AMERICAN PSYCHOLOGICAL ASSOCIATION

Psychological Bulletin

© 2025 American Psychological Association
ISSN: 0033-2909

https://doi.org/10.1037/bul0000491

How Does Perceived Social Support Relate to Human Thriving? A Systematic Review With Meta-Analyses

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Extensive research has illuminated how perceived social support bolsters functioning and buffers individuals from negative life outcomes. This systematic review and meta-analysis examined associations between various types (informational, instrumental, emotional, and a combination of types) and sources (parents, peers, teachers/classmates, and others) of perceived social support and five domains of human thriving—mental and physical health, risk-taking behaviors, educational functioning, and work performance—yielding 604 studies with 1,014 effect sizes that met criteria for inclusion. On average, perceived social support had the largest associations with better mental health, $r_+ = .35$, 95% CI [.152, .578]; and better work performance, $r+ = .37$, 95% CI [.343, .401]. Perceived social support also demonstrated significant associations with other domains of thriving: better physical health, $r_+ = .24$, 95% CI [.220, .617]; lower risk-taking behaviors, $r_+ = -.17$, 95% CI [−.453, −.154]; and better educational functioning, $r_+ = .21$, 95% CI [.047, .454]. Different types and sources of support demonstrated similar associations with mental health and educational functioning, but varying associations with physical health, risk-taking behaviors, and work performance. Associations between support and physical health and risk-taking behaviors were larger in childhood and adolescence than in emerging or later adulthood. Associations between support and educational functioning were larger for non-Western than Western cultural groups, whereas associations between support and work performance were larger in Western than non-Western cultural groups. Analyses provided evidence for both concurrent and prospective associations between perceived social support and five domains of human thriving. Multiple types and sources of perceived social support and thriving must be considered when examining the theoretical and practical implications of perceived social support.

Public Significance Statement

This study underscored the importance of considering the associations between multiple types and sources of perceived social support and multiple domains of human thriving. Our results suggest that regardless of individuals' initial state of mental and physical health, risk-taking behaviors, educational functioning, or work performance, perceived social support can be an integral component of clinical, educational, and work interventions. Our findings can aid policymakers, health care professionals, and social service providers in establishing high performing social support networks as a resource for bolstering human thriving, such as providing access to resources for maintaining health or addressing health-related issues. Our findings also suggest that adolescents, in particular, can benefit from perceived social support (especially from parents) for improving physical health and reducing risk-taking behavior.

Keywords: perceived social support, mental and physical health, risk-taking behaviors, educational functioning, work performance

Supplemental materials: https://doi.org/10.1037/bul0000491.supp

Thomas L. Webb served as action editor.

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Because the research was a literature review and did not involve the collection of data from human research participants, it was classified as exempt and did not require further approval of an ethical committee. This research was a meta-analysis (secondary data analysis); it did not involve informed consent of human research participants. All coauthors have read the above American Psychological Association policy on full disclosure, and the authors declare that neither the authors nor any member of their immediate family have a significant conflict of interest nor any potential bias against another product or service. The authors declare that they have no conflict of interest.

This research received no specific grant from any funding agency, commercial, or not-for-profit sectors. The authors thank the following research interns for their work in the literature review: Cameron Tan, Richelle Ho, Fabian Fu, and Heidi Ng.

GeckHong Yeo played a lead role in conceptualization, data curation,

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Social support refers to individuals' perception of psychological, behavioral, and material resources (available or acted upon) in their social network that bolster their functioning, protect them from adversity, and/or help them achieve their goals (S. Cohen, 2004; Demaray & Malecki, 2002; Rodriguez & Cohen, 1998). These aspects may collectively be labeled *human thriving* (D. J. Brown et al., 2017), which captures several domains, including physical health, mental health, risk-taking behaviors, educational functioning, and work performance. Research that spans almost five decades provides evidence for how social support bolsters thriving (e.g., Feeney & Collins, 2015) and buffers individuals from negative outcomes across different life domains (e.g., Rueger et al., 2016, 2022; C. Zimmerman et al., 2022). This body of work distinguishes received and perceived social support, which refer to the extent of support individuals believe they have received and perceptions of the extent of support available if needed (Barrera, 1986), respectively. This research suggests that perceived social support is more important than received social support for psychological well-being, health, academic functioning, and work performance (P. S. Chu et al., 2010; Rhoades & Eisenberger, 2002). Tardy's (1985) model of social support considers types and networks of social support and has had a prominent influence on research illuminating the importance of perceived social support across multiple domains of individuals' lives (Coyle & Malecki, 2018; Rueger et al., 2010). Types of social support are defined as categories of supportive behaviors that include informational, emotional, instrumental, and appraisal support (Tardy, 1985). Networks of social support refer to the sources of support or members of support networks, such as parents, peers, teachers, classmates, romantic partners/spouses, and coworkers and supervisors (i.e., organizational support).

According to theories of quality of life (e.g., Cummins, 2000, 2016), individual functioning ranges across the following life domains: material (e.g., living situation), health, productivity (e.g., paid employment), intimacy (family, peer, and partner relationships), safety (e.g., legal), community (e.g., education), and emotional well-being (e.g., psychological). Understanding the antecedents contributing to positive functioning across these domains has important theoretical and practical implications for increasing quality of life (Cummins, 2016). In particular, theoretical and empirical work underscores social support as an important antecedent of positive functioning (Wills-Herrera et al., 2009). Yet, findings vary across studies in terms of how social support is associated with positive functioning, which underscores the need for a systematic and comprehensive approach when examining different domains of functioning based on theories of the quality of life. Thus, our systematic review and meta-analysis focuses on the associations between perceived social support and core domains of human thriving: physical health, mental health (emotional well-being), education (community), risk-taking behaviors (safety), and work performance (productivity).[1]

Underpinned primarily by Tardy's model, a substantial body of work on perceived social support reveals positive links with functioning across these core life domains: better mental and physical health (Rueger et al., 2016, 2022; C. Zimmerman et al., 2022), fewer risk-taking behaviors, and higher educational functioning (Coyle & Malecki, 2018; Demaray & Malecki, 2002). Empirical links between perceived social support and functioning were established with studies defining support relatively globally. Empirical studies often consider one or two types or sources of perceived social support that tap different domains of functioning (e.g., Coyle & Malecki, 2018; Machell et al., 2016). Only a few studies have distinguished among types and sources of perceived social support; these studies found that various domains of functioning are differentially related to different types and sources of perceived social support (Demaray & Malecki, 2002; Malecki & Demaray, 2003; Rueger et al., 2010; refer to Domains of Functioning for detailed literature review and summary).

Existing systematic reviews and meta-analyses on social support and functioning have combined received and perceived social support. For instance, a meta-analysis with children and adolescents examining the associations between social support and health, psychological functioning, and academic achievement concluded that social support was most strongly associated with health outcomes and least strongly associated with academic functioning (P. S. Chu et al., 2010). In contrast, another meta-analysis found that global support that combined received and perceived social support is associated with fewer internalizing and externalizing behaviors, and with better educational functioning (e.g., academic achievement and school attendance) among children and adolescents (Heerde & Hemphill, 2018).

Additionally, meta-analyses that examined perceived social support specifically are focused on global support (not distinguishing different types) and specific domains of children's and adolescents' functioning, such as depression. These meta-analyses found that global perceived social support is associated with lower depression, with a small effect size, among children and adolescents (Rueger et al., 2016, 2022). Specifically, associations between support and domains of functioning differed across different sources of received and perceived social support: Parental and peer support demonstrated larger associations with lower depression than support from teachers, classmates, and school personnel. Another meta-analysis involving individuals from adolescence through later adulthood (H. H. Wang, 1998) found low to moderate associations between social support (not distinguishing received and perceived social support) and mental health (e.g., depression, quality of life, and stress) and physical health (e.g., health status and disease

[1] We did not include the material domain because most studies did not report SES (an indicator of living situation) or information on living circumstances and there were not sufficient effect sizes/studies to investigate the associations between different types and sources of support and material functioning. For intimacy, we controlled for the quality and satisfaction of relationships as a covariate/moderator, instead of investigating these factors as outcomes associated with social support, given that empirical evidence indicates high associations between perceived social support and relationship satisfaction.

formal analysis, investigation, methodology, project administration, supervision, visualization, writing–original draft, and writing–review and editing. Jennifer E. Lansford played a supporting role in conceptualization, investigation, methodology, writing–original draft, and writing–review and editing. Karen D. Rudolph played a supporting role in conceptualization, investigation, methodology, writing–original draft, and writing–review and editing.

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symptoms). Another review with adult populations that examined received and perceived social support and physiological functioning revealed the importance of emotional support for improving cardiovascular functioning, particularly among older adults; social support positively related to physical health outcomes (Uchino et al., 1996).

These meta-analyses leave unclear whether the observed associations relate to received or perceived social support (or both). Additionally, these meta-analyses are focused on global social support (not distinguishing the type or source), with the exception of two meta-analyses that compared different sources of support (Rueger et al., 2016, 2022) and specific domains of functioning, such as depression (P. S. Chu et al., 2010; Rueger et al., 2016, 2022), health (P. S. Chu et al., 2010), and educational functioning among children and adolescents (P. S. Chu et al., 2010; Heerde & Hemphill, 2018), work performance among adults (Viswesvaran et al., 1999), or physiological functioning across (and not differentiating) developmental stages (H. H. Wang et al., 2003). In addition, prior meta-analyses are focused on individuals at risk for or already diagnosed with clinical conditions (Shilling et al., 2013).[2] To our knowledge, there is no review and meta-analysis that comprehensively evaluates the strength of associations between different types and sources of perceived social support and different domains of functioning in healthy populations across the lifespan.

The aim of our systematic review and meta-analysis is to evaluate how perceived social support relates to human thriving, as defined by mental and physical health, risk-taking behaviors, educational functioning, and work performance (which we refer to as domains of functioning hereafter). We addressed the lacunae in existing literature by attending to the conceptual distinctions among different types (informational, emotional, instrumental, and appraisal) and sources (parents, peers, teachers, classmates, and others that included romantic partners/spouses, siblings, and grandparents) of perceived social support, moderators (gender, age, and cultural contexts), and temporal ordering and timing of associations between perceived social support and domains of functioning.

Guided by theories of the quality of life, there are core building blocks of life functioning (Cummins, 2000, 2016). Understanding how perceived social support is associated with multiple core domains of functioning can provide a more comprehensive and integrated picture of the implications of perceived social support for positive life functioning in the real world, where individuals experience various types and sources of social support in everyday contexts that function as support resources across core domains of life functioning (S. Cohen & Wills, 1985; Uchino et al., 1996). A nuanced understanding of the role of different types and sources of social support can contribute to an upstream targeted approach that promotes the availability of support to bolster positive functioning and buffers against negative outcomes across different life domains, which are essential to promote quality of life (Holt-Lunstad et al., 2017).

Types and Sources of Perceived Social Support

Different types of perceived social support can serve different purposes (Malecki et al., 2000; Tardy, 1985). *Informational support* refers to the provision of advice or knowledge that can help individuals deal with challenges and typically involves advice and guidance about solving problems. *Emotional support* includes empathic and caring expressions that help individuals process, regulate, and express feelings, and also experience reassurance and trust. Instrumental support is the provision of resources and concrete aid, such as spending time and providing materials or money. *Appraisal support* is the provision of affirmation through evaluative feedback and social comparison, such as comments and suggestions about current and intended levels of behavior or performance (e.g., House, 1981). Sources of perceived social support involve members of support networks, such as parents, peers, teachers, classmates, romantic partners/spouses, and coworkers and supervisors (i.e., organizational support).

