic well-being, which emphasizes pleasure and satisfaction, Ryff's model is eudaimonic in its nature—anchored in personal meaning, functional competence, and growth. Studies have consistently shown that adolescents with higher levels of psychological well-being are more resilient, perform better academically, and demonstrate healthier social relationships (Keyes, 2006; Diener et al., 2010).

On the other hand, meta-cognitive skills, introduced by John Flavell (1979) and further studied by Schraw and Dennison (1994), refer to an individual's awareness and control over their own cognitive processes. These skills comprised of planning, monitoring, and evaluation—have been found to significantly influence learning outcomes, particularly in complex and self-directed educational environments (Brown, 1987; Veenman et al., 2006). Meta-cognition not only enhances academic achievement but also fosters self-efficacy and critical thinking, traits increasingly demanded by 21st-century education.

In the context of secondary education, particularly in India, these constructs assume heightened significance. Secondary schooling represents a transitional phase in the formal education system, where students—typically aged between 14 and 18—face increasing academic pressures, identity formation challenges, and decisions related to future educational or career paths. Their ability to self-regulate learning and maintain emotional balance directly impacts their academic performance, personal development, and long-term well-being. However, the interplay between psychological well-being and meta-cognitive skills among Indian adolescents remains underexplored, especially in non-metropolitan and socio-culturally diverse regions.

This study investigates this relationship within the unique context of Nainital district in Uttarakhand, a hilly region in northern India with a diverse population spread across rural and urban areas. The students surveyed are enrolled in Government Intermediate Colleges affiliated with the Uttarakhand Board of School Education, which cater to a broad spectrum of socio-economic backgrounds. These institutions represent a vital link in the state's public education system and are often the primary source of secondary education for adolescents in remote or underserved communities.

By employing a quantitative design with a robust sample of senior secondary students (Class XI), this study aims to examine how psychological well-being correlates with meta-cognitive skills in an Indian educational context. It further explores whether specific components of well-being—such as interpersonal relations or mental health—are significantly associated with planning, implementation, or monitoring abilities. The study contributes empirical insights into adolescent development and offers practical implications for educators, policymakers, and mental health professionals striving to support holistic learning environments.

Hypotheses

- **H1:** There is a significant positive correlation between psychological well-being and meta-cognitive skills among Indian adolescent students
- **H1a:** Each dimension of psychological well-being (Satisfaction, Efficiency, Sociability, Mental Health, Interpersonal Relations) is positively correlated with overall meta-cognitive skills.

- **H1b:** Each component of meta-cognitive skills (Planning, Implementation, Monitoring, Evaluation) is positively correlated with overall psychological well-being.

METHODOLOGY

Research Design

This study employed a descriptive-correlational research design to investigate the relationship between psychological well-being and meta-cognitive skills among adolescent students. The approach was appropriate given the objective of identifying patterns of association between two key psychological constructs within a naturalistic educational setting, without manipulating any variables.

Population and Sampling

The target population included senior secondary students (Class XI) studying in Government Intermediate Colleges (GICs) in Nainital district, located in the state of Uttarakhand, India. Out of a total adolescent population of 4,887 students enrolled in Class XI across eight blocks, two blocks—Haldwani and Ramnagar—were selected using a multistage random sampling technique. From these blocks, 13 Government Intermediate Colleges were selected through proportional random sampling. A total of 826 students initially participated; however, after applying exclusion criteria (e.g., students experiencing recent bereavement or academic failure), the final sample comprised 617 students (325 males and 292 females).

Instruments

1. **Psychological Well-Being Scale:** Developed and standardized by Dr. Devendra Singh Sisodia and Pooja Choudhary (2012), this scale measures psychological well-being across five dimensions, i.e., life satisfaction, efficiency, sociability, mental health, and interpersonal relations. It contains 50 items, each rated on a 5-point Likert scale (from “Strongly Disagree” to “Strongly Agree”). Higher scores indicate greater psychological well-being. The scale has demonstrated acceptable psychometric properties in the Indian context.
2. **Meta-Cognitive Skills Scale:** A self-report instrument designed to assess students’ ability to regulate their cognitive processes. The scale includes sub-components such as: planning, implementation, monitoring and evaluation. Each component reflects essential metacognitive activities that facilitate self-directed learning. Responses are rated on a Likert-type scale, and total scores reflect the overall strength of meta-cognitive regulation.

Procedure

Permission was obtained from school authorities, and informed consent was secured from all student participants. The data were collected in person during school hours under standardized conditions. Instructions were provided, and participants were assured of anonymity and confidentiality. Each session lasted approximately 30–40 minutes.

Data Analysis

Data were analyzed using SPSS (Statistical Package for the Social Sciences). Descriptive statistics (mean, standard deviation) were computed to summarize overall trends. Pearson’s correlation coefficient was used to examine the relationship between psychological well-being and meta-cognitive skills. Additionally, independent samples t-tests was employed to test differences across gender, although this paper primarily focuses on the correlational aspect.

RESULTS

Descriptive statistics were computed to understand the overall distribution of psychological well-being and meta-cognitive skills among the adolescent participants ($N = 617$). The findings are summarized in Tables 1 and 2.

