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Understanding the Role of Self-efficacy in Adolescent Outcomes: Evidence from a Systematic Literature Review

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Abstract

Adolescence is a critical developmental stage marked by increased psychosocial challenges, requiring adaptive psychological resources. One key construct is self-efficacy. This study aimed to synthesize empirical evidence on the significant relationships between self-efficacy and adolescent development through a systematic literature review (SLR). Literature searches were conducted using Scopus, PubMed, and Semantic Scholar following PRISMA 2020 guidelines, resulting in 10 eligible primary empirical studies. The synthesis revealed that self-efficacy is significantly associated with adolescents' mental health, psychosocial adjustment, addictive behaviors, and academic functioning. Beyond its direct effect, self-efficacy also operates as a mediating mechanism through resilience, optimism, self-efficacy and self-regulation (Cherewick et al., 2023). These findings position self-efficacy as a core, cross-contextual psychological resource with a protective function in adolescence. Future research is recommended to employ longitudinal and intervention-based designs to clarify causal pathways.

1 Introduction

Adolescence is characterized by critical development of biological, cognitive, emotional, and also social changes. In this period, individuals face developmental demands such as the formation of self-identity, increased academic demands, changes in social relations, as well as exposure to psychosocial risks, including emotional distress, anxiety and technology-based addictive behaviors. The complexity of these challenges makes adolescents vulnerable to mental health disorders and psychosocial adjustment difficulties if not supported by adequate psychological resources (Cherewick et al., 2023)

One of the psychological constructs that plays an important role in helping adolescents face developmental challenges is self-efficacy. Bandura, (1997) defines self-efficacy as an individual's belief in his or her ability to organize and carry out the actions necessary to achieve a specific goal. In the context of development, self-efficacy not only functions as a personal belief, but also functions as a self-regulation mechanism that influences the way adolescents assess challenges, manage emotions, and maintain motivation and perseverance in the face of adversity.

Empirical findings show that self-efficacy plays an important role in adolescent developmental adaptation. Anindita et al., (2023) found that self-efficacy was positively correlated with learning motivation, self-regulation, and academic resilience. Zhao & Pan, (2022) report that low self-efficacy is associated with an increased risk of depression and anxiety. Meanwhile, in the behavioral context (Bağatarhan, 2025) it shows that self-efficacy has a negative relationship with internet addiction and works through resilience mechanisms. Cherewick et al, (2023) emphasized that self-efficacy functions as a protective factor that contributes to psychological well-being and mental health in adolescents. In the world of education, self-efficacy also plays a crucial role in the sustainability of the learning process and academic development of adolescents. Self-efficacy has been shown to have a positive correlation with self-regulated learning, learning motivation, and academic achievement and is negatively related to the intention to drop out of school (Anindita et al., 2023) & (Pedditzi, 2024). Conceptually, the overall

findings indicate that self-efficacy is a psychological resource that facilitates self-regulation, increases adaptive capacity, and protects adolescents from psychological risks. Thus self-efficacy is not only a direct predictor, but also an adaptive mechanism that works through advanced psychological processes in adolescent development.

Recent research also shows that self-efficacy does not play a direct predictor, but also has a mediating mechanism in the psychosocial adaptation process of adolescents. Self-efficacy bridges the relationship between positive psychological factors, such as optimism, growth mindset, happiness, and social support, with a variety of adaptive developmental outcomes. These findings suggest that self-efficacy works through the activation of advanced adaptive capacities, such as resilience and self-regulation, rather than simply as static beliefs.

Although research on self-efficacy in adolescents has progressed rapidly, the existing literature still shows a wide variety of focus and findings. Some studies focused on academic contexts, while others focused on mental health or used cross-sectional designs, so the relationship between self-efficacy and various developmental outcomes is often partially understood. Until now, there is still limited synthesis studies that integrate the role of self-efficacy across the context of adolescent development and explain the underlying psychological mechanisms.

Based on these gaps, this study uses a systematic literature review (SLR) approach to identify and synthesize empirical evidence regarding the consistency of self-efficacy in adolescents, covering aspects of mental health, psychosocial adaptation, addictive behaviors, and academic contexts. This study aims to provide a more comprehensive understanding of the role of self-efficacy as a core psychologica l resource in adolescent development, while elucidating the underlying adaptive mechanisms.