Relations Between Perceived Social Support and Domains of Thriving

An extensive body of research has examined relations between perceived social support and different domains of human thriving. We briefly review this literature on how perceived social support is related to five of these domains: mental health, physical health, risk-taking behaviors, educational functioning, and work performance.

Mental Health

Research on perceived social support and mental health (e.g., anxiety, depression, loneliness, internalizing and externalizing symptoms, psychological well-being and functioning, and psychosocial well-being) mostly relies on composite measures of informational, emotional, instrumental, and appraisal support (e.g., Coyle & Malecki, 2018; Machell et al., 2016; Rodriguez & Cohen, 1998). Although findings from these studies consistently demonstrate positive associations between perceived social support and better mental health (e.g., Coyle & Malecki, 2018; Machell et al., 2016; Rodriguez & Cohen, 1998), these studies assume that different types of perceived social support have similar associations with mental health. For instance, studies found that perceived social support that is measured globally is related to lower symptoms of anxiety and depression across the lifespan (H. H. Wang et al., 2003). Perceived social support was found to enhance adults' mental health, including greater psychological well-being, life satisfaction, and happiness (H. H. Wang et al., 2003). Additionally, there are few studies that have examined different sources of perceived social support separately to compare their implications for functioning across domains of life, but some empirical evidence indicates that different sources of perceived social support have differential associations with mental health. For children, adolescents, and emerging adults, perceived social support from parents but not peers was associated with better mental health (H. H. Wang, 1998). In contrast, other research found no differences (Pool et al., 2022) or the opposite—perceived emotional support from peers but not

[2] Other reviews examining social support (not distinguishing perceived and received support) and domains of functioning, such as physical health and work performance among adults (Uchino et al., 1996; Viswesvaran et al., 1999), do not provide quantitative evidence and were conducted more than a decade ago. Scholars have called for quantitative synthesis of empirical findings on perceived social support that consider multiple types and sources when examining its implications across domains of functioning (Rueger et al., 2010), and to consider gender and developmental differences (e.g., Heerde & Hemphill, 2018).

parents were associated with better mental health for adolescents (Gregory et al., 2020). Some empirical findings indicate that in adult populations, perceived social support from romantic partners is associated with better mental health, with support from romantic partners serving as a stronger predictor compared with support from parents and peers (e.g., A. Jones, 2013).

Physical Health

The literature on types and sources of perceived social support in relation to physical health (e.g., obesity, health status, diabetes, diet, eating habits, weight, physical symptoms, physical status, and fitness) is less extensive than the literature on mental health. Studies focus primarily on perceived global social support that combines different types of support into a composite (e.g., G. F. Moore, Cox, et al., 2018; S. Moore, Leung, et al., 2018; Pastor, 2020) or on one specific type of support, and assess specific sources of perceived social support, such as parents, peers, teachers, and romantic partners (e.g., Curtis & Kaugars, 2022; Garthe, 2016). This body of work assessing perceived global support has found that greater perceived social support is associated with better health status and reduced risk of obesity and diabetes among adolescents and adults (Hill-Briggs et al., 2020). In contrast, studies examining specific types of perceived social support revealed mixed findings regarding the associations between perceived social support and physical health. Some studies found that instrumental support is not related to physical health (e.g., diabetes) among adolescents and emerging adults (Robinson, 2008), whereas other studies indicated that instrumental support relates to better physical health, particularly lower body mass index (BMI) and better health status among adolescents and emerging adults (Beets et al., 2006; Tilga et al., 2021). Research links perceived social support from peers and family members with better physical health, such as lower BMI, across different developmental stages (e.g., Teleki et al., 2022).

Risk-Taking Behaviors

Research on types and sources of perceived social support in relation to risk-taking behaviors (e.g., smoking, substance use, drinking, illicit drugs, unsafe sexual activities, substance dependence, substance abuse, and health-risk behaviors) is less well-established. Most studies focus on perceived global social support that combines different types into a composite (e.g., G. F. Moore, Cox, et al., 2018; Pastor, 2020) or assesses specific sources of perceived social support, especially from parents, peers, and romantic partners (e.g., Curtis & Kaugars, 2022; Garthe, 2016). Predominant work on risk-taking behaviors relates to adolescence and adulthood (e.g., Curtis & Kaugars, 2022; Garthe, 2016), and some evidence from this body of work indicates that instrumental support from parents relates to fewer risk-taking behaviors, such as externalizing behaviors (Garthe, 2016). Yet, other research found that perceived global social support from parents, peers, and romantic partners is associated in some similar and some different ways with behaviors involving sexual risk-taking and substance use (Flykt et al., 2021). In particular, among adolescents and emerging adults, perceived social support from parents is associated with less substance use, whereas perceived social support from peers and romantic partners is associated with more substance use (Flykt et al., 2021).

Educational Functioning

Research on associations between types of perceived social support and educational functioning links a composite measure of perceived social support (e.g., Olana & Tefera, 2022) as well as instrumental support to better educational functioning, such as higher grades and greater academic motivation and goals, across childhood and adolescence (e.g., Kaynak et al., 2023; Ramirez et al., 2014). Findings are more mixed for the associations between informational and emotional support and educational functioning across different age groups (e.g., Kyere et al., 2020; Morinaj et al., 2023). For sources of perceived social support, there is some empirical evidence indicating that support from peers, family, and teachers is related to better academic performance, college attendance and retention, and academic motivation and goals in adulthood (S. Mishra, 2020). Combining received and perceived social support, a meta-analysis comparing different sources of support found that support from teachers, classmates, and other school personnel collectively had the largest association with children's and adolescents' functioning, including academic achievement, externalizing behaviors, and psychological well-being (P. S. Chu et al., 2010).

Work Performance

Research on links between social support and work performance (e.g., organizational commitment, absenteeism, and job satisfaction) has tended not to specify the specific type of support and to focus primarily on support within the workplace rather than different sources of support. Studies demonstrate that perceived support from coworkers is related to more satisfaction and less burnout at work (Mérida-López et al., 2019) as well as better job performance (e.g., Nwanzu & Adams, 2019). It is less clear whether support from different sources, such as friends or romantic partners, is related to better work performance, as different sources of support often are not differentiated in this literature (e.g., Ezekwueme, 2021). It is also unclear whether the specific type of support (e.g., informational, emotional) is related to work performance, as some studies have reported similarities in relations between the types of support and work performance (P. C. Mishra & Shyam, 2005), but very few studies have differentiated types of support.

Collectively, empirical studies examining perceived social support were often ambiguous about the types and sources of support, and they typically include one or some combination of different types (informational, emotional, instrumental, and appraisal) and sources (parents, peers, teachers, classmates, and others—romantic partners/spouses, siblings, and grandparents). Existing literature suggests that some more than other types of perceived social support, such as instrumental support that entails provision of resources and concrete aid in the form of spending time and providing money, may have the largest associations with enhancing physical health, reducing risk-taking behaviors, and improving educational functioning. Prior research indicated inconsistent findings regarding the associations between perceived social support and functioning. In addressing these mixed findings,

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systematic review and quantitative synthesis of findings across studies is warranted to provide conclusive evidence regarding how different types and sources of perceived social support relate to different domains of functioning. It is also possible that findings may be mixed because associations between perceived social support and different domains of functioning are moderated by other factors. Gender, age, and culture are three factors that may moderate associations between perceived social support and different domains of functioning.

Moderation by Gender, Age, and Culture

From a theoretical perspective, gender and developmental differences can be expected in the associations between perceived social support and different domains of functioning. Based on gender role theory, females are more likely than males to be socialized from a young age to build social relationships and to provide and solicit social support (K. Yang & Girgus, 2019). Thus, females may be more likely than males to form and maintain stronger social relationships and may be better able to reap the benefits of these relationships and to perceive a greater extent of support available when needed (Frydenberg & Lewis, 1991, 1993). Yet, other studies have found no gender differences in the associations between perceived social support and mental health (Rueger et al., 2016). Reviews and meta-analyses have suggested that the magnitude of associations between perceived social support and physical health (Uchino et al., 1996) and depression (Rueger et al., 2016) held across genders.

Theories on autonomy granting posit that during adolescence and emerging adulthood, gaining autonomy from parents and establishing social relationships outside the family are especially salient (B. B. Brown & Larson, 2009), which may underscore the importance of perceived social support from a variety of sources. Empirical findings are more consistent in demonstrating the associations between perceived social support and physical and mental health for adolescents and emerging adults than for other developmental stages. For example, several studies have found that adolescents and emerging adults' perceived support across different types and sources is associated with better mental health and lower BMI. Associations between older adults' perceived social support and physical and mental health are less well-established, with studies indicating mixed findings in how different types and sources of support are associated with physical and mental health. Overall, studies that examine the associations between perceived social support and physical and mental health reveal inconsistent findings and differential associations contingent on support recipients' gender and developmental stage. Findings from these studies suggest that the associations may be particularly large among females and in adolescence and emerging adulthood (Rueger et al., 2010; Slavin & Rainer, 1990).

According to a biopsychosocial perspective of risk-taking behaviors (Irwin & Millstein, 2014), the associations between perceived social support and lower risk-taking behaviors may be larger in adolescence because biological, social, and emotional changes increase individuals' susceptibility to risk-taking behaviors during this developmental period. For instance, adolescents experience biological changes that entail immature and growing cognitive ability to reason abstractly about cause and effect, greater identification with peers and experience of peer pressure, and heightened emotional lability that stem in part from changes to hormones, family interactions, and peer relationships.

A meta-analysis examining gender differences in risk-taking behaviors identified three categories of risk-taking behaviors. The first category includes sensation-seeking personality and the "risk as value" hypothesis, which posits that high arousal and socialization of risk-taking are valued traits in males, with boys facing fewer societal and parental sanctions than girls for engaging in such behaviors (B. B. Brown & Larson, 2009). The second category of theories, such as Kahneman and Tversky's (1979) prospect theory, posits that differences in risk-taking behaviors are bounded by situations (and how they are framed) and as such no gender differences are expected. The third category of theories states that individuals take risk in situations in which risk increases the chance of success, such as expectancy-value models (e.g., Byrnes et al., 1999). This category of theories suggests that, in most contexts, males are more likely than females to engage in risk-taking behaviors (Byrnes et al., 1999). Empirical evidence on gender differences in the associations between perceived social support and risk-taking behaviors is mixed, with some studies documenting differences (e.g., Fang et al., 2019; Semenza & Gentina, 2023), while others reveal no differences in these associations (e.g., Sacco et al., 2014).

Several theoretical frameworks have also been invoked to explain gender differences in educational functioning. Earlier theories, such as expectancy-value theory, posit that females have lower academic performance and greater academic anxiety than males. More recent theories, such as self-efficacy and goal theories of achievement motivation, theorize domain specificity in gender differences, which is supported by empirical evidence. For instance, females were found to have greater motivation in language and arts than males, and the gender gap remains throughout the school years. Yet, the greater motivation in mathematics and science among males compared with females decreased over time (Meece et al., 2009). These theories suggest possible gender differences in how perceived social support relates to educational functioning.

Drawing from psychosocial theories of development, adolescence is a time when academic functioning is a key developmental task, and socialization efforts are often focused on this domain of functioning. Hence, the associations between social support and academic functioning may be larger during adolescence than other developmental stages that are focused on negotiating other developmental tasks, such as forming a family and establishing a career (Berk, 2022). A meta-analysis found that age and gender moderated the associations between social support and psychosocial outcomes (a composite of internalizing and externalizing behaviors and educational functioning), with larger associations in younger adolescents and female samples (Heerde & Hemphill, 2018). Empirically, there are fewer established findings for how gender and age may moderate linkages between perceived social support and educational functioning; these are more marked in other domains of functioning (e.g., Raufelder et al., 2015; Rueger et al., 2010). According to organizational theories and reviews and meta-analyses on work performance, the positive associations between perceived support, particularly from supervisors and coworkers, and work performance were similar across ages and genders (Viswesvaran et al., 1999).

