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Peer Education to Promote the Social Acceptance of Autistic Students in Inclusive Education Settings: A Narrative Review

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Abstract

Inclusive educational placement alone does not necessarily mean that autistic students will experience social acceptance, meaningful participation, or reciprocal peer relationships. This narrative review examined how peer education may contribute to the social acceptance of autistic students in inclusive education settings. Three areas were addressed: the conceptualization of peer knowledge, attitudes, and behavioral intentions; the theoretical foundations and types of information underpinning peer education; and common patterns and differences in the characteristics and reported outcomes of structured programs. The literature was identified through iterative Google Scholar searches using English and Turkish terms, with the final search conducted in August 2026. Relevant peer-reviewed empirical, theoretical, conceptual, and review publications were comparatively examined and narratively synthesized in relation to the guiding questions. The synthesis indicates that knowledge, attitudes, and behavioral intentions are related yet distinct dimensions of peer response and should not be treated as interchangeable indicators of social acceptance. Peer education draws on complementary theoretical perspectives and typically incorporates descriptive, explanatory, and directive information in developmentally appropriate, multicomponent formats. Across the reviewed programs, positive changes in autism-related knowledge were reported most consistently, whereas changes in attitudes were less uniform and findings concerning behavioral intentions were mixed. Actual peer interaction, sustained social acceptance, and belonging were examined less frequently. