

DEVELOPING A COMPREHENSIVE THEORETICAL FRAMEWORK FOR STUDENT INTRINSIC MOTIVATION: A SYSTEMATIC REVIEW OF THE LITERATURE

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ABSTRACT

An examination of the theoretical foundations and empirical evidence regarding intrinsic motivation highlights a critical need for further investigation into behavioral models of learners within educational environments. Consequently, the current study systematically reviewed theories and research related to intrinsic motivation to develop a comprehensive theoretical model and framework. Methodologically, this research is a secondary study categorized as a systematic review. The research corpus comprises peer-reviewed studies and authoritative databases addressing various facets of intrinsic motivation published between 2011 and 2024. From an initial pool of 1,723 identified articles, 49 were selected for final analysis. Drawing upon social-cognitive theories of intrinsic motivation, this analytical study classifies the predictors and correlates of motivation into four psychological domains—personality, emotional, cognitive, and contextual-environmental—and categorizes their outcomes as either internal or external. This classification yielded a comprehensive theoretical framework that emphasizes the dynamic interaction between motivational antecedents and their subsequent consequences.

Keywords: systematic review, intrinsic motivation, academic motivation, social-cognitive theory, educational environment

1.0 INTRODUCTION

Motivation remains a fundamental psychological construct within educational research, serving as the primary catalyst for student engagement and learning (Koenka, 2020). Etymologically derived from the Latin *movere* ('to move'), motivation represents the psychological energy necessary to initiate and sustain action (Eccles et al., 1998; Jahnsen et al., 2022). Within the scientific literature, it is formally defined as 'the process by which purposeful activity is stimulated and sustained' (Schunk et al., 2014, p. 5). A robust body of research in educational and social psychology underscores that student motivation is a prerequisite for academic achievement; conversely, motivational deficits significantly undermine pedagogical effectiveness and learning outcomes.

Motivated students not only exhibit superior learning outcomes but also demonstrate increased persistence, produce higher quality work, and achieve elevated scores on standardized

achievement tests. These effects are particularly pronounced when motivation is intrinsically driven rather than extrinsically reinforced (Fredericks et al., 2011; National Research Council and Institute of Medicine, 2004). Consequently, cultivating academic motivation represents one of the 'greatest educational challenges of our time' (Hattie et al., 2020).

This simultaneous importance and challenge stems from several factors. First, decades of research indicate that motivational beliefs and behaviors positively predict engagement, academic performance, and the sustained pursuit of academic interests (Eccles & Wigfield, 2002); concurrently, students commonly experience a decline in motivation across their schooling trajectory (Martin, 2009; OECD, 2016; Scherer & Preckle, 2019). Second, although it is critical for educators to cultivate environments where students inherently value and enjoy learning, many contemporary academic contexts appear insufficient in maintaining and fostering this intrinsic engagement (Gary et al., 2018; Usher, 2018).

Despite the critical role of motivation in the learning process, longitudinal data suggest that educational systems often fail to systematically increase or even maintain students' drive to learn (Lazowski & Hulleman, 2016). This observed decline raises a fundamental question: how can educators design instructional contexts that effectively promote academic motivation? As Means (2022) noted, this inquiry remains the most foundational and enduring challenge within the field of educational psychology. To address this, several prominent motivational theories have been developed to describe, explain, and predict the initiation, intensity, direction, and persistence of learning behaviors (Linnenbrink-Garcia et al., 2016). Each of these theoretical frameworks employs distinct terminology and constructs to delineate specific dimensions of motivated behavior (Orhene & Vignia, 2023).

A central tenet in understanding learner behavior is the conceptualization of motivation as a multifaceted construct—comprising desires, goals, needs, values, and emotions—those accounts for the initiation, direction, intensity, persistence, and quality of action (Wentzel & Miele, 2009). To explain behavioral patterns within achievement settings, researchers have increasingly utilized the interpretive frameworks of contemporary motivational theories, such as expectancy-value, self-worth, attribution, goal orientation, self-efficacy, control-value, self-determination, and hope theories. These frameworks address fundamental inquiries regarding the mechanisms of learner behavior, specifically concerning self-efficacy in task execution, resilience when facing obstacles, recovery following academic failure, and persistence under significant academic pressure (Boman et al., 2009; Burić et al., 2016; Seifert, 2004; Wigfield & Cambria, 2010).

Accordingly, a review-based study is warranted to examine the extant theories related to this topic. Although various systematic reviews on academic motivation have been conducted (Hattie et al., 2020; Koenka, 2020; Orhene & Vignia, 2023), these prior syntheses frequently present as incomplete, irregular, or fragmented. For instance, a recent and prominent review by Orhene and Vignia (2023) presented commonly cited theories (e.g., expectancy-value theory, social-cognitive theory, self-determination theory, achievement goal theory, and attribution theory) by integrating them separately within a general action model of motivation (Heckhausen & Heckhausen, 2018), thereby aiming to delineate similarities and differences across frameworks.

Consequently, while recent syntheses have advanced the understanding of academic motivation, a truly comprehensive and integrative model remains elusive. The present study addresses this gap by conducting a systematic review that integrates contemporary theoretical approaches with key empirical axes related to academic motivation. Utilizing a systematic methodology, this research evaluates established achievement motivation theories to delineate the most prominent variables emphasized in the extant literature. To achieve these objectives, the following research questions are addressed: (1) What are the primary theoretical approaches within the field of achievement motivation? and (2) Which antecedents and correlates of intrinsic motivation are most consistently identified in empirical research?

Expectancy-Value Theory (EVT): This perspective posits that engagement in academic activities is fundamentally driven by two factors: the expectation of success and the perceived incentive value of that success. Because learner effort is contingent upon these variables, EVT highlights the critical role of individual beliefs regarding competence and the subjective importance assigned to achieving a specific outcome (Eccles & Wigfield, 2002). The relationship between these constructs is multiplicative; motivation is significantly diminished if a learner perceives an outcome as either unimportant or the goal as unattainable. Consequently, the interaction between a learner's expectancy for success and the task value serves as a robust predictor of their motivational orientation and subsequent academic performance (Eccles & Wigfield, 2002).

Expectancies for success and subjective task values are shaped by a diverse array of psychological, social, and cultural factors. Specifically, these constructs are determined by an individual's goals and self-schemas, which are, in turn, informed by their perceptions and interpretations of their developmental history and sociocultural context (Eccles et al., 1998; Eccles & Wigfield, 2002). Ultimately, these expectancies and values serve as direct predictors of academic performance, task persistence, and achievement-related choices.

Attribution Theory: Developed primarily by Weiner (1994), attribution theory describes how individuals perceive the causes of achievement outcomes—whether successes or failures—within academic environments. This framework posits that individuals function as 'intuitive scientists' who seek to identify the underlying reasons for their performance. These causal attributions (or explanations) are critical motivational beliefs, as they determine subsequent effort and persistence. Based on Weiner's model, attributions are categorized across three fundamental dimensions. The first, locus of causality, distinguishes between internal causes (e.g., ability or effort) and external causes (e.g., task difficulty or luck). The second dimension, stability, differentiates between stable causes (e.g., innate aptitude) and unstable causes (e.g., temporary effort or chance). Finally, the controllability dimension refers to the degree of influence an individual can exert over a cause; for example, effort is generally perceived as controllable, whereas talent, temperament, and the actions of others are often viewed as uncontrollable.

Goal Orientation Theory: Motivation researchers have extensively examined children's achievement goals and their corresponding impact on achievement behavior (Ames, 1992; Covington, 1992; Dweck, 1999; Linnenbrink & Pintrich, 2002). Within this field, distinct theoretical perspectives have emerged. For instance, research by Bandura (1997) and Schunk (1990) indicates that establishing specific, proximal, and moderately challenging goals

enhances self-efficacy and optimizes performance. Concurrently, other scholars have explored broader goal orientations—most notably the distinction between mastery and performance goals (Ames, 1992; Dweck, 1999; Elliot & McGregor, 2001). These orientations delineate whether a student's primary objective is to develop competence and task mastery or to demonstrate ability relative to others.

The 2x2 Achievement Goal Model: In the framework proposed by Elliot and McGregor (2001), competence serves as the conceptual core of the goal orientation construct. Competence—and by extension, achievement goals—is differentiated across two fundamental dimensions: definition and valence. Definition refers to the referent or standard utilized to evaluate performance. Within this dimension, three distinct standards are identified: absolute (the inherent requirements of the task), intrapersonal (past performance or maximum potential), and normative (the performance of others). Consequently, competence is assessed based on whether an individual has mastered a task (absolute), improved personal skill sets (intrapersonal), or outperformed peers (normative). In empirical research, absolute and intrapersonal standards are often integrated into a single 'mastery' category due to their conceptual similarities, such as when acquiring new information simultaneously indicates task mastery and personal development.

Consequently, within the current investigation, these standards were considered jointly rather than separately. Research indicates that infants and toddlers use early absolute standards exclusively to evaluate their actions; however, by approximately age 7, individuals typically possess the capacity to utilize absolute, intrapersonal, and normative standards to define competence. The second fundamental dimension of competence is valence (value). Competence is interpreted in terms of either a positive, favorable probability (i.e., potential success) or a negative, unfavorable probability (i.e., potential failure). Empirical evidence suggests that most, if not all, individuals process encounter stimuli in terms of this intrinsic value, often immediately and without conscious intention or awareness (Butler, 1998; Elliot & McGregor, 2001).

Both dimensions—definition and valence—are integral to the competence construct and, consequently, represent essential components of all forms of competence-based regulation, including achievement goals. No achievement goal can be formulated without implicitly or explicitly incorporating information regarding how competence is defined and valenced. Accordingly, it is theoretically consistent to employ a 2x2 conceptualization of achievement goals that integrates the definition and valence dimensions. Table 1 provides a conceptual representation of this framework. Within this model, the following orientations are identified:

Table 1: The 2x2 Achievement Goal Framework: Intersection of Goal Orientation and Motivational Valence

	Approach	Avoidance
Mastery	Focus on mastering the task,	Focus on avoiding misunderstandings
	Learning,	Failure to learn or master the task,
	Understanding,	Using the criteria of not making mistakes,
	Using self-improvement metrics,	Not making a wrong move towards the task
	Progress,	

	Deep understanding of the task	
Performance	Focus on being superior	Focus on avoiding humiliation,
	To get ahead of others	Not looking stupid or dumb compared to others,
	To be the smartest	
	Being the best at doing a task compared to others	Using common criteria
	Using common criteria such as getting the best or highest score	not getting the worst grades.
	Having the best or highest performance in the group	Not being the worst performer in the class

Within this framework, four distinct goal orientations emerge: Mastery-approach goals, in which competence is defined by absolute or intrapersonal standards (mastery) and is positively valenced (approaching success); Performance-approach goals, in which competence is defined by normative standards and is positively valenced (approaching success); Performance-avoidance goals, in which competence is defined by normative standards and is negatively valenced (avoiding failure); and Mastery-avoidance goals, in which competence is defined by absolute or intrapersonal standards (mastery) and is negatively valenced (avoiding failure).

1.1 Social Cognitive Theory

Bandura (1977, 1986) integrated the concept of expectancy from achievement motivation theory (Atkinson, 1957) into the framework of social cognitive theory. Within this framework, expectancy for success—defined as the subjective probability of attaining a specific outcome—is divided into two primary beliefs: competence and control. Competence beliefs refer to the tools and processes learners identify as necessary for specific tasks, whereas control beliefs represent the degree to which these chosen processes are expected to lead to desired outcomes.

Regarding competence beliefs, Bandura (1977) introduced the term self-efficacy to describe an individual's confidence in their ability to organize and execute the actions required to produce specific achievements (Bandura, 1977; Schunk & Zimmerman, 2006). Self-efficacy is considered a critical precursor for initiating behaviors that lead to academic success (Klassen & Usher, 2010). For control beliefs, Bandura (1977) utilized the term outcome expectancies to characterize the perceived relationship between actions and their anticipated results. Outcome expectancies involve the belief that specific behaviors will produce particular outcomes (e.g., that consistent practice will enhance performance), while efficacy expectancies involve the belief in one's ability to perform those behaviors effectively.

This ability to produce a specific outcome is central to the theory (e.g., believing, "I can practice hard enough to win the next tennis match"). These two forms of expectancy beliefs diverge in that individuals may believe a particular action will lead to a specific result (outcome expectancy) yet doubt their ability to perform that action successfully (efficacy expectancy). Indeed, Bandura proposed that individuals' efficacy expectations are primary determinants of goal setting, activity selection, effort expenditure, and persistence. Expectancies for success can thus involve competence beliefs, control beliefs, or a combination of both (Schunk & Zimmerman, 2006).

Within Bandura's theory (1986, 1993, 1997), motivation is defined as goal-directed behavior that is initiated and sustained by expectations regarding the anticipated consequences of actions and one's self-efficacy for executing those actions. Table 2 presents the expected behavioral and emotional responses for individuals exhibiting varying levels of self-efficacy and outcome expectations.

Table 2: Behavioral and Emotional Responses Based on Levels of Self-Efficacy and Outcome Expectations

		Outcome expectations	
		Up	Down
Self-efficacy	Up	Acting in a timely manner and demonstrating confidence	Social activism
			Protest
		High cognitive engagement	Complaint
			Changing the environment
	Down	Self-deprecation	Withdrawal
		Depression	Indifference
			Isolation

1.2 Self-Determination Theory

Self-determination theory (SDT; Deci & Ryan, 1985, 2000) provides a comprehensive framework for understanding motivation, personality development, and psychological well-being. SDT posits that individuals are inherently motivated and experience optimal well-being when three basic psychological needs—autonomy, competence, and relatedness—are satisfied (Deci & Ryan, 2000). Autonomy involves a sense of volition and the need for self-initiated behavior. Competence refers to the inherent need to experience mastery, facilitate growth, and feel effective in achieving personal goals (Deci & Ryan, 2000). Finally, relatedness involves establishing secure emotional connections with others and cultivating a sense of belonging within significant social contexts, such as with parents, teachers, or peers.

2.0 METHOD

This study utilized a qualitative content analysis conducted within the framework of a systematic review. In accordance with the study's objectives, motivational theories were evaluated based on their alignment with two primary inclusion criteria: (a) the adoption of a cognitive approach and (b) the applicability and interpretive power of the theory within achievement and learning contexts.

In addition to evaluating theoretical frameworks, this study involved a comprehensive analysis of the empirical literature. A systematic review was selected as the methodological approach to provide a structured, secondary analysis of extant research. This process involved a rigorous search strategy governed by predetermined eligibility criteria and systematic protocols to ensure transparency and replicability.

The target population for this review comprised peer-reviewed, quantitative research articles focused on academic motivation. The search was limited to studies published in reputable scientific journals between 2011 and 2024.

Initial database searches were conducted using keywords such as "intrinsic motivation theories" and "academic motivation." The following databases were queried: Scientific Information Center of the Academic Center for Education, Culture, and Research (SID, Iran), the National Journals Database (Magiran, Iran), ScienceDirect, Google Scholar, Elsevier, Sage Journals, ProQuest, and PsycINFO (Journals of the American Psychological Association).

Studies addressing the prevalence, effectiveness of interventions, comparisons of different motivational types, or consequences of academic motivation were excluded. The following inclusion criteria guided the screening stage: 1. Studies had to be quantitative in design. 2. The research population had to consist of students or learners within general educational contexts (e.g., schools, universities). 3. The research had to address factors that determine, predict, or influence the emergence of intrinsic motivation within the student population.

The criteria for the critical evaluation and selection of the included studies were as follows: 1. Accurate determination of the target population. 2. Precise definition of the variables and constructs under investigation. 3. Clear specification of the study's location and timeframe. 4. Appropriateness of the sampling method in alignment with research objectives. 5. Sufficient sample size. 6. Valid and reliable psychometric properties of data collection tools and scales. 7. Uniform assessment and data collection procedures for all participants. 8. Originality of the research and publication in reputable, peer-reviewed scientific journals. Article titles and abstracts were independently reviewed by the researchers. Irrelevant studies or those failing to meet these predefined inclusion and quality criteria were systematically excluded from the analysis.

3.0 RESEARCH FINDING

The variables associated with cognitive theories of motivation were identified; these constructs interact conceptually to constitute "intrinsic motivation." These key variables include expectancy for success, subjective task value, self-efficacy, outcome expectations, goal orientation, and attributional dimensions (e.g., locus of causality, stability, and locus of control), as well as basic psychological needs. The definitions of these variables and their specific alignment within each theoretical framework are presented in Table 3.

Table 3. Summary of Theoretical Approaches and Key Constructs in Academic Motivation

Theoretical Approaches	Variables
Expectancy-Value	Expectancy for success and subjective task value
Attributions	Locus of causality, stability, and controllability
Goal Orientation	Mastery goals, performance goals
Self-Efficacy	Self-efficacy, outcome expectations
Control-Value	Perceived control and subjective task value

Self-Determination	Basic Psychological Needs (Autonomy, Competence, and Relatedness) Cognitive Evaluation Theory (Social Contexts and Environmental Factors)
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The initial database search identified 1,723 articles. Following the removal of duplicates and an initial screening of titles and abstracts, 1,675 articles were excluded for failing to meet the predefined inclusion criteria. A total of 49 eligible articles were retained for the systematic review. Descriptive information for these studies—including authors, publication year, study titles, and primary findings—is presented in Table 4. All included studies utilized quantitative, non-experimental designs, examining simultaneous and functional relationships between variables. Based on the synthesis of these results, research on academic motivation can be categorized into antecedent and consequent variables. Antecedent, predictive, and explanatory variables are further classified into four primary domains: personality, emotional, cognitive/metacognitive, and contextual-environmental factors. These factors collectively contribute to the development of intrinsic academic motivation. Conversely, the outcomes of intrinsic motivation are categorized as consequential variables. A summary of the quantitative selection process and study characteristics is provided in Table 4.

Table 4: Summary of Study Characteristics for Included Quantitative Articles

Identification of Studies via Databases and Registries	Records identified through database searching	1723
Title and Abstract Screening	Studies identified as relevant through initial title screening	638
	Unique studies identified after duplicate removal and initial title screening	132
Full-text eligibility assessment of included studies	Studies meeting inclusion criteria following title and abstract screening	49
Selection	Studies meeting inclusion criteria for qualitative synthesis and systematic analysis	49

Based on the systematic review of 49 domestic and international studies, a conceptual process model illustrating the antecedents and consequences of intrinsic motivation is presented below.

- Putwain et al., (2019). Expectancy of success, attainment value, engagement, and achievement: A moderated mediation analysis.
Findings: Expectancy for success was both directly and indirectly associated with subsequent academic achievement, with academic motivation serving as a significant mediator. Furthermore, the indirect pathway from success expectancy to achievement was moderated by attainment value. Specifically, high attainment value appeared to buffer performance against the negative effects of low success expectancy by sustaining higher levels of academic motivation.
- Abdullah et al., (2019). Predictors of Intrinsic Motivation among University Students: An Application of Expectancy-Value Theory.
Findings: This study investigated the relationship between intrinsic and extrinsic factors associated with students' intrinsic motivation. The intrinsic factors included perceived competence and self-determination, while the extrinsic factors comprised social support and the learning environment. Results indicated that all factors were significant predictors of students' intrinsic motivation. Specifically, self-determination

emerged as the most substantial predictor, whereas the learning environment was the least significant determinant.

3. Bieg et al, (2017). The relation between mastery goals and intrinsic motivation among university students: a longitudinal study.

Findings: The results indicated that university students' mastery goals significantly predicted their intrinsic motivation throughout the semester.

4. 4Ghamari and Jafari, (2011). The relationship between internal motivation and happiness among Karai city high-school students.

Findings: The results indicated a significant positive relationship between intrinsic motivation and students' happiness.

5. Kálmán & Gutierrez Eugenio, (2015). Successful language learning in a corporate setting: The role of attribution theory and its relation to intrinsic and extrinsic motivation.

Findings: This study examined the relationship between students' attributions and the constructs of intrinsic and extrinsic motivation, which form the core of self-determination theory (SDT). Among the attributional scales assessed, interest and ability emerged as the primary predictors of intrinsic motivation.

6. Tripathi (2022). A Study On Relationship Between Hope And Academic Motivation Among College Student.

Findings: The results indicated that hope had a significant positive effect on academic motivation.

7. Lotfi Azimi and Ebrahimi Ghavam, (2015). Motivational styles and academic achievement: The mediatuig role of academic self-condept.

Findings: The results indicated that academic self-concept mediated the relationship between academic motivation and academic achievement.

8. Lotfi Azimi et al. , (2016). The role of control and self-efficacy in predicting student's academic motivation.

9. **Findings:** The results indicated that both variables explained a significant proportion of the variance in intrinsic and extrinsic motivation.

10. Mahmoudi (2013). The Relationship between Thinking Styles and Personality Types and Achievement Motivation in Guidance School Students.

Findings: Among the thinking style subscales (executive, legislative, and judicial), the executive and judicial subscales were positively and significantly related to motivation. Furthermore, regarding personality types, conscientiousness was positively correlated with achievement motivation.

11. Bedel & Hamarta, (2014). The relationship between interpersonal problem solving and academic motivation.

Findings: The results indicated a significant positive relationship between problem solving and academic motivation.

12. Omidian et al. (2019). The causal relation between the mindfulness, internal and external academic motivation by mediated time perspective in Shahid Chamran University of Ahvaz' s Students.

Findings: Results indicated that mindfulness exerted a direct effect on both intrinsic and extrinsic motivation; these findings suggest that mindfulness interventions may be effective in enhancing student motivation.

13. Bayat et al. (2023). The relationship between learning styles and intrinsic motivation of 11th grade students with the mediating role of teacher-student bond.

Findings: Results indicated that objective learning style, reflective observation, and active experimentation were directly and significantly related to intrinsic motivation; however, no significant relationship was found with the abstract learning style.

14. Elahi et al. (2020). The role of dimensions of parental involvement in the academic motivation of sixth grade elementary school students.

Findings: Results indicated that participation at home and participation at school were positively related to intrinsic motivation in reading, writing, and mathematics. In contrast, the home–school communication dimension showed no significant relationship with intrinsic motivation.

15. Adeli et al. (2020). The Role of Parents' Motivation in Students' Autonomous Motivation for doing Homework: Testing a Model on Basis of Self – Determination Theory.

Findings: Findings indicated that parental autonomous motivation, attitudes toward homework, and perceived competence exerted direct effects on parents' reported autonomy support. Furthermore, children's perceptions of parental autonomy support mediated the relationship between these parental factors (motivation, attitudes, and competence) and the children's own autonomous motivation.

16. Yasminejad, (2013). The relationship between self-regulation with achievement motivation and academic achievement of female high school students in Tehran.

Findings: Data analysis indicated a significant positive relationship between self-regulation and various dimensions of academic progress among female students.

17. Keykha, (2019). The Relationship between Teaching Styles with Academic Motivation and Engagement in Students.

Findings: The findings indicated significant positive relationships between the dimensions of engagement, self-determination, and teaching style with students' academic motivation.

18. Kharazmi et al. (2013). The role of satisfying basic psychological needs and cognitive beliefs in the intrinsic motivation of students in e-learning courses.

Findings: Addressing basic psychological needs (autonomy, competence, and relatedness) significantly enhanced students' intrinsic motivation in e-learning courses, a relationship mediated by their psychological beliefs.

19. Kouhi Moftakheri Esfahani et al. (2016). The relationship between self-efficacy and attachment styles with motivation for academic achievement of female high school students.

Findings: Data analysis indicated significant positive relationships between self-efficacy, attachment style, and students' academic achievement.

20. Bagheri Sheikhangfashah, (2019). Predicting academic motivation based on psychological resilience and capacity to maintain effort and interest for long-term goals.

Findings: Psychological resilience and grit (specifically the consistency of interest and perseverance of effort) significantly predicted students' academic motivation.

21. Noeei et al. (2020). Relationship between school climate and achievement motivation in high school students.

Findings: Results indicated a significant positive correlation between school atmosphere and achievement motivation. A significant positive relationship was also observed between each dimension of school atmosphere—teacher support, peer support, and autonomy support—and achievement motivation. In contrast, no

significant correlation was found between rule consistency and achievement motivation.

22. Nezarat, (2024). Investigating the effect of stress on students' motivation and academic performance.

Findings: The results indicated that increased levels of stress were significantly associated with a decrease in academic motivation.

23. Sobhi Gharamaleki, (2012). The prediction of achievement motivation from students' emotional intelligence.

Findings: Results indicated a significant positive relationship between emotional intelligence and motivation to progress. Specifically, students high in emotional intelligence achieved a more realistic perception of interpersonal relationships; this ability appeared to facilitate their motivation to progress.

24. Zamani and Abedini. (2019). Investigating the role of socioeconomic level in students' academic motivation.

Findings: Results indicated that students' socioeconomic status functioned as a primary predictor of their motivation and academic achievement.

25. Mohanna et al. (2020). Educational identity, internal motivation and self-efficacy as predictors of deep cognitive engagement.

Findings: Results indicated that academic identity, intrinsic motivation, and self-efficacy significantly predicted deep cognitive engagement.

26. Raufelder et al. (2013). Development and validation of the Relationship and Motivation (REMO) scale to assess students' perceptions of peers and teachers as motivators in adolescence.

Findings: Scores on the Relationship and Motivation Scale (REMO) were significantly and positively associated with multiple dimensions of academic achievement motivation and achievement goal orientation.

27. Chaturvedi, (2019). Academic anxiety, achievement motivation and academic achievement.

Findings: Academic anxiety was significantly and negatively related to achievement motivation; however, its relationship with academic achievement was not statistically significant.

28. Mostafaei and Mohammadkhani, (2019). The Effect of Self-talking on Self-Efficacy and Academic Motivation.

Findings: The results indicated that the self-talk intervention significantly enhanced students' self-efficacy, extrinsic motivation, and intrinsic motivation.

29. Sadr et al. (2023). The mediating role of intrinsic motivation in the relationship between emotion regulation styles and self-determination with goal pursuit in adolescents.

Findings: Results indicated that an integrated emotion regulation style was positively associated with goal pursuit, a relationship mediated by enhanced intrinsic motivation. Consequently, the emotion regulation component appeared to facilitate both intrinsic motivation and persistence toward long-term goals.

30. Stoeber, (2018). Perfectionism: A motivational perspective.

Findings: The findings indicated that the two-factor model of perfectionism—comprising perfectionistic strivings and perfectionistic concerns—demonstrated why perfectionism may be considered both adaptive and maladaptive. Perfectionistic concerns were primarily associated with amotivation, external regulation, and

introjected regulation. In contrast, perfectionistic strivings were associated with identified regulation, integrated regulation, and intrinsic motivation.

31. Bozanoğlu and Sapancı, (2015). The Relationships between the Big Five Personality Traits and Academic Motivation Levels of Turkish University Students.

Findings: Results indicated that the personality traits of extraversion, openness to experience, agreeableness, and conscientiousness were significantly and positively related to academic motivation, whereas neuroticism was significantly and negatively correlated with academic motivation.

32. Kazemi Zadeh and Noori Ghasemabadi, (2015). Investigating the relationship between positive affection, negative affection, and intrinsic motivation with creativity.

Findings: Positive affect and intrinsic motivation significantly predicted creativity levels; however, negative affect was not a significant predictor of creativity.

33. Matsushima and Ozaki, (2015). Relationships between identity and academic motivation.

Findings: Analysis of the findings indicated that self-identity, psychosocial identity, and interpersonal identity were positively and significantly correlated with academic motivation.

34. Ranjbakhsh et al. (2022). Structural Model of Impulsivity and Academic Performance with Mediating Role of Motivation in High School Female Students.

Findings: Findings indicated that academic motivation significantly mediated the relationship between impulsivity and students' academic performance. These results suggest that enhancing academic motivation may serve as a viable intervention to mitigate the negative impact of impulsivity on academic outcomes.

35. Ghasem and Hosseinchari, (2012). Psychological resilience and intrinsic-extrinsic motivation: The mediating role of self-efficacy.

Findings: The results of simultaneous regression analysis indicated that students' psychological resilience was significantly predicted by both intrinsic and extrinsic motivation; intrinsic motivation demonstrated greater predictive power than extrinsic motivation. Additionally, self-efficacy functioned as a mediating variable in the relationship between overall motivation and resilience.

36. Chegini et al. (2017). The mediation role of intrinsic motivation in relationship between perception of parenting styles with academic resilience.

Findings: Intrinsic motivation significantly mediated the relationship between perceptions of parenting styles and academic resilience.

37. Shibak and Salimi, (2022). Investigating the mediating role of academic vitality in the relationship between intrinsic motivation and academic enthusiasm of students at Farhangian University of Zahedan.

Findings: Academic vitality significantly mediated the relationship between intrinsic motivation and academic enthusiasm.

38. Behzadpour et al. (2018). Predicting of achievement motivation based on hardiness and social support in female students.

Findings: Results indicated a significant positive relationship between psychological hardiness and motivation to progress.

39. Hajmohammadi and Aghayani, (2022). A Study on Motivation and Locus of Control among Male and Female EFL Learners.

Findings: Results indicated that an internal locus of control significantly predicted students' motivation.

40. Hejazi et al. (2015). The mediating role of intrinsic motivation on the relationship between basic psychological needs and life satisfaction.
Findings: Findings indicated that intrinsic motivation significantly mediated the relationship between basic psychological need satisfaction and life satisfaction. These results suggest that addressing basic psychological needs and fostering intrinsic motivation may be effective strategies for enhancing overall life satisfaction
41. Aryapooran et al. (2014). The relationship between self-concept dimensions and academic motivation (reading, writing and mathematics) of elementary school students with learning disabilities.
Findings: Pearson correlation analysis indicated significant positive relationships between the dimensions of self-concept and academic motivation.
42. Hamrang et al. (2020). Relativity between creativity and adjustment academic motivation.
Findings: The research findings indicated that the structural model, which examined the relationship between creativity and academic adjustment with academic motivation functioning as a mediator, demonstrated a good fit with the collected data. The relationships between both intrinsic motivation and amotivation with academic adjustment were significant.
43. Sevari and Mombini, (2020). The effect of positive emotions and self-efficacy on imagination through intrinsic motivation.
Findings: Data analysis indicated that positive emotions had a positive causal relationship with intrinsic motivation and imagination. Furthermore, self-efficacy and intrinsic motivation were also positively related to imagination. These findings suggest that because imagination functions as a skill, fostering positive emotions, self-efficacy, and intrinsic motivation may serve as effective strategies for enhancing imaginative capabilities.
44. Ghomi et al. (2019). The Relationship between Quality of Learning Experience and self regulation with Academic Motivation in Students of Qom University of Medical Sciences.
Findings: Results indicated that the quality of learning experiences and self-regulation were significant positive predictors of academic motivation.
45. Golizadeh and Abdollahi, (2019). Predicting academic engagement in students based on academic motivation and teacher perception of the classroom.
Findings: Results indicated significant positive relationships between academic engagement, academic motivation, and students' perceptions of the teacher. Furthermore, academic motivation and perceptions of the teacher significantly predicted levels of student academic engagement.
46. Naqsh and Aghaei Nejad, (2021). Investigating the relationship between academic self-efficacy and academic responsibility by considering the mediating role of intrinsic motivation.
Findings: Results indicated that academic self-efficacy significantly predicted responsibility, with intrinsic motivation acting as a mediator.
47. Rahsepar et al. (2019). The mediating role of social acceptance and emotional schemas in the relationship between family communication patterns and academic motivation of second-year high school students.
Findings: Results indicated that social acceptance and emotional schemas mediated the relationship between family communication patterns and students' academic

motivation. Specifically, negative emotional schemas were associated with diminished academic motivation both directly and indirectly through social acceptance. In contrast, positive emotional schemas only demonstrated a direct positive relationship with academic motivation.

48. Golmohammadnezhad Bahrami, (2015). Role of using internet on self-efficacy, educational motivation and educational achievement.

Findings: Students who utilized the internet demonstrated significantly higher levels of academic self-efficacy and achievement motivation compared to those who did not.

49. Nademi et al. (2022). Assessing the relationships of Teacher Affective Support and Student Emotional Support with Intrinsic Motivation and Extrinsic and Academic Amotivation with Mediation of Academic Emotions.

Findings: Results indicated that teacher emotional support, student emotional support, and academic emotions significantly predicted both intrinsic and extrinsic motivation.

50. Nazari and Azizi, (2023). The relationship between achievement goals and identity dimensions with academic motivation in students.

Findings: Findings indicated significant positive relationships between achievement goals, identity dimensions, and students' academic motivation. Specifically, mastery-approach and performance-approach goals were significantly and positively related to academic motivation. In contrast, mastery-avoidance and performance-avoidance goals demonstrated no significant relationship with the construct. Regarding identity, informational and normative identity dimensions were positively and significantly associated with academic motivation, whereas the confused identity dimension was not a significant predictor.

Finally, Table 5 summarizes the antecedent and consequent variables associated with intrinsic motivation.

4.0 DISCUSSION AND CONCLUSION

Following the identification, screening, and selection of 49 eligible studies from both Persian and English-language databases, a holistic approach was utilized to synthesize and evaluate the core themes within the literature. Given that the included studies predominantly utilized quantitative methodologies to explain the relationships between various constructs and intrinsic motivation, it is essential that these relationships remain grounded in robust theoretical frameworks. A primary objective of this systematic review was to rigorously examine these existing articles to identify and extract the underlying theories used by researchers.

Consequently, the correlates and predictors of intrinsic motivation identified in this review are framed within diverse theoretical perspectives. The synthesis of the literature indicates that factors influencing intrinsic motivation can be categorized into four primary domains of antecedent variables: (a) personality, (b) emotional, (c) cognitive and metacognitive, and (d) contextual-environmental factors. These domains collectively provide a comprehensive framework for understanding the mechanisms that initiate and sustain intrinsic motivation in educational settings.

Antecedent variables related to personality are typically understood through a trait-based approach. The synthesis of the included studies identifies several personality correlates and

determinants of intrinsic motivation: the Big Five personality factors (Bozanoglu & Sabanci, 2015; Mahmoudi, 2013), perfectionism (Stoeber et al., 2012), and components of personal identity (Matsushima & Ozaki, 2015; Nazari & Azizi, 2023). Additionally, intrinsic motivation was associated with impulsivity (Ranjbakhsh et al., 2022), psychological hardiness (Behzadpour et al., 2018), and cognitive processes such as self-talk (Mostafaei & Mohammadkhani, 2019). Finally, individual differences in locus of control (Hajmohammadi & Aghayani, 2022) and self-concept (Aryanpooran et al., 2014) were found to be significant predictors of motivational orientation.

Table 5: Antecedents and consequences of intrinsic motivation

Antecedent variables of intrinsic motivation			
Personality	Emotional	Cognitive	Contextual-Environmental
Learning style and thinking style	Academic Anxiety	Mindfulness	Teacher teaching style
Perfectionism	Stress	attribution	Parental motivation
Personality traits	Emotional Intelligence	psychological resilience	Teacher emotional support
Personal identity	Hope	Self-efficacy and self-talk	Socioeconomic status
Impulsivity	Physical and Mental Fatigue	The subjective value of the task	School atmosphere
Psychological hardiness	Interest	Self-regulated learning	Parenting style
Locus of control	Emotional Schemas	Goal orientation	Quality of learning experiences
Self-concept	Emotion Regulation	Metacognitive strategies	Psychological needs
intrinsic motivation			
Consequence variables (consequences)			
intrinsic		extrinsic	
Cognitive Resilience	Life satisfaction	Academic Achievement	Academic adjustment
Academic Resilience	Enjoyment	Academic Responsibility	Imagination
Academic Enthusiasm	Less academic anxiety	Creativity	Academic performance
Deep Cognitive Engagement	Interest	Academic Vitality	Academic conflict

Several theoretical frameworks within the personality approach have been utilized to explain intrinsic motivation. These include the Five-Factor Model of Personality (Costa & McCrae, 1992), Frost et al.'s (1993) multidimensional perfectionism model, Berzonsky's (1989) identity style theory, and Kobasa's (1979) psychological hardiness model. Specifically, the Five-Factor Model—the most prominent framework for the five core personality dimensions of openness to experience, conscientiousness, extraversion, agreeableness, and neuroticism (Costa & McCrae, 1992)—has been extensively applied to investigate the individual differences that underpin intrinsic motivation.

Empirical findings indicate significant relationships between various personality dimensions and intrinsic motivation. Specifically, conscientiousness has been identified as a robust predictor of intrinsic motivation across multiple studies. Conversely, a consensus exists among researchers that high levels of neuroticism are associated with diminished intrinsic motivation (Bozanoğlu & Sapancı, 2015; Mahmoudi, 2013). These findings may be attributed to the nature of the conscientiousness dimension, which reflects an individual's capacity for behavioral regulation and goal-directed effort. Individuals exhibiting high conscientiousness tend to be

organized, persistent, and methodical in their actions. In contrast, those with lower scores on this dimension often demonstrate higher distractibility and lower self-regulatory capacity.

Furthermore, the neuroticism dimension represents the continuum of emotional stability versus emotional lability. Individuals characterized by high neuroticism frequently experience emotional instability and are prone to negative affectivity, including sadness, anxiety, guilt, and anger (Costa & McCrae, 1999). Such emotional states may deplete the cognitive and psychological resources necessary to maintain intrinsic motivation.