Cultural contexts also warrant attention, in light of differences between Western and non-Western cultures in terms of soliciting and experiencing social support (H. S. Kim et al., 2008), as well as experiences of mental and physical health, risk-taking, educational

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functioning, and work performance (e.g., Krendl & Pescosolido, 2020; Miyamoto & Ryff, 2022). In Western societies, relationships and interactions emphasize self-expression and self-worth, and individuals have less apprehension about asking for support directly. In contrast, in some non-Western societies such as China, South Korea, and Taiwan, where Confucian ideologies such as social restraint, harmony, and responsibility are emphasized, individuals are sometimes cautious about seeking support and burdening their social network (H. S. Kim et al., 2008).

Besides the common delineation of Western and non-Western cultures, a predominant way of characterizing cultures is in terms of individualism versus collectivism. In individualistic cultures, such as most Western societies including the United States, Germany, and the Netherlands, individuals perceive the self as independent and their value for their own needs, preferences, and perceptions may motivate them to solicit support from their social networks (Lomas et al., 2023). In collectivist societies in East Asia, Latin America, and Africa, individuals perceive the self as interdependent and value responsibility, harmony, and social relationships with the groups to which they belong; they may therefore be less inclined to solicit support that causes inconvenience to others (Lomas et al., 2023).

Western and individualistic cultural contexts emphasize up-regulating positive emotions and down-regulating negative emotions, and experiencing negative emotions is more predictive of poor mental and physical health than in non-Western and collectivistic cultures (Miyamoto & Ryff, 2022). Confucian ideology is deeply ingrained in some Asian societies, where *guan* or *chao shun* (i.e., strict training) and educational achievement are underscored (Chao, 1994). In addition, collectivistic cultures often have more societal sanctions and shaming of risk-taking behaviors than individualistic cultures (e.g., Gelfand et al., 2011). For work performance, individuals in non-Western and collectivistic cultures may not benefit as much from social support in the work context because they view needing support from others outside of the family as a potential inconvenience to be avoided and are reluctant to acknowledge their concerns or to put their own needs above those of others (W. Q. Chen et al., 2009). Thus, how perceived social support relates to mental and physical health, risk-taking behavior, educational functioning, and work performance may differ across Western and non-Western and across individualistic and collectivistic contexts.

Temporal Ordering and Timing of Associations

Our review of the literature involving longitudinal studies suggests that evidence is inconclusive about temporal ordering and timing of associations between perceived social support and the five domains of thriving (e.g., Morinaj et al., 2023; Rueger et al., 2010). These studies provide information to test the following temporal ordering and timing of associations: (a) prospective associations wherein perceived social support predicts subsequent functioning (e.g., T1 perceived social support with T2 functioning, T2 perceived social support with T3 functioning); (b) prospective associations wherein functioning predicts subsequent perceived social support (e.g., T1 functioning with T2 perceived social support, T2 functioning with T3 perceived social support); and (c) repeated concurrent associations between perceived social support and functioning (e.g., T1 perceived social support with T1 functioning, T2 perceived social support with T2 functioning).

Studies that control for baseline functioning provide insights into whether perceived social support predicts subsequent functioning (similarly, studies that control for baseline perceived social support reveal whether functioning predicts subsequent perceived social support). Longitudinal studies can also clarify the timing of associations between perceived social support and functioning in each of the five domains with respect to the duration between assessments of perceived social support and functioning (e.g., Morinaj et al., 2023; Rueger et al., 2010). Understanding whether perceived social support predicts subsequent functioning (and/or the reverse) and the timing of their associations facilitates formation of theories of developmental cascades involving perceived social support, mental and physical health, risk-taking behaviors, educational functioning, and work performance (Tamis-LeMonda & Lockman, 2023), and informs the design and implementation of evidence-based social support programs and interventions (Holt-Lunstad et al., 2017).

Aims of This Review and Meta-Analysis

To our knowledge, no systematic review and meta-analysis has evaluated the associations between perceived social support and multiple domains of functioning—mental and physical health, risk-taking behaviors, educational functioning, and work performance while considering conceptual distinctions among the types and sources of perceived social support, moderating factors, and temporal ordering and timing of associations. Our review and meta-analysis has three primary objectives. First, we investigated associations between perceived social support and the five domains of thriving. We hypothesized that perceived social support would demonstrate significant positive associations with better mental and physical health, fewer risk-taking behaviors, more optimal educational functioning, and better work performance (Hypotheses 1a to e). We explored as research questions whether the magnitude of associations between perceived social support and each of the five domains of thriving differ (RQ1f), and how different types and sources of perceived social support compare in their associations with each of the five domains of thriving (RQ1g and RQ1h). We view these questions as exploratory because previous reviews and meta-analyses that considered types and sources of social support combined both received and perceived social support and focused on children and adolescents only (P. S. Chu et al., 2010), or they did not distinguish between types and sources of perceived social support and focused on specific thriving outcomes (Uchino et al., 1996; H. H. Wang, 1998; H. H. Wang et al., 2003). Importantly, empirical studies that investigated types and sources of perceived social support in relation to the five domains of thriving provide, at best, mixed evidence.

Second, we investigated potential moderators of the associations between perceived social support and each of the five domains of thriving. We explored the moderating role of support recipients' gender, developmental stages, and culture as research questions (RQ2a to 2c) because findings are inconsistent about gender, age, and cultural differences in the associations between perceived social support and the five domains of thriving. Third, because no systematic efforts to date have synthesized evidence on temporal ordering and timing of associations between perceived social support and the five domains of thriving from longitudinal studies, we examine this issue as an exploratory research question (RQ3).

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Method

Transparency and Openness

This meta-analysis was conducted according to the guidelines from Cooper (2016) and Quintana (2015) and reported based on the latest version of Preferred Reporting Items for Systematic Reviews and Meta-Analyses guidelines (PRISMA 2020; Page et al., 2021). A protocol was registered a priori following the PRISMA guideline (PROSPERO Registration Number CRD 42022353624). There were deviations from preregistration, in which we included work performance as an outcome.[3] All data, analysis code, and research materials are available on the Open Science Framework (OSF Home) at https://osf.io/jzwsg/.

Literature Search

With the assistance of a staff librarian (Nguyen Quoc), two research assistants (Celine and Celest Chan) independently used three search strategies to systematically collect studies on perceived social support (conceptualized as perceived social support from social networks and in everyday contexts and not support provided from intervention studies) and the five domains of functioning. First, a systematic search was conducted in October 2023 across APA PsycInfo, EMBASE, and CINAHL because these databases cover two fields pertinent to this review—social science and medical research. Searches were re-run just before the final analyses in December 2023. Limits, when available, were applied to include only academic articles and human studies.

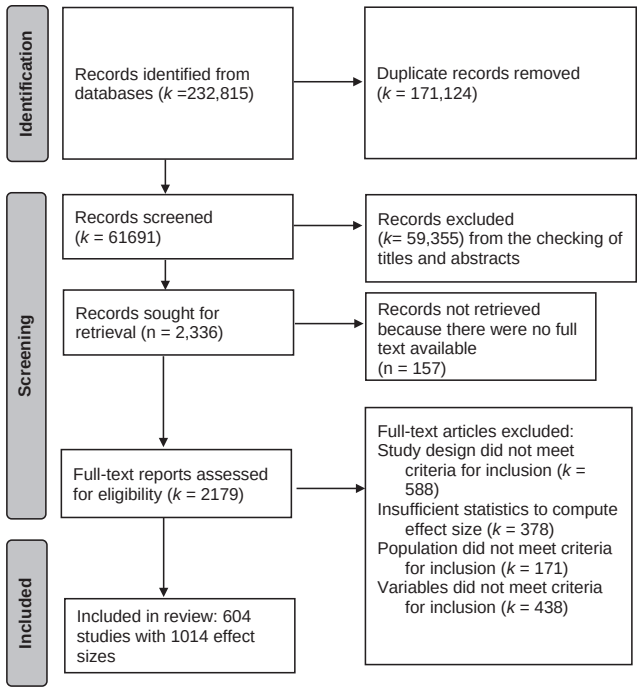
Following the recommendation of B. T. Johnson (2021) and Grames et al. (2019) in addressing the potential for mono-language bias in evidence synthesis for searching in English journals and for dealing with articles not written in English or with an English translation, we translated the 42 articles that were not written in English or with an English translation. Of these 42 articles, 36 articles used study designs and variables that did not meet criteria to be included in this review. Thus, we translated two from Korean using the Google Translate application programming interface and we translated four from Chinese (the first author's native language is Chinese). Second, reference lists of the included studies (including other reviews and meta-analyses) were searched manually and cross-referenced for additional articles. These search methods identified 232,815 citations to relevant studies. Online Supplemental Table S1 the search terms developed using the Population Intervention Comparison Outcome search strategy and the full search strings.

Study Selection

Study screening was conducted using Covidence software (Veritas Health Innovation, Melbourne, Australia). Figure 1 presents a flowchart of the study selection process. Of the 232,815 studies identified in the initial searches, 171,124 were duplicated records and they were removed. 61,691 studies were screened, with 59,355 articles were excluded from the checking of titles and abstracts. These articles did not examine perceived social support; they did not distinguish received and perceived support ($k = 55,596$; e.g., Dressler, 1985; Qi et al., 2020), type of support ($k = 16,168$; mental health $k = 3,899$, physical health $k = 2,217$, risk-taking behaviors $k = 3,009$, educational functioning $k = 3,631$, and work performance $k = 3,412$; e.g., Qi et al., 2020; Wright, 2018), and sources of perceived social support ($k = 9,457$; mental health $k = 2,155$, physical health $k = 1,711$, risk-taking behaviors $k = 1,576$; educational functioning $k = 2,042$, and work performance $k = 1,973$; Qi et al., 2020; Wright, 2018). 157 studies were not retrieved because there were no full-text articles (e.g., T. P. Johnson, 1991; Phillips & Murrell, 1994).

Figure 1

Flow of Records, Full-Text Reports and Studies Into the Review



2,179 full-text articles selected for full-text review were independently screened by another two reviewers, with any discrepancies resolved through consensus. A third reviewer was contacted if consensus could not be reached. Inclusion and exclusion criteria were established a priori (online Supplemental Table S1), as described below:

Inclusion Criteria

- Be a full-text empirical study;
- Provide sufficient statistics for calculation of effect sizes–correlation coefficients. For studies that lacked statistical information needed to calculate effect sizes, authors were contacted to provide the missing information;
- Include at least one measure of perceived social support (i.e., informational, emotional, instrumental, or appraisal; studies that combined types of support or measured global perceived social support were included);

[3] As requested by a reviewer; this outcome is important to consider both theoretically and empirically (Ezekwueme, 2021; Mérida-López et al., 2019; Nwanzu & Adams, 2019).

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- Include at least one measure of mental health, physical health, risk-taking behaviors, educational functioning, or work performance.

Exclusion Criteria

- Study designs that did not meet inclusion criteria for this review (e.g., qualitative studies, articles on theories, interventions) with no relevant statistics for the calculation of effect sizes (588 articles);
- Did not report sufficient statistics required to compute effect sizes (authors of these studies failed to respond to requests for the needed information; 378 articles);
- Did not have full-text available (157 articles);
- Variables that did not meet inclusion criteria for this review (received social support measure and/or outcomes other than mental health, physical health, risk-taking behaviors, educational functioning, or work performance; 438 articles);
- Population that did not meet inclusion criteria for this review (assessing social support and/or mental health, physical health, risk-taking, educational functioning, or work performance of peer supporters; 171 articles).

The meta-analyses included 604 studies with 1,014 effect sizes.[4]

Data Extraction and Coding

Two research assistants (Celest Chan and Celine Chan) extracted and coded data on study designs, sample characteristics (e.g., age, sample size, country), including correlation coefficients, types (emotional, instrumental, informational, appraisal, and a combination of types of support) and sources (parents, peers, teachers and/or classmates, others that included partner/spouses, siblings and grandparents, and organizations) of perceived social support and domains of functioning—specifically, mental health (e.g., depression, anxiety, loneliness), physical health (e.g., obesity, health status, diabetes), risk-taking behaviors (smoking, substance use, externalizing symptoms), educational functioning (e.g., grades, grade point average, highest grade completed, academic goals, academic motivation), and work performance (e.g., organizational commitment, job satisfaction, employee engagement, absenteeism, turnover intention, actual turnover), cultural contexts, average age of the sample and gender (i.e., average proportion of sample participants who were female) of support recipients, existing level of functioning (mental and physical health, risk-taking behaviors, educational functioning, and work performance), and temporal ordering and timing of associations (for longitudinal studies; see online Supplemental Tables S2–S4 on studies' characteristics).

Interrater reliability was calculated using Kappa coefficient for categorical variables—the de facto statistic used to measure the chance-corrected extent of agreement between observers (DeVellis, 2005). All studies were double coded by two coders with agreement ranging from 78% to 100%—types (88%) and sources of perceived social support (92%), domains of functioning (90%), cultural contexts (98%), average age of the sample (100%), and for temporal ordering and timing of associations (78%). For continuous variables, interrater reliability was calculated using Pearson correlations—specifically, gender (r = 1.00; i.e., average proportion of sample participants who were female) of support recipients, existing functioning (r = .84), and effect sizes (r = 0.94). Any discrepancies in coding were discussed and resolved. Perceived social support was assessed primarily with the Multidimensional Scale of Perceived Social Support (k = 78; Zimet et al., 1990), the Perceived Social Support Scale (k = 21; Procidano & Heller, 1983), the Child and Adolescent Social Support Scale (k = 36; Malecki et al., 2000), the Harter Social Support Scale (k = 18; Harter, 1985), the Network of Relationships Inventory (k = 12; Furman & Buhrmester, 1985), or the perceived organizational support scale (k = 129; Eisenberger et al., 1986).

Risk of Bias (Quality) Assessment

Studies were independently evaluated for quality by two reviewers, with differences discussed and resolved. We used Downs and Black's (1998) instrument, which assessed studies across five domains of quality: external validity, study bias, confounding, selection bias, and study power, generating scores that ranged from 0 to 28 with higher scores indicating better quality. Most studies had moderate to high quality (M = 16.14, SD = 4.07); scores ranged from 11 to 21.

Effect Size Assumptions and Analyses

There were several instances in which studies contributed multiple dependent effect sizes to our meta-analyses, and we dealt with this following the guidelines provided by Cooper (2016) and Quintana (2015). First, there were studies examining more than one type of perceived social support. Second, there were studies examining more than one source of perceived social support. Third, for longitudinal studies that provided (a) prospective associations wherein perceived social support predicts subsequent functioning, (b) prospective associations wherein functioning predicts subsequent perceived social support, and (c) repeated concurrent associations between perceived social support and functioning, there was more than one effect size contributed by each study. Fourth, there were studies that reported multiple effect sizes because investigated the association between social support and thriving among samples recruited from different countries.

Because types and sources of perceived social support, temporal ordering, and cultural contexts were examined as moderators in our meta-analyses, a single effect size estimates that aggregated the multiple correlation coefficients was not favored; in all these instances, we therefore calculated and reported effect size estimates separately (Hunter & Schmidt, 2014). For such cases, more than one set of data was collected from the same study, forcing consideration of issues of statistical dependency that stem from multiple dependent effect sizes (Hunter & Schmidt, 2014). We used the robust variance estimation to account for nonindependent effect sizes, which can also be adjusted to deal with smaller meta-analyses (n < 40; Tipton, 2015).

Fifth, some studies measured each type of perceived social support in a variety of ways (e.g., emotional support was assessed

[4] The studies included 42 that did not have an English translation. Of these 42 articles, 36 articles used study designs and variables that did not meet criteria to be included in the review. Thus, we translated two from Korean using the Google Translashte application programming interface, and we translated four from Chinese (the first author's native language is Chinese).

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with different measures). In this case, there were several dependent effect sizes from the same study and we computed the average effect size across all measures of the same type or source of perceived social support and all measures of the same domain of functioning within a study. Hence, each study contributed only one effect size for the analyses involving each type and source of support with each of the five domains of functioning (Brewin et al., 2007).

Pearson's correlation coefficients were used as the effect sizes, but these values first were converted into Fisher's z scale because they are not normally distributed. All effect sizes were transformed back into correlation coefficients for reporting the average effect sizes for the associations between perceived social support and the five domains of functioning. For the associations between perceived social support and risk-taking behaviors, we present the original negative correlation coefficients in the results. Yet, analyses involved the absolute magnitude of effect sizes to allow for comparisons of effect sizes for the associations between perceived social support and risk-taking behaviors versus other domains of functioning (Quintana, 2015).

Given the high heterogeneity observed among the studies included in the meta-analyses (see Table 1), we used random-effects models with restricted maximum likelihood estimators in conducting meta-analyses and meta-regressions on moderating effects, following the recommendation of Langan et al. (2019). We used Knapp–Hartung adjustments (Knapp & Hartung, 2003) to calculate the confidence interval around the pooled effect. Random-effects models assume that effects are heterogeneous—that is, the amount of variation in effect sizes is greater than sampling error alone. True study heterogeneity stems from factors such as study populations, study procedures, measures, and settings. Following Borenstein et al.'s (2021) recommendations, to ascertain heterogeneity, we used the Q-statistic (e.g., Q_w in Table 1—the within class goodness of fit statistic). Additionally, for each mean effect size, we provide the τ^2 and prediction intervals. τ^2 is insensitive to both the number of studies and their sample sizes and the prediction interval is easier to interpret than τ^2 (Table 1); both indices serve as robust measures of between-study heterogeneity.

For each of the five domains of functioning, we included a forest plot to visualize the effect sizes and CIs, with a computed summary effect size (online Supplemental Figure S5). Small effect sizes are those below .30, moderate effect sizes are between .30 and .50, and large effect sizes are above .50 (J. Cohen, 2016). In conducting meta-regressions (see Table 2), the Q_B test is used to determine if subgroup differences between mean effect sizes are significant (Borenstein et al., 2021; Harrer et al., 2021). When there are three or more groups, the Q_B test is an omnibus test, which tests the null hypothesis that effect sizes across subgroups are comparable and we conducted post hoc comparisons among means to determine which are significant (Borenstein et al., 2021; Harrer et al., 2021). Data were analyzed using R studio Version 4.0.0, with the "metafor" and "robumeta" packages Version 3.02 (Fisher & Tipton, 2015; R Core Team, 2017; Viechtbauer, 2010).

Results

Summary of Primary Studies

Summary and sample statistics of perceived social support and the five domains of thriving are presented in online Supplemental Tables S2–S4. Studies were conducted in more than 30 countries (including the United States of America, the United Kingdom, the Netherlands, Germany, Canada, Korea, Hong Kong, Israel, Indonesia, Taiwan, and Nigeria among others). Most of the study participants were from the United States of America or countries in Europe (60%; $k = 333$). We provide a descriptive summary of studies for each domain of functioning

Mental Health

There are 466 included studies with 622,161 participants. The average age of the sample for the examined studies ranged from 7 to 52, and the proportion of females ranged from 0% to 100%. One hundred twenty-six studies (59.4%) examined children and adolescents, 75 studies (35.4%) examined emerging adults, and 11 studies (5.2%) examined middle-aged and older adults. Most of the

Table 1
Associations Between Perceived Social Support and Five Domains of Human Thriving

	Perceived social support							
Domains of human thriving	k	N	r_+	95% CI	Q_{within}	I^2	τ^2 [95% CI]	Prediction interval
A. Mental health	466	622,161	.35**	[.152, .578]	48076.99**	98.80	0.042 [.044, .048]	[−0.16, 0.85]
B. Physical health	54	27,431	.24**	[.220, .617]	4510.44**	98.60	0.06 [.039, .093]	[−0.22, 0.62]
C. Risk-taking behaviors[a]	83	75,640	−.17**	[−.453, −.154]	8141.55**	97.32	0.033 [.021, .039]	[−0.45, 0.15]
D. Educational functioning	179	67,783	.21**	[.047, .454]	1833.28**	94.41	0.023 [.020, .034]	[−0.06, 0.45]
E. Work performance	232	100,884	.37	[.343, .401]	5158.18**	96.12	0.06 [.052, .071]	[−0.13, 0.59]

Note. The CI of τ^2 does not contain zero, which suggests that there is between-study heterogeneity for studies on the association of perceived social support and each of the domains of human thriving. For mental and physical health, educational functioning, and work performance, the prediction intervals indicate that future studies will find negative associations between perceived support and each of these domains of human thriving, based on evidence from the synthesized studies. Similarly for risk-taking behaviors, the prediction interval indicates that future studies will find positive associations with perceived social support. The wide intervals also indicate that moderate to large effects can be expected from future research on perceived social support and the five domains of human thriving. k = number of effect sizes; N = sample size; r_+ = sample-weighted average effect size from meta-analysis; CI = confidence interval; Q_{within} = the ratio of observed variance to within-study variance; I^2 = percentage of observed variation that can be attributed to the actual differences between studies, rather than within-study variance.

[a] Specifically for the associations between perceived social support and risk-taking behaviors, we present the original negative correlation coefficients in the results. However, analyses involved the absolute magnitude of effect sizes to allow for comparisons of effect sizes for the associations between perceived social support and risk-taking behaviors versus other domains of human thriving (Quintana, 2015).