This study contributes by integrating empirical evidence on the role of adolescent developmental self-efficacy, including mental health, psychosocial adaptation, addictive behaviors that work through self-regulation, resilience, and other protective factors. With a systematic synthesis approach, this study expands the conceptual understanding of the function of self-efficacy in adolescent development and provides a scientific basis for the development of evidence-based interventions

2 Methods

This study applies the systematic literature review (SLR) approach as the main method. (Greenhalgh et al., 2018), explained that SLR is a literature synthesis methodology that is carried out through an explicit, systematic and replicable procedure with the aim of identifying, assessing, and summarizing findings from all studies relevant to certain research questions. In line with that, the PRISMA (Haddaway et al., 2022) guidelines affirm that SLRs are used to identify, evaluate, and synthesize empirical evidence that meets pre-established inclusion criteria in order to comprehensively answer questions. This SLR approach has a number of key advantages, including producing stronger evidence than narrative reviews, supporting evidence-based policy and practice making, uncovering research gaps and development

patterns in the literature, improving the transparency and quality of the review process, and reducing potential bias in study collection and analysis Elliott et al. (2014). Thus, the implementation of SLR requires the application of strict and consistent procedures, because negligence in the process can reduce the validity and reliability of the findings produced.

Data search procedures and data selection strategies, the researcher uses the Publish or Perish (PoP) version 8 tool as a tool in searching for literature. The process of searching and reviewing this article is carried out systematically to obtain accurate conclusions based on the results of the analysis of the identified articles. Data collection is carried out through three reputable scientific databases, namely Scopus, PubMed, and Semantic Scholar. The selection of these three scientific databases is based on its reputation as a recommended academic repository in systematic review practice due to its wide scope of literature, high credibility, and cross-disciplinary nature. The search strategy is structured using a combination of keywords developed based on the PICO framework and integrated with Boolean operators. Keywords that are adjusted to the focus of the research are *("self-efficacy" OR "self-regulation" OR "executive control") AND ("adolescent" OR "teenager" OR "youth")*.

With the initial search yielding 137 articles, which were further managed using Rayyan AI in the next stage. After the removal of 2 duplicate articles, a total of 135 articles were continued to the screening stage. Based on the evaluation of titles, abstracts and keyword suitability, 80 articles were eliminated, so that 55 articles were for the full-text screening stage. Of these, 27 articles are inaccessible due to limited availability of full text or are not *open access*. Furthermore, 28 articles were assessed for feasibility and resulted in the elimination of 18 articles that could not be in accordance with the established research design. Thus, as many as 10 articles met all inclusion criteria and were used in the data extraction and synthesis stages.

Study inclusion criteria, the inclusion criteria in this systematic review were established to ensure that the selected articles were directly related to the research focus, namely the significant relationship of self-efficacy in adolescents. Studies that meet the criteria must be primary research, published within the last 5 years, written in English or Indonesian, available in full-text form, and using both quantitative and qualitative methodological approaches. In addition, the included articles must explicitly examine the influence or significant relationship of self-efficacy on the adolescent population. Given the limited number of similar studies in the Indonesian context, international studies are also considered with the interpretation of findings adapted to Indonesia's socio-cultural framework. A number of initial publications were excluded from the selection process because they did not meet the eligibility criteria. Literature restrictions have also been implemented in the last five years to ensure that the references to be used remain relevant and present current developments. Although the search found older publications, they were ultimately excluded due to limited access to the full text and did not meet the in-depth requirements.

For screening the literature search process begins with the identification stage of publications in the Scopus, PubMed and Semantic Scholar databases using a combination of predetermined keywords.

Furthermore, the articles obtained from the selection to remove duplication and examine their relevance level through the assessment of titles and abstracts according to inclusion criteria, focusing on the significance of self-efficacy relationships in adolescents. Studies that pass the initial screening stage are then evaluated for methodological quality using the Critical Appraisal Skills Programme (CASP) Checklist for Analytical Cross-Sectional Studies, which allows for systematic assessment on both quantitative and qualitative approaches. The entire series of selection processes are carried out referring to the PRISMA 2020 guidelines.

And then data extraction, the data extracted from the selected articles include the main bibliographic and methodological information, the name of the author, the year of publication, the title of the article, the country or context of the study, the study design, the type of research, the method of data collection and data analysis, the focus or purpose of the research, the characteristics of the sample, its variables and measurements (independent, dependent, mediator), the instrument or scale used, the main findings, the statistical results including effect size, The author's conclusions, assessment of the quality of the study along with the tools used, the advantages of the research, limitations or potential biases, the level of relevance to the review questions, practical and theoretical implications, and the quality score or research recommendations.

For data synthesis, all data that has been collected is then analyzed through a qualitative synthesis process with a meta-aggregation approach. Cochrane (2023) states that this approach emphasizes presenting findings accurately without altering the original meaning through excessive reinterpretation. In line with that, CASP (2020) asserts that meta-aggregation provides a structured framework for identifying patterns and themes across studies, while maintaining the context of the initial findings. Through this approach, the results of research on the significance of the relationship of self-efficacy in adolescents are organized into main themes that reflect the patterns, similarities, and differences between studies, resulting in a comprehensive synthesis that is aligned with the focus of the study.

3 Result

The article selection process in this systematic literature review follows the guidelines of Preferred Reporting Items for Systematic Reviews and Meta Analyses (PRISMA) to ensure transparency and methodological accuracy. The selection stages include identification, screening, eligibility and included as shown in the PRISMA diagram. Generated 137 articles, which were further managed using Rayyan AI in the next stage. After the removal of 2 duplicate articles, a total of 135 articles were continued to the screening stage. Based on the evaluation of titles, abstracts and keyword suitability, 80 articles were eliminated, so that 55 articles were for the full-text screening stage. Of these, 27 articles are inaccessible due to limited availability of full text or are not open access. Furthermore, 28 articles were assessed for feasibility and resulted in the elimination of 18 articles that could not be in accordance with the established research design. In detail, the 18 articles issued include, 9 articles that were not research on adolescents, 5 articles were issued because they were systematic literature reviews, and 4 articles were

issued because they were in the form of meta-analysis. Exceptions to systematic review articles and meta-analyses are made to ensure that these studies include empirical primary studies.

Thus, as many as 10 articles met all inclusion criteria and were used in the data extraction and synthesis stage and were further analyzed in the systematic literature review study. These articles are then used as the basis for thematic synthesis and discussion of the relationship between self-efficacy and various aspects of development in adolescents. Overall, this selection flow shows a systematic, transparent and rigorous process in ensuring valid and meaningful scientific contributions to the understanding of the role of self-efficacy in adolescents.

No	Name of Researcher and Year	Research Title	Types of Research and Research Variables	Research Results
1.	**Yi Zhao & Qiuwu Pan (2022)**	*Effect of Social-Psychological Intervention on Self-Efficacy, Social Adaptability and Quality of Life of Internet-Addicted Teenagers*)	Randomized Control Trials (Experimental) **IV:** Psychosocial Interventions. **DV:** Self-efficacy, social adaptability, quality of life, Internet addiction rate.	Psychosocial interventions significantly **improved the self-efficacy**, social adaptability, and quality of life of adolescents with internet addiction compared to the control group (P<0.05). This intervention is effective in correcting *bad* surfing habits
2.	**Kleppang, Steigen, & Finbråten (2023)**	*Explaining variance in self-efficacy among adolescents: the association between mastery experiences, social support, and self-efficacy*	Psychosocial interventions significantly **improved the self-efficacy**, social adaptability, and quality of life of adolescents with internet addiction compared to the control group (P<0.05). This intervention is effective in correcting *bad* surfing habits	**Mastery experience** was the most significant contributor to self-efficacy variance (explaining 10.7% variance). The final model explains **the 25% total variance** in self-efficacy. Higher self-efficacy is found in men and those with a good family economy
3.	**Cherewick, Hipp, Njau, & Dahl (2023)**	*Growth mindset, persistence, and self-efficacy in early adolescents: Associations with depression, anxiety, and externalising behaviours*	Cross-Sectional *Studies* (Multi-Group Structural Equation Modeling) **IV:** *Growth mindset*, Persistence. **DV:** Depression, Anxiety, Externalizing Behavior. **Mediator:** Dimensions of Self-Efficacy (academic, social, emotional). **Moderator:** Gender (*Sex*/Gender) because structural pathways are proven to be invariant based on gender	Cross-Sectional *Studies* (Multi-Group Structural Equation Modeling) **IV:** *Growth mindset*, Persistence. **DV:** Depression, Anxiety, Externalizing Behavior. **Mediator:** Dimensions of Self-Efficacy (academic, social, emotional). **Moderator:** Gender (*Sex*/Gender) because structural pathways are proven to be invariant based on gender
4.	**Tuba Bağatarhan (2025)**	*Investigating the mediating effect of resilience in the relationship between self-efficacy, happiness, social support, and*	Structural Equation Modeling (SEM) and *Bootstrapping Mediation Analysis* **IV:** Self-efficacy, *happiness*, social support. **DV:** Internet	Resilience plays a *fully mediated* role in the relationship between self-efficacy, happiness, and social support with internet addiction. Self-efficacy, happiness, and social support positively

		Internet addiction in adolescents	*Addiction*. **Mediator:** Resilience,. **Moderator:** Gender (tested but **not significant**)	predict resilience. High levels of resilience predict low internet addiction rates.
5.	**Tehreem Nazir et al. (2025)**	*Investigating the Impact of Social Media Addiction on Self-Efficacy and Self-Control among Youth in Gujranwala*	Correlation Quantitative Studies **IV:** Social Media *Addiction*. **DV:** *Self-efficacy*, *self-control*.	Correlation Quantitative Studies **IV:** Social Media *Addiction*. **DV:** *Self-efficacy*, *self-control*.
6.	**Supervia, Salavera, & Quílez-Robres (2022)**	*Self-Efficacy, Optimism, and Academic Performance as Psychoeducational Variables: Mediation Approach in Students*	Quantitative Studies (Bootstrapping Mediation Analysis) **IV:** Optimism. **DV:** Academic Performance. **Mediator:** Academic Self-Efficacy.	**Self-efficacy played a significant mediating effect** in the relationship between optimism and academic achievement ($B = 0.20$, $p < 0.001$). Optimism itself has a weak and insignificant correlation directly with academic achievement.
7.	**Anindita, Tiatri, & Heng (2023)**	*Self-Efficacy: A Predictor in Adolescence Self-Regulated Learning*	Quantitative Correlation Studies (Linear Regression) **IV:** Self-Efficacy. **DV:** *Self-regulated learning (SRL).*	A **strong positive correlation** was found between self-efficacy and independent learning (correlation coefficient **0.600**). Self-efficacy was a **significant predictor** for self-learning, explaining **36.2%** of its effects. No significant differences were found in SRL by gender, grade level, availability of tutors, or number of siblings,
8.	**Maria Luisa Pedditzi (2024)**	*School Satisfaction and Self-Efficacy in Adolescents and Intention to Drop Out of School*	*Cross-Sectional* and Descriptive Studies (Logistic Regression) **Predictors:** School satisfaction, Self-efficacy in school activities, Academic achievement. **DV:** Intention to *Drop Out*.	Interventions to improve *self-efficacy* **Low academic achievement** is the most significant predictor of intention to drop out of school. Dissatisfaction with the school experience, relationship with teacher/family, and perceived support were also significant predictors of intention to drop out, explaining **26.9%** variance.

9.	**Raimondi et al. (2025)**	*Self-Efficacy and Psychological Well-Being in Adolescents: Evaluating the Moderating Role of Socioeconomic Status and Cultural Factors*	Cross-sectional *Studies* (Multigroup Structural Equation Modeling) **IV:** Academic Self-Efficacy (ASE). **DV:** Positive Affective and Negative Affective *States*. **Moderator:** Socioeconomic Status (SES) and Immigrant Background.	ASE significantly predicted positive ($\beta=0.34$, $p<0.001$) and negative effects ($\beta=-0.17$, $p<0.001$) across the group. Neither SES nor immigrant backgrounds moderated the relationship between ASE and positive/negative affects, suggesting that ASE influences are consistent across these demographic groups.
10.	**Kong & Kong (2024)**	*The Role of Self-efficacy in Motivating Middle School Students' Learning*	Educational Psychology Review (Non-Empirical Primary) **IV:** Self-Efficacy. **DV:** Learning Motivation, Resilience. **Relationship:** Reciprocal.	Strong self-efficacy significantly **increases learning motivation**. The relationship between self-efficacy and motivation is **reciprocal.** Self-efficacy also **mediates the** relationship between learning motivation and academic achievement

3.1 Self-efficacy as a universal protective factor for adolescent mental health

Through this literature synthesis, it is shown that self-efficacy has a significant and consistent relationship with adolescent mental health, especially as a protective factor against depression, anxiety, and also externalized behavior. Studies in early adolescence show that self-efficacy is negatively associated with depression and anxiety and plays a role in suppressing the emergence of externalising behaviour, either directly or through motivational psychology (Cherewick et al., 2023).

This protective relationship is reinforced by cross-contextual findings suggesting that self-efficacy is positively associated with psychological well-being and positive affectation in high school adolescents, regardless of socioeconomic background and demographic characteristics (Raimondi et al., 2025). (Zhao & Pan, 2022) in addition, self-efficacy was also found to be related to improved quality of life and psychosocial adjustment in adolescents with behavioral vulnerabilities, such as internet addiction. These findings show that self-efficacy is not just an academic variable, but also a general psychological resource that functions to protect adolescents from emotional distress and behavioral dysfunction.

Mastery experience, social support, and developmental environment are the formation of self-efficacy

Highlighting the formation of self-efficacy in adolescents, this synthesis shows that mastery experience is the most influential predictor in explaining self-efficacy variables by going beyond demographic factors and family characteristics (Kleppang et al., 2023). Social support from family, peers, and the

school environment contributes significantly to strengthening self-efficacy, both directly and through increasing resilience and subjective well-being (Bağatarhan, 2025). This study specifically shows self-efficacy and social support together increase self-efficacy and social support together, which serve as a protector against addictive behaviors. Thus, self-efficacy can be understood as a dynamic and contextual construct, formed through the interaction of personal success experiences and a supportive social ecosystem.

3.2 Self-efficacy as a mediating mechanism in adolescent psychosocial adaptation

The role of self-efficacy as a mediation mechanism is a theme that is strengthened by the existence of the new literature, not just a direct predictor. Recent research shows that self-efficacy works through advanced psychological variables, especially resilience in explaining adolescent adaptations and behaviors. A structural study by Bağatarhan, (2025)shows that resilience fully mediates the relationship between self-efficacy and internet addiction, in both adolescent boys and girls. Self-efficacy contributes significantly to increased resilience which in turn decreases the tendency to internet addiction. These findings expand on previous understandings that put more emphasis on the direct relationship between self-efficacy and problematic behaviors.

This is consistent with other research showing that self-efficacy mediates the relationship between growth mindset, optimism, and adolescent psychosocial adjustment (Supervia et al., 2022). Thus, self-efficacy can be understood as a psychological lever (psychological liver) that activates the internal adaptive capacity of adolescents.

3.3 Self-efficacy in the academic context as self-regulation, motivation and sustainability of education

In the context of education, the literature on self-efficacy in adolescence is the main domain that is often synthesized consistently. Kong & Kong, (2024) self-efficacy has been shown to have a significant relationship with self-regulated learning, learning motivation, academic performance and school satisfaction. Research in Indonesia shows self-efficacy as a strong predictor of self-regulated learning in high school adolescents, which contributes significantly to the ability to plan, monitor, and evaluate learning (Anindita et al., 2023). Meanwhile, longitudinal and cross-sectional studies in Europe show that low self-efficacy is associated with school dissatisfaction and increases intention to drop out of school (Pedditzi, 2024). These findings confirm that self-efficacy and adolescents have a significant relationship and have implications for educational sustainability and long-term developmental trajectories.