Within the personality framework, the model proposed by Frost et al. (1993) provides a robust explanation for the relationship between perfectionism and intrinsic motivation. Factor analyses of various perfectionism scales indicate that specific facets coalesce into two higher-order dimensions, which Stoeber and Otto (2006) termed perfectionistic strivings and perfectionistic concerns. Perfectionistic strivings are typically associated with traits and processes indicative of psychological adjustment, such as conscientiousness, problem-focused coping, and positive affect. In contrast, perfectionistic concerns are consistently linked to maladaptive outcomes, including neuroticism, avoidant coping, and negative affect.

Research by Stoeber et al. (2012, 2018) suggests that perfectionism functions as a "double-edged sword" due to these diverging motivational characteristics. These dimensions exhibit distinct "motivational footprints": perfectionistic strivings are predominantly approach-oriented and self-determined, involving both self-referential and task-oriented goals. Conversely, perfectionistic concerns are characterized by avoidance and external control, which may lead to motivational disengagement. This dual nature results in disparate relationships with intrinsic motivational constructs.

Discrepancies in achievement motivation and goal orientations may explain why individuals with high perfectionistic strivings consistently outperform those with high perfectionistic concerns (Stoeber, 2012). For instance, differences in the "hope for success" construct may clarify why only individuals characterized by high perfectionistic strivings elevate their levels of aspiration following successful outcomes (Stoeber et al., 2008). Furthermore, variations in mastery goals and self-determined motivation likely explain why individuals with high strivings successfully progress toward significant self-selected goals, whereas those with high concerns do not (Powers et al., 2005). Finally, the degree of self-determined motivation appears to mediate the relationship between perfectionism and well-being; specifically, perfectionistic concerns are associated with elevated levels of burnout, while perfectionistic strivings are linked to lower burnout levels (Madigan et al., 2016).

The second primary category of predictors for intrinsic motivation involves achievement emotions. According to Pekrun's (2006) Control-Value Theory, emotions influence learning and academic performance by modulating both intrinsic and extrinsic motivational processes. Achievement emotions—including anger, anxiety, hope, hopelessness, pride, and enjoyment—encompass a range of positive and negative affective states, along with their associated psychological and physiological manifestations (Sheikhlarabadi et al., 2025).

Positive emotions, such as the enjoyment experienced during task engagement or the anticipated satisfaction from success, typically foster intrinsic motivation. Conversely,

negative emotions—such as boredom, sadness, or anxiety—generally diminish intrinsic motivation during task performance. However, some negative emotions, such as the fear of failure, may paradoxically increase extrinsic motivation to perform the task as a means of avoiding negative consequences (Linnenbrink & Pintrich, 2000). Extensive research has consistently identified positive emotions as critical antecedents of intrinsic motivation (Lovoll et al., 2017; Pekrun, 2006; Sobhi-Gharamaleki, 2012; Tripathi, 2022).

Furthermore, emotion regulation styles significantly influence an individual's intrinsic motivation. For instance, when a decrease in self-esteem occurs due to insufficient effort or academic setbacks, the resulting experience of sadness may serve a functional role by motivating the individual to increase their effort and enhance performance. Similarly, the experience of shame—such as when a student is unable to demonstrate a specific skill in the presence of peers—can act as a catalyst for skill acquisition (Izard, 1989). However, the constructive role of these emotions depends on the individual's capacity to remain aware of and open to their affective states while maintaining a non-judgmental perspective (Benita, 2020). Within the framework of Self-Determination Theory (SDT), three distinct emotion regulation styles are identified: integrated emotion regulation, emotional suppression, and emotional dysregulation. Integrated emotion regulation is characterized by an open and differentiated awareness of one's emotional states, accompanied by a sense of genuine curiosity regarding their origins and functions.

Emotional suppression involves controlled, inflexible efforts to ignore, avoid, or conceal negative affect. In contrast, emotional dysregulation refers to the involuntary experience and expression of emotions; individuals characterized by dysregulation often feel compelled to express affect and perceive their emotions as overwhelming or disorganized. Consequently, these individuals may find that their emotional states significantly interfere with adaptive functioning (Benita, 2020). Supporting this framework, research by Sadr et al. (2023) demonstrates that among Iranian adolescents, an integrated emotion regulation style facilitates goal pursuit by fostering intrinsic motivation. Furthermore, Chaturvedi (2019) argues that while higher levels of anxiety may mobilize energy for self-defense and immediate psychological adjustment, such states ultimately deplete an individual's behavioral energy and diminish intrinsic motivation.

The third primary framework for explaining intrinsic motivation is the cognitive and metacognitive approach. This perspective examines the influence of beliefs, thought processes, and neurocognitive characteristics that facilitate intrinsic motivation. Empirical research in this domain indicates that higher levels of intrinsic motivation are associated with several key constructs, including mindfulness (Omidian et al., 2019), self-efficacy (Lutfi Azimi et al., 2015; Naqsh & Aghaei Nejad, 2021), and subjective task value (Abdullah et al., 2019; Putwain et al., 2019). Furthermore, students who utilize adaptive problem-solving strategies (Bedel & Hamarta, 2014) and demonstrate high levels of self-regulated learning (Yaseminejad, 2013) report greater intrinsic drive. Individual differences in causal attributions regarding academic outcomes (Kálmán & Gutierrez-Eugenio, 2015) and specific goal orientations (Yig et al., 2016) also serve as significant determinants of motivational quality.

Primary frameworks utilized to explain intrinsic motivation within the cognitive approach include Bandura's social cognitive theory (1977, 1997) and Weiner's attribution theory (1985,

2025). Within social cognitive theory, motivation is conceptualized as goal-directed behavior initiated and sustained by the interplay between self-efficacy and outcome expectations. Bandura (1977) defined self-efficacy as an individual's belief in their capability to organize and execute the actions required for specific academic achievements. In contrast, outcome expectations refer to the perceived likelihood that specific behaviors will result in particular consequences. Intrinsic motivation is optimized when both self-efficacy and outcome expectations are high. For example, a student might exhibit high self-efficacy by believing, "I am capable of mastering these mathematical concepts," while high outcome expectations would be reflected in the belief, "Consistent practice will lead to improved proficiency." Research consistently demonstrates that high levels of self-efficacy are associated with increased motivational persistence, whereas low self-efficacy is linked to motivational deficits (Hong et al., 2011).