** $p < .0001$.

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Table 2

Moderators Involving Types and Sources of Social Support on the Associations Between Perceived Social Support With Five Domains of Human Thriving

Moderator	Perceived social support			
	k	r_+	95% CI	Moderator analysis Q_B
Model 1. Domains of thriving				
Mental health	1,014	$.35_a$ (.01–.90)	[.152, .578]	125.20**
Physical health		$.24_b$ (.03–.76)	[.220, .617]	
Risk-taking behaviors		$-.17_b$ (−.76 to −.01)	[−.453, −.154]	
Educational functioning		$.21_b$ (.01–.70)	[.047, .454]	
Work performance		$.37_a$ (.01–.92)	[.343, .401]	
Model 2. Pairwise comparisons across outcomes				
Mental health versus physical health	190	$.35_a$ (.01–.90)	[.152, .578]	4.29**
		$.24_b$ (.03–.76)	[.220, .617]	
Mental health versus risk-taking behaviors	554	$.35_a$ (.01–.90)	[.152, .578]	13.78**
		$-.17_b$ (−.76 to −.01)	[−.453, −.154]	
Mental health versus educational functioning	648	$.35_a$ (.01–.90)	[.152, .578]	5.03**
		$.21_b$ (.01–.70)	[.047, .454]	
Physical health versus risk-taking behaviors	139	.24 (.03–.76)	[.220, .617]	0.78
		−.17 (−.76 to −.01)	[−.453, −.154]	
Physical health versus educational functioning	233	.24 (.03–.76)	[.220, .617]	0.28
		.21 (.01–.70)	[.047, .454]	
Educational functioning versus risk-taking behaviors	264	.21 (.01–.70)	[.047, .454]	0.41
		−.17 (−.76 to −.01)	[−.453, −.154]	
Mental health versus work performance	701	.35 (.001–.90)	[.152, .578]	0.78
		.37 (.01–.92)	[.343, .401]	
Physical health versus work performance	286	$.24_a$ (.03–.76)	[.220, .617]	14.91** (15.02**)
		$.37_b$ (.01–.92)	[.343, .401]	
Risk-taking behaviors versus work performance	317	$-.17_a$ (−.76 to −.01)	[−.453, −.154]	61.74**
		$.37_b$ (.01–.92)	[.343, .401]	
Educational functioning versus work performance	411	$.21_a$ (.01–.70)	[.047, .454]	69.65**
		$.37_b$ (.01–.92)	[.343, .401]	
Model 3. Types of social support[a]				
Mental health	447			1.79
Informational		.35 (.07–.56)	[.242, .470]	
Emotional		.34 (.01–.57)	[.092, .373]	
Instrumental		.34 (.01–.80)	[.090, .362]	
Combination		.34 (.01–.90)	[.030, .400]	
Physical health[b]				
Emotional	54	$.17_a$ (.07–.32)	[.022, .364]	11.26**
Instrumental		$.37_b$ (.07–.76)	[.089, .553]	
Combination		$.16_a$ (.03–.57)	[.010, .331]	
Risk-taking behaviors				
Informational	83	−.16 (−.26 to −.04)	[−.234, −.089]	0.15
Emotional				
Instrumental		−.16 (−.61 to −.02)	[−.331, −.010]	
Combination		−.17 (−.76 to −.02)	[−.332, −.019]	
Educational functioning				
Informational	179	.27 (.08–.52)	[.152, .400]	2.23
Emotional		.18 (.03–.57)	[.090, .438]	
Instrumental		.21 (.01–.54)	[.045, .454]	
Combination		.24 (.01–.70)	[.033, .471]	
Work performance[c]				
Informational	232			4.82
Emotional				
Instrumental		.28 (.07–.52)	[.140, .556]	
Combination		.30 (.01–.92)	[.141, .550]	
Model 4. Sources of perceived social support				
Mental health				
Parents	463	.27 (.01–.68)	[.129, .303]	1.45
Peers		.25 (.01–.09)	[.173, .322]	
Teachers and classmates[d]				
Others[e]		.25 (.01–.75)	[.164, .317]	
Physical health				
Parents	54	.30 (.03–.69)	[.192, .400]	1.39
Peers		.21 (.03–.76)	[.033, .458]	

(*table continues*)

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Table 2 (*continued*)

Moderator	Perceived social support			
	k	r_+	95% CI	Moderator analysis Q_B
Teachers and classmates[f]				
Others		.21 (.11–.57)	[.072, .500]	
Risk-taking behaviors				
Parents	82	$-.22_a$ (−.76 to −.02)	[−.273, −.181]	10.11**
Peers		$-.11_b$ (−.30 to −.01)	[−.228, −.081]	
Teachers and classmates[f]				
Others		$-.13_b$ (−.27 to −.01)	[−.292, −.026]	
Educational functioning				
Parents	178	.24 (.01–.67)	[.200, .270]	2.76
Peers		.20 (.01–.70)	[.115, .275]	
Teachers and classmates[g]				
Others		.19 (.02–.39)	[.090, .293]	
Work performance				
Parents	232	.26 (.07–.42)	[.126, .404	10.26
Peers		.28 (.01–.53)	[.174, .588]	
Teachers and classmates				
Others		.37 (.03–.74)	[.114, .632]	
Organization		.42 (.01–.92)	[.136, .690]	

Note. All effect sizes (r_+s) are significant and specifically for the associations between perceived social support and risk-taking behaviors, we present the original negative correlation coefficients in the results. However, analyses involved the absolute magnitude of effect sizes to allow for comparisons of effect sizes for the associations between perceived social support and risk-taking behaviors versus other domains of functioning (Quintana, 2015). r_+ = effect sizes (range of mean effect sizes); within each model with a significant Q_B, mean values with different subscripts differ significantly, $p < .05$; CI = confidence interval.

[a] We did not include perceived appraisal support because there are only three studies. [b] We excluded the only study involving physical health and perceived informational support. [c] For work performance, there are only two effect sizes for informational support and six effect sizes for emotional support. [d] For mental health, there were four effect sizes for teacher and/or classmate support and they were excluded, because following the guideline outlined by Borenstein et al. (2021), meta-regression involving subgroup analyses require at least $k > 10$. [e] Others refer to siblings, spouse/romantic partners, and grandparents, for example. [f] There are no studies examining perceived teachers' and/or classmates' social support. [g] There are four effect sizes for teacher and/or classmate support and they are excluded, because following the guideline outlined by Borenstein et al. (2021), meta-regression involving subgroup analyses require at least $k > 10$.

** $p < .001$.

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212 studies included were cross-sectional in design (69.3%; k = 146) and 30.7% were longitudinal (k = 65). Twelve studies with 26,446 participants examined mental health and informational support, 33 studies with 143,994 participants examined mental health and emotional support, 47 studies with 16,911 participants examined mental health and instrumental support, and 120 studies with 313,449 participants assessed mental health and a combination of types of support. In terms of sources of perceived social support, 111 studies examined parental support, 136 studies examined peer support; three studies examined teacher and/or classmate support, and 62 studies examined other sources of support (e.g., siblings, romantic partners/spouses, and grandparents).

Physical Health

There are 54 studies with 27, 431 participants. The average age of the sample for the examined studies ranged from 8 to 20 and the proportion of females ranged from 26.1% to 100%. Fourteen studies examined emerging adults (23.9%) and 13 studies examined middle and old adults (52%). Most of the 46 studies included were cross-sectional in design (80.4%; k = 37) and 20% were longitudinal (k = 9). One study involving 52 participants examined physical health and informational support; six studies with 3,276 participants examined physical health and emotional support; nine studies with 33,056 participants examined physical health and instrumental support; and 13 studies with 35,066 participants examined physical health and a combination of types of support. In terms of sources of perceived social support, 16 studies examined parental support; 19 studies examined peer support; and eight studies with 10 effect sizes examined other sources of perceived social support (e.g., siblings, romantic partners/spouses, and grandparents).

Risk-Taking Behaviors

There were 83 studies with 75,640 participants. The average age of the sample for the examined studies ranged from 12 to 22, and the proportion of females ranged from 0% to 70%. 37 studies (84.1%) examined children and adolescents and eight studies (18.2%; some studies had samples from more than one developmental stage) examined emerging adults. Most of the 44 studies included were cross-sectional in design (75%; k = 33) and 25% were longitudinal (k = 11). Eleven studies with 34,754 participants examined risk-taking behaviors and emotional support; nine studies with 31,727 participants examined risk-taking behaviors and instrumental support; 25 studies with 54,073 participants examined risk-taking behaviors and a combination of types of support. In terms of sources of perceived social support, 28 studies examined parental support; 27 studies examined peer support; and 11 studies examined other sources of perceived social support (e.g., siblings, romantic partners/spouses, and grandparents).

Educational Functioning

There are 179 studies with 67,783 participants. The average age of the sample for the examined studies ranged from 11 to 55 and the

proportion of females ranged from 18% to 100%. 81 studies (82.7%) examined children and adolescents, 14 studies (14.3%) examined emerging adults, and three studies (3.1%) examined middle to older adults. Most of the 98 studies included were cross-sectional in design (82.7%; $k = 81$) and 17.3% were longitudinal ($k = 17$). Three studies involving 6,778 participants examined educational functioning and informational support; 11 studies with 35,319 participants examined educational functioning and emotional support; 29 studies with 65,375 participants examined educational functioning and instrumental support; and 62 studies with 58,783 participants examined educational functioning and a combination of types of support. In terms of sources of perceived social support, 52 studies assessed parental support, 71 studies examined peer support, two studies examined teacher and/or classmate support, and 15 studies examined other sources of perceived social support (e.g., siblings, romantic partners/spouses, and grandparents).

Work Performance

There are 232 studies with 100,884 participants. The average age of the sample for the examined studies ranged from 15 to 52, and the proportion of females ranged from 0% to 100%. 35 studies (19.1%) examined emerging adults[5] and 116 studies (73.4%) examined middle-aged and older adults. Most of the 183 studies included were cross-sectional in design (90.7%; $k = 166$) and 9.3% were longitudinal ($k = 17$). Two studies involving 360 participants with two effect sizes examined work performance and informational support; six studies with 669 participants examined work performance and emotional support; 15 studies with 9,334 participants examined work performance and instrumental support; and 172 studies with 86,816 participants examined work performance and a combination of types of support. In terms of sources of perceived social support, 10 studies examined parental support; seven studies examined peer support; 149 studies examined organizational support (i.e., supervisor and coworker); and 38 studies examined other sources of support, such as siblings, romantic partners/spouses, and grandparents.

Comparison Across Domains

There are twice as many included studies of mental health than of the next most frequently included domain (work performance); physical health was the focus of the fewest included studies. The average age of the samples ranged from childhood to adulthood for all five domains, but the average age of the samples for physical health risk-taking behaviors extended only into early adulthood (compared with midlife for the other domains), and the average age of the samples for work performance was slightly older than the average age of the samples for the other domains. Most of the studies in all five domains were cross-sectional, ranging from 69% of the mental health studies to 90% of the work performance studies.

Associations Between Perceived Social Support and Five Domains of Functioning

Across our meta-analyses and meta-regressions on moderating effects, I^2 ranges from 92.61 to 98.79. For Hypotheses 1a to 1e, results are listed in Table 1.[6] For Hypothesis 1a, we synthesized 466 effect sizes from 212 studies that examined the associations between perceived social support and mental health and found a moderate positive association (Table 1, Row A). For Hypothesis 1b, we synthesized 54 effect sizes from 46 studies that examined the associations between perceived social support and physical health and found a small positive association (Table 1, Row B). For Hypothesis 1c, we synthesized 83 effect sizes from 44 studies that examined the associations between perceived social support and risk-taking behaviors and found a small negative association (Table 1, Row C). For Hypothesis 1d, we synthesized 179 effect sizes from 98 studies that examined the associations between perceived social support and educational functioning and found a small positive association (Table 1, Row D). For Hypothesis 1e, we synthesized 232 effect sizes from 183 studies that examined the associations between perceived social support and work performance and found a moderate positive association (Table 1, Row E). For RQ1f, Q_B analyses comparing the effect sizes for the associations between perceived social support and each of the five domains of functioning revealed that they differed significantly; differences are listed in Table 2, Model 1. The association between perceived social support and mental health was similar to that between perceived social support and work performance, and both of these associations were higher than those for the other domains of functioning—physical health, risk-taking behaviors, and educational functioning (Table 2, Model 2). The associations between perceived social support and physical health did not differ from those for risk-taking behaviors (Table 2, Model 2) or educational functioning (Table 2, Model 2).

Types and Sources of Perceived Social Support

We performed subgroup analyses using meta-regressions to examine types (RQ1g) and sources (RQ1h) of perceived social support as moderators for each of the five domains of functioning separately. We examined types of support (emotional, instrumental, informational, and a combination of different types of support) and sources of support (parents, peers, teachers and/or classmates, and others that included romantic partner/spouses, siblings, and grandparents) as separate moderators (Table 2). There were insufficient studies for subgroup analyses.

Mental Health

Neither types nor sources of perceived social support moderated the association between support and mental health. Specifically, perceived instrumental, informational, emotional, and combined types of support (Table 2, Model 3), as well as perceived social support provided by parents, peers, teachers and/or classmates, and others related similarly to mental health (Table 2, Model 4).