4 Discussion

This systematic literature review study aims to evaluate whether self-efficacy has a significant relationship in adolescents and how it plays a role in various domains of development. Based on a synthesis of ten empirical primary studies that met the inclusion criteria, the main findings showed that

self-efficacy has a significant, consistent and multidimensional relationship in adolescent life, covering aspects of mental health, psychosocial adaptation, addictive behavior, as well as academic contexts.

First, the results of this SLR clearly show that self-efficacy functions as a universal protective factor for adolescent mental health. Some studies have documented a significant negative association between self-efficacy and depression, anxiety, and external behaviors. These findings reinforce the view that adolescents with high levels of self-efficacy tend to have confidence in their ability to cope with developmental challenges, so they are better able to manage emotional stress and social pressure. In addition, a consistent positive relationship between self-efficacy and psychological well-being confirms that psychological resources are relatively stable and cross-context.

Second, the results of SLR confirm that the academic context is the main domain of self-efficacy manifestations in adolescence. Self-efficacy has consistently been found to be related to self-regulated learning, learning motivation, academic achievement, school satisfaction and intention to stay in education. Evaluation of this study shows that adolescents with high self-efficacy are better able to manage the independent learning process, set goals, and maintain academic involvement. In contrast, low self-efficacy is associated with school dissatisfaction and an increased risk of dropping out, which confirms the structural implications of self-efficacy on educational sustainability.

In terms of methodological evaluation, the majority of the studies analyzed used a cross-sectional design so that the causal relationship could not be strongly concluded. In addition, the dominance of quantitative approaches shows that there is still limited exploration of adolescents' subjective experiences related to the formation and dynamics of self-efficacy. Nevertheless, the consistency of findings across contexts and populations provides cuckup factual power in answering research questions.

The long-term implications of this study suggest that self-efficacy is a strategic target in adolescent development research and interventions. Future research needs to adopt longitudinal and experimental designs to test causal pathways such as changes in self-efficacy throughout developmental transitions. In practical terms, these findings support the development of school, family, and community-based interventions that emphasize mastery experience and social support as the foundation for strengthening self-efficacy to support mental health and sustainable adolescent development in the long term.

5 Conclusion

Based on the results of a systematic literature review of ten empirical primary studies that met the inclusion criteria, it can be concluded that self-efficacy has a significant and consistent relationship in various aspects of adolescent development. These cross-study findings show that self-efficacy plays a role as a core psychological resource that influences mental well-being, psychosocial adaptation, addictive behavior, and academic success in adolescents (Cherewick et al., 2023) & (Raimondi et al., 2025).

In particular, this study confirms that self-efficacy functions as a protective factor against psychological distress, which is demonstrated through a significant negative association with depression, anxiety and externalized behavior. In addition, self-efficacy also makes a positive contribution to the psychological well-being and quality of life of adolescents, including in groups that have behavioral vulnerabilities such as internet addiction (Zhao & Pan, 2022) & (Bağatarhan, 2025). These findings strengthen the position of self-efficacy as a general psychological resource that is cross-contextual and relatively stable.

Furthermore, the results of this synthesis also show that self-efficacy not only plays a role as a direct predictor, but also as a form of important mediation mechanism in the relationship between positive psychosocial factors such as optimism, growth mindset, happiness and social support with adolescent adaptive outcomes (Supervia et al., 2022) & (Cherewick et al., 2023). In the academic context, self-efficacy has consistently been found to be associated with self-regulated learinig, learning motivation, academic achievement and decreased intention to drop out of school, which shows long-term implications for educational progress (Anindita et al., 2023) & (Pedditzi, 2024).

Although the majority of studies used cross-sectional designs that limit the drawing of causal conclusions, the consistency of findings across contexts and populations provides strong empirical support for the significant role of self-efficacy in adolescents. Therefore, further research is recommended to use longitudinal and interventional research designs to deepen the understanding of causal and dynamics of self-efficacy development. Practically, these findings confirm the importance of strengthening self-efficacy through success experiences and social support as preventive and promotf strategies in supporting the development of elapsed and adaptive adolescents.

Declarations

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Conflict of interest

The authors declare that there is no conflict of interest.

Ethical approval and consent to participate

Not applicable.

Approval for publication

Not applicable.

Data availability

All data analyzed in this study are sourced from articles that have been published and are available in the bibliography cited.

Author's contribution

All authors contributed to the conception and design of the study. All authors have read and approved the final manuscript.

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Figures

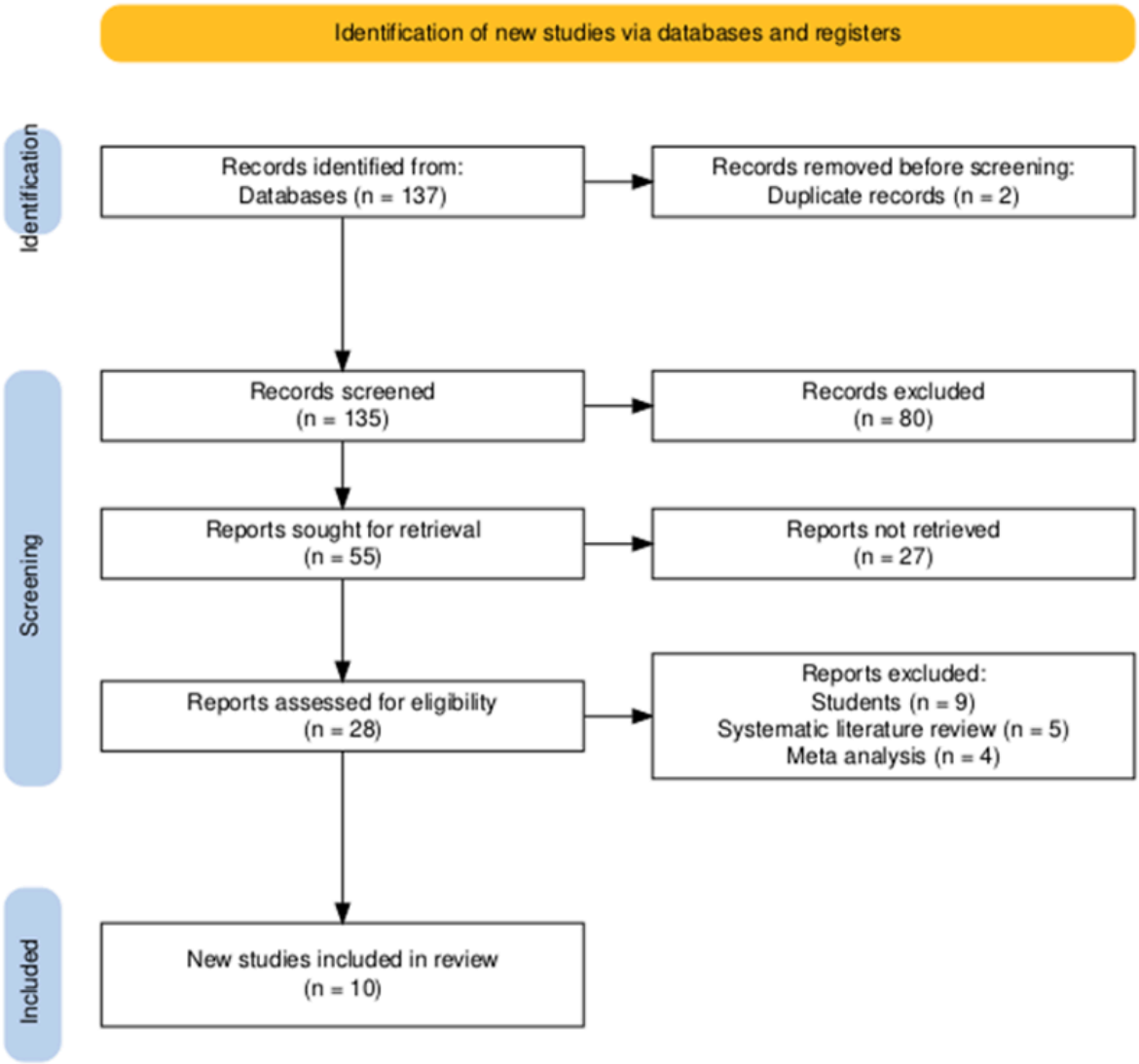


Figure 1

Flowchart for Selection with PRISMA 2020