The fourth framework for explaining intrinsic motivation is the contextual-environmental approach. In contrast to the aforementioned person-centered perspectives—which emphasize individual psychological traits—this approach focuses on the situational, contextual, and peripheral factors that influence motivational processes. From this perspective, intrinsic motivation is conceptualized as a phenomenon triggered and sustained by specific situational characteristics. Empirical evidence suggests that these characteristics include instructional styles (Keykha et al., 2019), parental motivation (Adeli et al., 2020), and teacher-provided emotional and motivational support (Nademi et al., 2022). Furthermore, broader ecological factors such as socioeconomic status (Zamani & Abedini, 2019), school climate (Noeei et al., 2020), parenting styles (Chegini et al., 2017), and the quality of learning experiences (Ghomi et al., 2019) serve as significant determinants of student engagement. A primary theoretical framework within this approach is Self-Determination Theory (SDT; Deci & Ryan, 1985, 2000), which posits that social environments facilitate intrinsic motivation by supporting the satisfaction of basic psychological needs.

Self-determination theory (SDT; Deci & Ryan, 1985, 2000) provides a comprehensive framework for understanding human motivation, personality development, and the influence of the social environment on behavioral regulation. SDT posits a motivational continuum ranging from controlled, extrinsic orientations—such as the pursuit of external rewards—to autonomous, intrinsic motivation characterized by inherent interest and enjoyment. From this perspective, individuals are seen as active agents with an innate tendency to seek mastery and satisfy fundamental psychological needs. Psychological well-being is contingent upon the satisfaction of three universal needs: autonomy (the experience of volition and choice), competence (the experience of mastery and effectiveness), and relatedness (the sense of belonging and secure connection to significant others; Deci & Ryan, 2000). A social context that supports these needs facilitates optimal psychological functioning and well-being. Furthermore, SDT emphasizes that motivational quality is highly context-dependent, highlighting how environmental factors catalyze or impede motivational growth (Ryan & Deci, 2000, 2025). The role of socializers, such as parents and teachers, is particularly critical; by providing need-supportive environments, they assist individuals in the internalization of extrinsic motivations, ultimately fostering more self-determined behaviors (Hong et al., 2011).

The final conceptual model suggests that intrinsic motivation emerges from the dynamic interaction of environmental, personality, cognitive, and affective factors. For instance, a

supportive educational environment (socio-contextual factor) directly influences student self-efficacy (cognitive factor) through the provision of learning resources and indirectly fosters motivation by enhancing traits such as psychological hardiness (personality factor). Similarly, instructors who cultivate a secure and inclusive classroom climate directly mitigate student anxiety (emotional factor); however, individual differences, such as perfectionistic tendencies, may exacerbate that same anxiety. These complex interactions determine the quality of intrinsic motivation, suggesting that even within favorable environments, individual characteristics can lead to divergent motivational outcomes. According to the model, intrinsic motivation is a multidimensional construct emerging from the confluence of personality, emotional, cognitive, and environmental domains. These factors collectively explain the variance in intrinsic motivation, suggesting that a unidimensional or reductionist perspective is insufficient for providing robust psychological explanations. Furthermore, the model posits that these relationships are reciprocal rather than unidirectional. The feedback loops returning from intrinsic motivation to the antecedent factors represent the transformative impact of motivation on the broader dimensions of human functioning, including cognition, affect, and volition (see Figure 1).

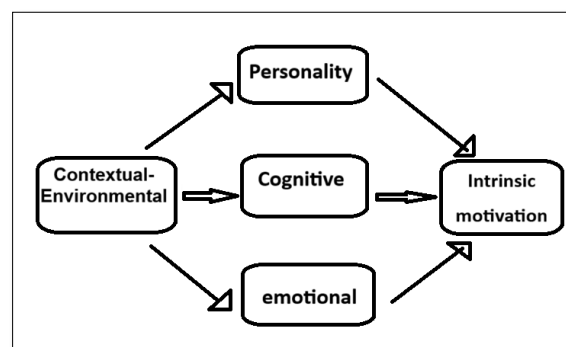


Figure 1: Conceptual Model of the Antecedent Domains and Reciprocal Pathways of Intrinsic Motivation

While this systematic review synthesizes the extant literature and theoretical frameworks, several limitations must be acknowledged. First, although the classification of antecedent variables into four psychological domains provides a comprehensive conceptual framework, these categories are not mutually exclusive. There is significant conceptual and empirical overlap between the proposed domains; therefore, these distinctions should be viewed as integrative rather than as rigid taxonomies. Second, the inclusion criteria were limited to quantitative correlational designs. Consequently, studies utilizing qualitative methodologies or quantitative experimental and interventional paradigms were excluded, which may limit the breadth of the findings. Third, the reviewed literature primarily identifies associations between antecedent variables and intrinsic motivation. The relative scarcity of longitudinal and experimental data precludes the inference of causal relationships.

Based on the findings of this systematic review, several critical directions for future research are proposed. First, the results demonstrate that intrinsic motivation is a multifaceted construct emerging from the confluence of personality, affective, cognitive, and socio-environmental domains rather than a single isolated factor. Consequently, researchers are encouraged to adopt

the Pentagonal Model of Intrinsic Motivation to investigate the complex interactions and synergistic effects of these four domains. Second, this review identified a diverse array of theoretical frameworks that underpin the study of intrinsic motivation. To enhance the theoretical depth of the field, future studies should explicitly ground their research designs in these established frameworks. Clearer articulation of theoretical foundations is essential for developing a more robust and nuanced understanding of motivational processes.

Third, the conceptual model derived from this research represents a comprehensive framework for the field of achievement motivation. Researchers, educational psychologists, and counselors may utilize this model to design evidence-based educational modules and clinical protocols, facilitating more holistic and effective interventions.

The objective of the present systematic review was to evaluate research concerning the predictors and determinants of intrinsic motivation within educational and training contexts. This synthesis resulted in a multidimensional model that integrates personality, affective, cognitive, and socio-environmental perspectives. By illustrating the interconnected and reciprocal nature of these domains, the model provides a robust framework for educational and therapeutic strategies designed to enhance intrinsic motivation across diverse learning environments and related settings.

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Consent for Publication: Not applicable. The present systematic review did not involve therapeutic, clinical, or educational activities with human participants requiring specific informed consent for publication of individual data.

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