[5] There were two studies that included samples comprising both adolescents and emerging adults, but did not specify the sample size separately.

[6] We examined and controlled for individuals' current level of functioning as a covariate because it can moderate the associations between perceived social support and domains of functioning (Leskelä et al., 2006; H. H. Wang et al., 2003). For instance, more depressive symptoms can hinder social interactions and relationships, and attenuate the positive associations between perceived social support and mental and physical health (Leskelä et al., 2006; H. H. Wang et al., 2003). Our meta-regression revealed that individuals' current level of functioning was not a confound and did not moderate the associations between perceived social support and any of the five domains of functioning.

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Physical Health

In contrast, different types (Table 2, Model 3) but not sources of perceived social support (Table 2, Model 4) moderated the association between support and physical health. Instrumental support ($r_+ = .37$) demonstrated the largest association with physical health with a moderate positive mean effect size, whereas emotional ($r_+ = .17$) and combined ($r_+ = .16$) types of support had small positive associations with physical health.

Risk-Taking Behaviors

In an opposite pattern to that found with physical health, different sources (Table 2, Model 4) but not types (Table 2, Model 3) of perceived social support moderated the association between support and risk-taking behaviors. Parental support ($r_+ = -.25$) and other sources of support ($r_+ = -.13$) had similar small negative associations with risk-taking behaviors, which were larger than the association between peer support and risk-taking behaviors ($r_+ = -.09$). There were no studies examining teachers' and/or classmates' social support and risk-taking behaviors.

Educational Functioning

Similar to mental health, neither types nor sources of perceived social support moderated the association between support and educational functioning. Specifically, instrumental, informational, emotional, and combined types of support (Table 2, Model 3), as well as support from parents, peers, teachers and/or classmates, and others (Table 2, Model 4), related similarly to educational functioning.

Work Performance

Sources but not types of perceived social support moderated the association between support and work performance.[7] Specifically, perceived instrumental, informational, emotional, and combined types of support related similarly to work performance (Table 2, Model 3). In contrast, organizational support (i.e., coworker and supervisor; $r_+ = .42$) and other sources of support ($r_+ = .37$) had similar moderate positive associations with work performance, which were larger than the low associations between family ($r_+ = .26$) and peer support ($r_+ = .28$) and work performance. There were no studies examining teachers' and/or classmates' social support and work performance.

Age, Gender, and Culture

Table 3 shows the results from our analyses on moderator effects of age, gender, and culture. Following the guideline outlined by Borenstein et al. (2021), meta-regression involving subgroup analyses requires at least k (effect size) >10. Average age of the sample (studies that provided ranges of age or grade level were excluded; RQ2a) and gender (i.e., average proportion of sample participants who were female; RQ2b) of support recipients were used as continuous predictors in testing their moderating effects. Studies included in the meta-analyses involved more than 30 countries, but there were not enough studies in each country to allow for a comparison of effect sizes among individual countries. Instead, we followed the common approach of comparing Western and non-Western cultures (e.g., Krendl & Pescosolido, 2020; Miyamoto & Ryff, 2022; RQ2c). There were also insufficient effect size estimates from African countries (six studies with 10 effect sizes that examined perceived social support in relation to mental health and educational functioning). Thus, we did not include these cultural contexts. Representatives of Western cultures included Australia, Canada, Germany, the Netherlands, the United Kingdom, and the United States; representatives of non-Western cultures included China, Hong Kong, Singapore, and Taiwan.

Mental Health and Physical Health

Gender (i.e., the proportion of females in studies; Table 3, Model 1) and age (Table 3, Model 2) of support recipients and cultural contexts (Table 3, Model 3) did not moderate the association between perceived social support and mental health. Age of support recipients moderated the association between perceived social support and physical health (Table 3, Model 2), such that the association between support and physical health decreased with older support recipients. In contrast, gender of support recipients (Table 3, Model 1) and cultural contexts (Table 3, Model 3) did not moderate the association between support and physical health.

Risk-Taking Behaviors

Age of support recipients moderated the association between perceived social support and risk-taking behaviors (Table 3, Model 2). Specifically, the negative association between support and risk-taking behaviors decreased with increasing age of support recipients. In contrast, gender of support recipients (Table 3, Model 1) and cultural contexts (Table 3, Model 3) did not moderate the association between support and risk-taking behaviors.

Educational Functioning

Gender (Table 3, Model 1) and age (Table 3, Model 2) of support recipients did not moderate the association between perceived social support and educational functioning. Nonetheless, the association between perceived social support and educational functioning differed across Western and non-Western cultural contexts (Table 3, Model 3), with a larger effect size in non-Western ($r_+ = .34$) than Western ($r_+ = .21$) contexts.

Work Performance

Gender (Table 3, Model 1) and age (Table 3, Model 2) of support recipients did not moderate the association between perceived social support and work performance. Yet, the association between perceived social support and work performance differed across Western and non-Western cultural contexts (Table 3, Model 3), with a larger effect size in Western ($r_+ = .33$) than non-Western ($r_+ = .24$) contexts.

Temporal Ordering and Timing of Associations

For RQ3, using longitudinal studies, we examined the temporal ordering and timing of associations between perceived social support and each of the five domains of functioning. We use meta-regressions

[7] Because perceived organizational support is an important source of support predicting work performance, we included this source of support for this outcome specifically (Eisenberger et al., 1986).

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Table 3

Moderators Involving Gender, Developmental Stage, and Cultural Contexts on the Associations Between Perceived Social Support and Five Domains of Human Thriving

Moderator	Perceived social support			
	k	r_+	95% CI	Moderator analysis Q_B[a]
Model 1. Percentage (%) of females				
1. Mental health	388	.001 (.01–.80)	[−.001, .236]	1.71
2. Physical health	40	.002 (.03–.76)	[−.014, .000]	0.54
3. Risk-taking behaviors	71	.001 (.01–.63)	[−.000, .000]	0.25
4. Educational functioning	161	.001 (.01–.70)	[−.000, .000]	1.12
5. Work performance	193	−.001 (.01–.92)	[−.000, .000]	0.57
Model 2. Developmental stage				
Mental health				
Children	388	.31 (.01–.74)	[.154, .275]	0.98
Adolescents		.37 (.01–.80)	[.153, .547]	
Emerging adults		.33 (.01–.75)	[.211, .593]	
Adults		.32 (.01–.50)	[.152, .284]	
Physical health				
Children	38	$.45_a$ (.11–.76)	[.171, .940]	3.54*
Adolescents		$.58_b$ (.03–.49)	[.122, .654]	
Emerging adults		$.39_c$ (.05–.57)	[.100, .514]	
Adults		$.32_c$ (.11–.54)	[.114, .628]	
Risk-taking behaviors				
Children	50	$-.58_a$ (−.71 to −.05)	[−.732, −.181]	4.55*
Adolescents		$-.61_a$ (−.76 to −.01)	[−.904, −.127]	
Emerging adults		$-.19_b$ (−.21 to −.02)	[−.338, −.111]	
Adults		$-.10_b$ (−.37 to −.18)	[−.324, −.088]	
Educational functioning				
Children	95	.25 (.03–.55)	[.154, .342]	1.30
Adolescents		.23 (.01–.70)	[.122, .354]	
Emerging adults		.21 (.01–.52)	[.119, .374]	
Adults		.22 (.17–.41)	[.111, .327]	
Work performance[b]				
Emerging adults	123	.50 (.14–.92)	[.374, .622]	2.55
Adults		.34 (.01–.81)	[.086, .603]	
Model 3. Cultural contexts				
Mental health				
Western	445	.34 (.01–.80)	[.323, .366]	2.64
Non-Western		.38 (.02–.90)	[.315, .460	
Physical health				
Western	54	.27 (.03–.76)	[.203, .347]	1.37
Non-Western		.18 (.03–.54)	[.030, .401]	
Risk-taking behaviors				
Western	82	−.17 (−.76 to −.01)	[−.211, −.139]	0.29
Non-Western		−.14 (−.45 to −.05)	[−.300, −.026]	
Educational functioning				
Western	179	$.21_a$ (.01–.70)	[.183, .23]2	5.74**
Non-Western		$.34_b$ (.01–.52)	[.176, .501]	
Work performance				
Western	292	$.33_a$ (.03–.72)	[.281, .380]	8.20**
Non-Western		$.41_b$ (.01–.92)	[.297, .536]	

Note. Within each model with a significant Q_B, mean values with different subscripts differ significantly, $p < .05$. r_+ = effect sizes (range of mean effect sizes); all mean effect sizes (r_+s) are significant; CI = confidence interval.

[a] These values are continuous models for percentage of females but categorical for the others. [b] There are no studies examining children and adolescents.

* $p < .05$. ** $p < .001$.

to compare the following temporal ordering (Table 4): (a) prospective associations wherein perceived social support predicts subsequent functioning (e.g., T1 perceived social support with T2 functioning; Table 4 Model 1; for instance, support predicts mental health); (b) prospective associations wherein functioning predicts subsequent perceived social support (e.g., T1 functioning with T2 perceived social support; Table 4 Model 1; for instance, mental health predicts support); and (c) repeated concurrent associations between perceived social support and functioning (e.g., T1 perceived social support with T1 functioning; Table 4, Model 1). For timing of associations, the duration between assessments of perceived social support and functioning was examined as a moderator of the association between

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Table 4

Moderators Involving Temporal Ordering and Timing of Associations Between Perceived Social Support and Five Domains of Human Thriving

Moderator	Perceived social support			
	k	r_+	95% CI	Moderator analysis Q_B
Model 1. Temporal ordering[a]				
Mental health				
Mental health predicts support	464	$.17_a$ (.02–.40)	[.037, .259]	23.69**
Support predicts mental health		$.16_a$ (.01–.48)	[.089, .252]	
Concurrent association		$.29_b$ (.01–.90)	[.261, .301]	
Physical health				
Physical health predicts support	51			0.48
Support predicts physical health		.25 (.02–.76)	[.222, .478]	
Concurrent association		.27 (.02–.76)	[.193, .333]	
Risking-taking behaviors				
Behaviors predict support	83	−.15 (−.19 to −.10)	[−.351, −.045]	0.06
Support predicts behaviors		−.16 (−.28 to −.01)	[−.304, −.022]	
Concurrent association		−.17 (−.76 to −.01)	[−.214, −.132]	
Educational functioning				
Functioning predicts support	179	.16 (.18–.45)	[.130, .398]	1.21
Support predicts functioning		.19 (.00–.42)	[.092, .281]	
Concurrent association		.22 (.01–.70)	[.190, .240]	
Model 2. Timing of associations				
1. Mental health	193	.10 (.01–.74)	[−.101, .200]	0.04
2. Physical health[b]				
3. Risk-taking behaviors	26	−.09 (−.28 to −.02)	[−.111, .100]	0.46
4. Educational functioning	39	.15 (.00–.54)	[.090, .213]	4.77*
5. Work performance	34	.01 (.07–.77)	[−.010, .000]	0.56
Model 3. Existing conditions[c]				
1. Mental health	187	.10 (.01–.74)	[−.190, .210]	0.01
2. Physical health	11	.12 (.03–.29)	[−.203, .340]	0.03
3. Risk-taking behaviors	17	.10 (.01–.28)	[−.192, .300]	0.03
4. Educational functioning	22	.11 (.00–.45)	[−.197, .240]	0.02
5. Work performance	14	.10 (.23–.77)	[−.137, .287]	0.06

Note. Within each model with a significant Q_B, mean values with different subscripts differ significantly, $p < .05$. r_+ = effect sizes (range of mean effect sizes); all mean effect sizes (r_+s) are significant; CI = confidence interval.