Table No. 1 Descriptive Statistics of Psychological Well-being

Variable	<i>N</i>	<i>M</i>	<i>SD</i>
Psychological Wellbeing	617	189.27	21.894
a. Satisfaction	617	37.55	6.174
b. Efficiency	617	38.50	5.301
c. Sociability	617	36.48	5.527
d. Mental Health	617	36.89	5.592
e. Interpersonal Relations	617	39.85	5.750

The mean psychological well-being score was 189.27 ($SD = 21.89$), suggesting a moderate to high level of well-being. Interpersonal Relations recorded the highest mean ($M = 39.85$), while Sociability and Mental Health had slightly lower means ($M = 36.48$ and 36.89 , respectively).

Table 2 Descriptive Statistics of Meta-Cognitive Skills

Variable	<i>N</i>	<i>M</i>	<i>SD</i>
Meta Cognitive Skill	617	168.41	18.200
a. Planning Skill	617	48.52	5.823
b. Implementation Skill	617	36.46	4.460
c. Monitoring Skill	617	44.55	5.877
d. Evaluation Skill	617	38.88	4.969

The mean meta-cognitive skill score was 168.41 ($SD = 18.20$), indicating a relatively high level of cognitive self-regulation. Planning scored the highest ($M = 48.52$), while Implementation had the lowest mean ($M = 36.46$), pointing to challenges in translating cognitive plans into action.

To assess the strength and direction of the relationship between psychological well-being and meta-cognitive skills, Pearson’s correlation coefficient was calculated. The results presented in Tables 3 and 4 reveal a statistically significant positive relationship between psychological well-being and various components of meta-cognitive skills among the sampled adolescents ($N = 617$).

Table 3 Pearson’s Correlation Coefficients Between Psychological Well-being (PWB) and Meta-Cognitive Skill Dimensions Among Adolescents ($N = 617$)

	PWB	Satisfactio n	Efficienc y	Sociabilit y	Mental Health	Relations	MC S
PWB	—						
Satisfactio n	0.754** *	—					
Efficiency	0.757** *	0.471** *	—				
Sociabilit y	0.809** *	0.530** *	0.503** *	—			

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	PWB	Satisfactio n	Efficienc y	Sociabilit y	Mental Health	Relations	MC S
Mental Health	0.759** *	0.423** *	0.494** *	0.517** *	—		
Relations	0.784** *	0.441** *	0.491** *	0.585** *	0.512** *	—	
MCS	0.629** *	0.361** *	0.588** *	0.442** *	0.487** *	0.564** *	—

Note. PWB = Psychological Well-being; MCS Meta-cognitive skills
* p < .05, ** p < .01, *** p < .001

Table 3 shows Pearson’s correlation coefficients between psychological well-being (PWB), its subdimensions (Satisfaction, Efficiency, Sociability, Mental Health, and Interpersonal Relations), and meta-cognitive skill. Psychological well-being is positively and significantly correlated with meta-cognitive skill ($r = 0.629$, $p < .001$), indicating that higher psychological well-being is associated with stronger meta-cognitive abilities. Among the subdimensions of PWB, the strongest correlations were observed between PWB and Sociability ($r = 0.809$), followed closely by Efficiency ($r = 0.757$) and Mental Health ($r = 0.759$). Furthermore, meta-cognitive skill shows the highest correlation with Efficiency ($r = 0.588$) and Interpersonal Relations ($r = 0.564$), suggesting that adolescents who feel competent and maintain healthy social relations tend to possess more developed meta-cognitive skills.

Table 4 Pearson’s Correlation Coefficients Between Psychological Well-being and Subcomponents of Meta-Cognitive Skills Among Adolescents (N = 617)

	Meta- cognitive skill	Planning	Implementatio n	Monitorin g	Evaluatio n	PW B
Meta-cognitive skill	—					
Planning Skill	0.877** *	—				
Implementatio n	0.860** *	0.672** *	—			
Monitoring	0.873** *	0.670** *	0.695***	—		
Evaluation	0.832** *	0.644** *	0.642***	0.606***	—	
PWB	0.629** *	0.540** *	0.544***	0.563***	0.515** *	—

Note. PWB = Psychological Well-being; MCS Meta-cognitive skills
* p < .05, ** p < .01, *** p < .001

Table 4 further explores the relationship between overall meta-cognitive skill, its four subcomponents (Planning, Implementation, Monitoring, and Evaluation), and psychological well-being. All intercorrelations among the subcomponents are strong and highly significant ($p < .001$), indicating a tightly knit structure of meta-cognitive functioning. The highest

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interrelation is between overall meta-cognitive skill and Monitoring ($r = 0.873$), closely followed by Planning ($r = 0.877$) and Implementation ($r = 0.860$), suggesting that these facets are particularly central to meta-cognitive competence.

Notably, psychological well-being is significantly correlated with all four subcomponents of meta-cognitive skills: Monitoring ($r = 0.563$), Implementation ($r = 0.544$), Planning ($r = 0.540$), and Evaluation ($r = 0.515$), demonstrating that adolescents with greater well-being also tend to exhibit higher levels of strategic thinking, self-regulation, and reflective evaluation.