[a] There are eight effect sizes for concurrent associations, nine effect sizes on perceived social support predicting work performance, and six effect sizes on work performance predicting perceived social support. Following the guideline outlined by Borenstein et al. (2021), meta-regression involving subgroup analyses require at least $k > 10$, hence moderator analysis was not conducted for temporal association between work performance and perceived social support. [b] There are only eight effect sizes, and following the guideline outlined by Borenstein et al. (2021), meta-regression involving subgroup analyses require at least $k > 10$. [c] We examined and controlled for individuals' existing level of functioning as a covariate because this condition can moderate the associations between perceived social support and functioning (Leskelä et al., 2006; H. H. Wang et al., 2003). For instance, greater existing depressive symptoms can hinder social interactions and relationships and attenuate the positive associations between perceived social support and mental and physical health (Leskelä et al., 2006; H. H. Wang et al., 2003). Our meta-regression revealed that individuals' existing level of functioning was not a confound and did not moderate the associations between perceived social support and each of the five domains of functioning.

* $p < .05$. ** $p < .001$.

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perceived social support and each domain of functioning using meta-regressions.

Mental Health

The magnitude of effect sizes for the three temporal orderings of associations between perceived social support and mental health was significantly different (Table 4, Model 1). The concurrent association between stronger support and better mental health (r_+ = .29) was greater than the prospective association between better mental health and subsequent stronger support (r_+ = .17) and the prospective association between stronger support and subsequent better mental health (r_+ = .16). The duration between perceived social support and mental health assessments did not significantly moderate their association (Table 4, Model 2). These findings suggest that individuals' perceived experience of high social support has greater concurrence than prospective positive mental health implications. Moreover, the tendency for perceived social support to predict subsequent mental health and the reverse do not attenuate over time.

Physical Health

There were no studies that investigated the prospective association between better physical health and subsequent stronger perceived social support. The magnitude of effect sizes for the other two temporal orderings of associations between perceived social support and physical health was comparable (Table 4, Model 1).

Specifically, the concurrent association between stronger support and better physical health ($r_+ = .27$) was not significantly different from the prospective association between stronger support and subsequent better physical health ($r_+ = .25$). These findings suggest that individuals' perceived experience of high social support has similar concurrent and prospective positive physical health implications.[8]

Risk-Taking Behaviors

The magnitude of effect sizes for the three temporal orderings of associations between perceived social support and risk-taking behaviors was comparable (Table 4, Model 1). Specifically, the concurrent association between stronger support and lower risk-taking behaviors ($r_+ = -.17$) was not significantly different from the prospective association between stronger support and subsequent lower risk-taking behaviors ($r_+ = -.16$) or the prospective association between lower risk-taking behaviors and subsequent stronger support ($r_+ = -.15$). The duration between perceived social support and risk-taking behavior assessments did not significantly moderate their association (Table 4, Model 2). These findings suggest that individuals' perceived experience of high social support has similar concurrent and prospective implications for lower risk-taking behaviors. The tendency for perceived social support to predict subsequent risk-taking behaviors, and the reverse, does not attenuate over time.

Educational Functioning

The magnitude of effect sizes for the three temporal orderings of associations between perceived social support and educational functioning was comparable (Table 4, Model 1). Specifically, the concurrent association between stronger support and better educational functioning ($r_+ = .22$) was not significantly different from the prospective association between stronger support and subsequent better educational functioning ($r_+ = .19$) or the prospective association between better educational functioning and subsequent stronger support ($r_+ = .16$). The duration between perceived social support and educational functioning assessments significantly moderated their association (Table 4, Model 2). These findings suggest that individuals' perceived experience of high social support has similar concurrent and prospective positive implications for educational functioning. The tendency for perceived social support to predict educational functioning and the reverse attenuated over time.

Work Performance

There was not a sufficient number of effect sizes to compare the three temporal orderings of associations between perceived social support and work performance. The tendency for perceived social support to predict subsequent work performance and the reverse do not attenuate over time (Table 4, Model 2).

Publication Bias Analysis

For each domain of functioning separately, three analyses were used to ascertain publication bias and are presented in online Supplemental Figure S6. The funnel plot analyses reveal possible publication bias that is evident by a cluster of data that is nonsymmetrical and deviates from the shape of a funnel. Because funnel plots offer only a subjective measure of potential publication bias (Egger & Smith, 1998), we also used the Egger's regression and the rank correlation tests, which are objective measures of potential bias (Egger & Smith, 1998). The regression tests for the funnel plot asymmetry were not significant for any of the domains: mental health ($z = 0.97$, $p = .33$), physical health ($z = 0.74$, $p = .50$), risk-taking behaviors ($z = -1.40$, $p = .16$), educational functioning ($z = 2.08$, $p = .05$), and work performance ($z = -0.33$, $p = .74$). The rank correlation tests were nonsignificant for mental health (Kendall's $\tau = .003$, $p = .41$), educational functioning (Kendall's $\tau = .08$, $p = .13$), and work performance (Kendall's $\tau = .0165$, $p = .71$), but were significant for physical health (Kendall's $\tau = .32$, $p = .01$) and risk-taking behaviors (Kendall's $\tau = .203$, $p = .01$). Thus, our results suggest an absence of publication bias for studies of mental health and educational functioning but potential publication bias for studies of physical health and risk-taking behaviors. We also conducted the trim and fill procedure by removing studies with small effect sizes and high standard errors; this procedure imputes the missing studies to create a more symmetrical funnel plot. We provide the trim and fill funnel plot and estimates in online Supplemental Figure S7a and Tables S7b and S7c. These analyses suggest an absence of publication bias for studies included in our meta-analyses.

Discussion

Perceived social support has been hailed as a crucial resource in bolstering functioning across diverse domains (Coyle & Malecki, 2018). In the real world, individuals perceive different types and sources of social support—a notion supported by key theoretical frameworks on social support (e.g., Tardy, 1985). Despite more than five decades of research examining the implications of perceived social support for human thriving as gauged by mental and physical health, risk-taking behaviors, educational functioning, and work performance, many of the conclusions drawn were based on examining one specific type of perceived social support and/or a composite of different types of perceived social support in relation to one or two domains of functioning. For sources of perceived social support, findings are more well-established with existing meta-analyses and reviews distinguishing the associations between different sources of perceived support and specific domains of functioning for children and adolescents—specifically their mental health and educational functioning. Until now, there has been no published systematic review and quantitative synthesis of findings across studies to draw conclusions about how different types and sources of support relate to different domains of thriving—specifically, mental and physical health, risk-taking behaviors, educational functioning, and work performance.

Associations Between Perceived Social Support and Five Domains of Thriving

The present meta-analysis revealed that perceived social support has the largest associations with mental health and work performance

[8] We did not investigate the duration between the social support and physical health assessments as a moderator because there are only eight effect sizes, and following the guideline outlined by Borenstein et al. (2021), meta-regression involving subgroup analyses requires at least k (effect size) >10.

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as reflected in moderate effect sizes. These associations are significantly larger than the associations between support and physical health, risk-taking behaviors, and educational functioning; the small effect size for the associations between support and physical health, risk-taking behaviors, and educational functioning did not differ significantly. Our findings are consistent with those from existing meta-analyses examining combined received and perceived social support and health functioning across the lifespan (H. H. Wang et al., 2003) and support theories suggesting that perceiving higher levels of social support improves mental health, such as stress response theories (V. H. Rice, 2012). Our findings also are consistent with reviews and meta-analyses that examined perceived social support and specific domains of functioning, which generally show larger effect sizes for mental health than physical health (H. H. Wang, 1998; H. H. Wang et al., 2003), risking-taking behaviors, and educational functioning (a prior meta-analysis focused on children and adolescents; P. S. Chu et al., 2010).

Despite these consistencies, previous meta-analyses provided limited understanding of the role of perceived social support that stem from several constraints: (a) not distinguishing received and perceived social support, (b) focusing on one or two specific domains of functioning, given the lack of a theoretical approach in systematically considering different domains of functioning associated with perceived social support, and (c) examining a specific or composite type and/or source of perceived social support variable, with the exception of three meta-analyses. Meta-analyses that distinguished sources of support examined one domain of functioning during a specific developmental stage, particularly mental health and educational functioning among children and adolescents (Rueger et al., 2010, 2016). Our meta-analyses addressed these limitations by using a theoretically informed approach based on quality of life theories (Cummins, 2000, 2016) to consider multiple domains of thriving. Additionally, we focused specifically on perceived social support and distinguished the roles of different types and sources of support in their associations with five domains of thriving across the lifespan and across different cultural contexts.

Collectively, findings from our study and those from the literature suggest that in a practical sense, individuals' perceptions of support that is available when needed may be more proximal and thus important, to bolstering their mental health and work performance and more distal to enhancing physical health, reducing risk-taking behaviors, and improving educational functioning. In other words, perceived social support may be associated with physical health, risk-taking behaviors, and educational functioning through possible factors such as holding positive health beliefs and behaviors or using effective regulation and learning strategies (H. H. Wang et al., 2003). Yet, more insight can be gained into the differences in the associations between perceived social support and the five domains of thriving by examining variation in associations contingent on the types and sources of support.

Types and Sources of Perceived Social Support

Prior research on perceived social support has been limited by its reliance on composite measures that fail to distinguish various types and sources of perceived social support (e.g., Coyle & Malecki, 2018; Machell et al., 2016). A primary goal of this meta-analysis was to examine whether specific types of perceived support (informational, emotional, instrumental, and appraisal; RQ1g) or support from specific sources (parents, peers, teachers/classmates, others, and organization; RQ1h) were associated with specific domains of thriving. Results of the meta-analysis revealed that types but not sources of support moderated the associations between perceived social support and physical health. Specifically, instrumental support had the largest association with physical health as reflected in a moderate effect size; this association was significantly larger than the association between emotional support and combined types of support with physical health. Optimizing physical health requires access to material and practical resources for maintaining health or addressing health-related issues (e.g., adherence to medication and benefits of certain lifestyle choices; Curtis & Kaugars, 2022). Thus, the perception that having access to a social network that can provide practical assistance is likely to have important benefits for physical health.

In contrast, the source but not the type of perceived social support moderated the association between support and risk-taking behavior. Most notably, parental support was most strongly associated with less engagement in risky behavior. This finding is consistent with extensive research establishing that authoritative forms of parental involvement (e.g., monitoring of activities and strong communication) protect individuals against risky behavior (Lansford et al., 2021). The association between peer support and risk-taking behavior was relatively small, perhaps reflecting the fact that close relationships with peers may enhance or dampen engagement in risky behaviors depending on the composition of peer networks (e.g., prosocial vs. deviant peers; B. B. Brown & Larson, 2009).

Similarly, the source but not the type of support moderated the association between support and work performance. Specifically, organizational support from coworkers or supervisors and from others showed a larger association with work performance than support offered by family and peers. This pattern of findings suggests that support from those more embedded in the workplace, who likely understand the various stressors associated with that environment and are able to provide helpful training or tips for improvement, is more helpful for maximizing work performance (Viswesvaran et al., 1999) than support from those more distal who may not fully understand the requirements for effective work performance.

Neither the types nor the sources of perceived social support moderated the associations between support and mental health or educational functioning. Different types of support may be equally useful for optimizing mental health and achieving strong educational functioning (e.g., Coyle & Malecki, 2018). Moreover, various significant others can provide these types of perceived support. For example, in the mental health domain, the perception of support from parents, peers, and romantic partners can promote positive mental health (e.g., Pool et al., 2022). Likewise, individuals perceive that parents, peers, and teachers/classmates can support different aspects of educational functioning at home and at school (e.g., Kaynak et al., 2023).

Overall, congruent with Tardy's (1985) social support model, the meta-analysis yielded nuanced findings by distinguishing how types and sources of perceived social support are associated with different domains of thriving, at least in the realms of physical health, risk-taking behaviors, and work performance. Whereas different types and sources of support apply similarly in enhancing mental health and educational functioning, the patterns of associations underscore the need to distinguish types of support for physical health and sources of support for risk-taking behaviors and work performance.

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Our analyses revealed an overall small effect size for the association between perceived social support and physical health, but a more nuanced conceptual approach that distinguished the different types of support found a moderate effect size for instrumental support. Similarly for risk-taking behaviors, there was an overall small effect size for the association with perceived social support, but comparing the different sources of support revealed a moderate effect size for parental support. For work performance, comparing the different sources of support revealed that the overall moderate effect size for the association with perceived social support held for support from coworkers and others, but support from family and peers had only small effect sizes.

From a practical standpoint, these findings suggest that perceived social support has important implications for different domains of life functioning. Because theories of social support generally, including Tardy's model of social support, are rooted in psychology and organizational performance, there is a better understanding of aspects of social support for improving psychological and work outcomes (e.g., Cummins, 2000, 2016)—specifically, mental health and work performance, but only instrumental support relates to better physical health in a similar fashion.

Moderating Factors

We tested the consistency of associations between perceived social support and each of the five domains of thriving by examining age of the support recipients, gender of the support recipients, and cultural contexts as potential moderators of the associations (RQ2a to 2c). These analyses revealed several differences in relations between perceived social support and thriving contingent on the age of participants and their culture, but not their gender.

Age of the support recipients moderated the association between perceived social support and better physical health, such that the link was larger for children and adolescents than for adults. Because children and adolescents are still developing self-regulatory skills, they may rely more heavily on others to encourage engagement in health-promoting behaviors (e.g., Kwon & Wickrama, 2014), resulting in an especially large association between perceived social support and physical health during these life stages. Similarly, the association between perceived social support and lower risk-taking behaviors was larger for children and adolescents than adults. Risk-taking behaviors peak during adolescence (Albert et al., 2013), which may account for the larger association between perceived social support and risk-taking behaviors during adolescence than during adulthood.

Although cultural context did not moderate the associations between perceived social support and mental health, physical health, or risk-taking behaviors, it did moderate the association between perceived social support and educational functioning, with a larger effect in non-Western and collectivistic than Western and individualistic cultures. The findings related to educational functioning are consistent with literature on cultural differences in emphasis on educational endeavors (Marginson, 2011). For example, *guan* (a form of parental training emphasizing strictness and academic achievement) characterizes Asian and collectivistic cultures (Chao, 1994). In these cultures, parents are viewed as being responsible for providing guidance and support to ensure their children's academic success. Indeed, studies show that parents in Asian and collectivistic cultures provide significant support for their children's educational endeavors, such as providing them with tutoring outside of school and monitoring their academic progress and learning trajectories (Marginson, 2011). Asian children, in turn, perceive that disclosure to parents about the educational domain is important for soliciting such support (Yeo & Tong, 2024). The pressure to achieve also stems from the cultural notion of children's filial piety—attaining academic excellence to honor their parents in return for their educational support (Yeo & Tong, 2024). Additionally, there is much societal emphasis on getting into the best schools and universities possible (Marginson, 2011).

In contrast, the association between perceived social support and work performance was larger in Western and individualistic cultures than non-Western and collectivistic cultures. It is possible that individuals in the latter type of culture do not benefit as much from social support in the work context because they view needing support from others outside of the family as a potential inconvenience to be avoided and are reluctant to acknowledge their concerns or to put their own needs above those of others (W. Q. Chen et al., 2009).

Temporal Ordering and Timing of Associations

We were able to capitalize on the availability of longitudinal studies in the meta-analyses to examine the temporal ordering between perceived social support and the five domains of thriving (RQ3). Generally, the strength of the concurrent and prospective associations between perceived social support and thriving was comparable, with the exception that the concurrent association between greater perceived social support and better mental health was larger than the prospective association. Moreover, the strength of prospective associations between perceived social support and four of the five domains of thriving (mental health, physical health, risk-taking behavior, and work performance) remained consistent over time. The prospective association between perceived social support and educational functioning attenuated with increasing duration, which is congruent with empirical studies documenting that temporally proximal supportive behaviors from social network members play an important role for improving educational functioning (Tamis-LeMonda & Lockman, 2023).

These findings suggest that when conceptualizing the benefits of perceived social support for promoting mental and physical health, preventing risk-taking behaviors, and improving educational functioning and work performance, it is equally important to consider how these domains of thriving affect the kinds of social support that people perceive they are offered and can access. For example, people who are mentally and physically healthy and perform better at work are more likely to perceive and elicit positive social relationships and to be able to play an active role in their social networks (Calderón-Larrañaga et al., 2019). Similarly, through processes that reflect both selection and influence (Brechwald & Prinstein, 2011), people who engage in risk-taking behaviors and struggle in school are more likely to affiliate with others who also engage in risk-taking behaviors (Kornienko et al., 2020) and struggle in school (Smirnov & Thurner, 2017), respectively. These social partners who are engaged in risk-taking behaviors and struggle in school may be perceived as less well-positioned to provide social support. Thus, perceived social support is a resource that can promote positive functioning across life domains both in the short term and the

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long term, but functioning across life domains also affects the social support that people perceive they can access.

Limitations

Our review and meta-analysis has four primary limitations. First, in examining age and gender as moderators, we used population-level information because correlational studies typically include population level instead of individual-level data. Using population-level data can result in ecological fallacy if inferences about individuals are made based on data collected at the group level (Thompson & Higgins, 2002); associations between perceived social support and functioning using participant averages across studies may not be the same as the associations for participants within studies. For example, we examined the moderating effect of proportion of females in the sample and found that studies with more women did not indicate larger associations between perceived social support and functioning. Still, without individual-level data, we are not able to examine how the associations compare across women and men because few studies investigate gender differences, and it is not clear if females or males indicate greater associations between perceived social support and functioning.

Second, when examining cultural differences, we grouped countries as a proxy variable to reflect Western and individualistic versus non-Western and collectivistic cultural contexts. Because studies examining associations between perceived social support and functioning have not included explicit measures of cultural attitudes, such as individualism and collectivism or independent and interdependent self-construals, we were unable to directly examine the moderating effects of cultural perspectives.

Third, in examining publication bias, we used rank correlation and Egger's regression test, which are based on relatively strong and untestable assumptions about publication bias, as compared with the alternative of using direct selection based on p values with an approach like P curve. Fourth, the criteria for inclusion in the review may have biased the sample of primary studies toward those focusing on children or adolescents because these studies were more likely to report relations between types and sources of perceived support and outcomes. The findings should be considered in light of these limitations.

Our review and meta-analysis also highlights four major limitations in the broader literature on perceived social support and human thriving. First, existing literature provided limited understanding of the role of perceived social support because many studies do not distinguish between received and perceived social support. Second, most studies focus on specific domains of functioning rather than systematically assessing different domains of functioning associated with perceived social support (Rueger et al., 2016, 2022). Third, prior studies usually examined a specific type of social support or else they examined composites of types and/or sources of perceived social support. There are three meta-analyses that are exceptions, distinguishing sources of support and one domain of thriving during a specific developmental stage, particularly mental health and educational functioning among children and adolescents (Rueger et al., 2010, 2016, 2022). Finally, prior research did not systematically consider possible individual (age and gender) and contextual (cultures) moderators of the associations between perceived social support and different domains of thriving across the lifespan.

Implications of the Present Research

We recommend that future research considers how various types and sources of perceived social support are associated with different domains of thriving for different individuals across the lifespan and cultural contexts. For instance, there may be developmental and cultural specificity in terms of how strongly perceived social support is associated with specific domains of thriving. In particular, social support is more strongly associated with lower risk-taking behaviors (e.g., Semenza & Gentina, 2023) and better physiological functioning (Uchino et al., 1996) during adolescence and is more strongly associated with educational functioning in non-Western than in Western cultures, but with work performance in Western than in non-Western cultures.

Collectively, our findings make important theoretical and practical contributions. For theory-building, our findings expand Tardy's (1985) social support model in four ways. First, our meta-analyses include a systematic approach to examining outcomes associated with perceived social support, namely considering different domains of human thriving that contribute to positive quality of life. Second, our analyses lend credence to theoretical distinctions between different types and sources of support, which have different patterns of associations with various domains of thriving. For sources of support, we build on previous meta-analyses by examining differences in associations across the lifespan.

Third, although previous meta-analyses have examined gender differences, they are primarily focused on perceived social support among children and adolescents, and our meta-analysis considered ages across the lifespan, together with insights into age and cultural differences in the associations between perceived social support and functioning across various life domains. Finally, with accumulating research from longitudinal studies, there is a need to expand Tardy's model to incorporate temporal ordering and timing of associations between perceived social support and functioning, particularly for the domain of work performance as there were a limited number of studies, rendering investigation of the temporal ordering of associations impossible. To this end, our study provides insights into possible developmental cascades and the extent to which these cascades are maintained or attenuated over time (Tamis-LeMonda & Lockman, 2023).

In terms of clinical practice, our findings can inform the design and implementation of comprehensive interventions targeting perceived social support. In particular, our study found that individuals' initial level of functioning did not moderate the association between perceived social support and each of the five domains of thriving. Thus, regardless of individuals' initial state of mental and physical health, risk-taking behaviors, educational functioning, or work performance, perceived social support can be an integral component of clinical, educational, and work interventions. For instance, clinical interventions involving cognitive-behavioral therapy for patients with depression can benefit from including a component involving bolstering individuals' support networks. Work interventions that bolster organizational support, specifically support from supervisors and coworkers, may help improve work performance, including lower work absenteeism and greater job satisfaction.

Furthermore, clinical interventions targeting physical health, such as obesity and diabetes, can focus on the perception of instrumental support. For example, doctor–patient interactions involving practical assistance, such as providing access to material and practical

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resources for maintaining health or addressing health-related issues (e.g., adherence to medication; Curtis & Kaugars, 2022) may have benefits for patients' physical health. Moreover, interventions also should consider that adolescents, in particular, can benefit from perceived social support for improving physical health and reducing risk-taking behavior, particularly involving parental support for the latter domain of functioning. More generally, our findings can aid policy makers, health professionals, and social service providers in establishing high-performing social support networks. Promoting the availability of support individuals perceive as a resource can help to bolster thriving across life domains to contribute to positive quality of life.

Conclusions

Overall, our systematic review and meta-analysis underscores the importance of distinguishing types and sources of perceived social support when examining their associations with different domains of thriving for different individuals across the lifespan and cultural contexts. In particular, different types and sources of support apply similarly in enhancing mental health and educational functioning. In contrast, the patterns of associations underscore the need to distinguish types of support for physical health and sources of support for risk-taking behaviors and work performance. Additionally, there may be developmental and cultural specificity in terms of the extent to which perceived social support is more strongly associated with specific domains of thriving. For example, for adolescents, perceived support from parents is particularly important for reducing risk-taking behaviors. Overall, perceived social support had strong associations with better mental health and was also related to better physical health, fewer risk-taking behaviors, better educational function, and better work performance. Initial levels of functioning did not moderate associations between perceived social support and these five domains of thriving, suggesting that bolstering perceived support can be an important part of clinical, educational, and workplace interventions, regardless of individuals' initial risk.

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Received May 1, 2024
Revision received July 29, 2025
Accepted August 8, 2025 ■

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