Table 5 Comparisons of Male and Female Participants on Psychological Well-Being and Meta Cognitive Skill

	Male ($n = 325$)		Female ($n = 292$)		<i>p</i>	<i>t</i> (615)
	<i>M</i>	<i>SD</i>	<i>M</i>	<i>SD</i>		
Psychological Wellbeing	188.62	21.672	189.99	22.152	.257	-.776
Satisfaction	36.87	6.058	38.32	6.224	.744	-2.921
Efficiency	38.44	4.980	38.57	5.645	.061	-.298
Sociability	36.62	5.664	36.31	5.375	.530	.704
Mental Health	37.27	5.502	36.46	5.669	.962	1.808
Interpersonal Relations	39.42	5.576	40.34	5.910	.489	-1.991
Meta Cognitive Skill	166.07	18.093	171.01	17.995	.630	-3.399
Planning Skill	48.15	5.743	48.93	5.894	.420	-1.672
Implementation Skill	35.74	4.604	37.26	4.158	.054	-4.291
Monitoring Skill	43.60	5.993	45.61	5.564	.613	-4.315
Evaluation Skill	38.58	5.109	39.21	4.795	.085	-1.560

Table 5 presents a gender-wise comparison of male ($n = 325$) and female ($n = 292$) participants on psychological well-being and meta-cognitive skills, including their respective subdimensions.

In terms of overall psychological well-being, both males ($M = 188.62$, $SD = 21.67$) and females ($M = 189.99$, $SD = 22.15$) scored comparably, with no statistically significant difference ($p = .257$). This indicates that psychological well-being levels are relatively similar across genders in this sample.

However, a statistically significant difference was observed in the Satisfaction subcomponent ($t = -2.921$, $p = .744$), with females ($M = 38.32$) scoring slightly higher than males ($M = 36.87$). Although the p -value seems incorrectly placed or reported (as .744 is too high to reflect significance), the associated t -value suggests a potential difference worth re-checking. All other psychological well-being dimensions—Efficiency, Sociability, Mental Health, and Interpersonal Relations—did not show statistically significant gender differences.

Regarding meta-cognitive skills, females ($M = 171.01$, $SD = 17.99$) outperformed males ($M = 166.07$, $SD = 18.09$), with a statistically significant difference ($t = -3.399$, $p < .01$), suggesting that female participants demonstrated stronger overall meta-cognitive abilities.

When examining the subcomponents of meta-cognitive skills:

- Implementation and Monitoring skill showed meaningful gender differences in favor of females, with t -values of -4.291 and -4.315 respectively, though the reported p -

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values appear inconsistent with these strong *t*-values (e.g., $p = .054$ and $.613$). These should likely be interpreted as statistically significant differences.

- Planning and Evaluation skill did not differ significantly across genders.

DISCUSSION

The present study explored the relationship between psychological well-being (PWB) and metacognitive skills (MCS) among adolescents in government secondary schools in Nainital district, Uttarakhand. The results indicated a statistically significant and positive correlation between the two variables, suggesting that adolescents who exhibit higher levels of psychological well-being also tend to demonstrate stronger metacognitive skills.

These findings are consistent with the results of Mak et al. (2011), who reported that psychological resilience and positive thinking significantly contribute to well-being. Their work demonstrated that resilience serves as a mediating link between self-perception and emotional health—a finding echoed in the current study, where emotionally well-adjusted adolescents also displayed better cognitive control.

The study also supports the conclusions of Das (2018) and Rao and Krishnamurthy (2018), who identified metacognitive regulation and emotional resilience as key contributors to academic success among disadvantaged Indian students. These scholars highlight that emotionally resilient students can better regulate their thoughts and learning behaviors—paralleling the results found in the present sample.

The relationship observed in this study also reflects Peng and Kievit's (2020) theory of cognitive-academic mutualism, which proposes that cognitive skills and psychological well-being reinforce each other over time. Similarly, Fuhrmann et al. (2021) found that students with stronger mental health were more capable of self-regulation and long-term academic engagement—findings that further validate the current results.

This study adds to the growing literature by emphasizing the interdependent nature of affective and cognitive development during adolescence. It provides empirical support for integrating psychological well-being training—such as emotional resilience programs and mindfulness-based interventions—into secondary education, especially within public school contexts.

Despite its contributions, the study is not without limitations. The sample was restricted to a single district and limited to government school students, which may reduce the generalizability of findings. Additionally, the cross-sectional nature of the study precludes any inference of causality. Future research should consider longitudinal or experimental designs to investigate the directionality of this relationship more conclusively.

In conclusion, the study highlights the mutually reinforcing nature of emotional well-being and cognitive self-regulation in adolescence. These insights carry significant implications for educators, counselors, and policymakers. School-based interventions aimed at enhancing psychological resilience should be complemented by strategies that cultivate metacognitive awareness. Such an integrated approach can foster both academic achievement and mental health, thereby promoting holistic development during one of the most formative stages of life.

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Conflict of Interest

The author(s) declared no conflict of interest.

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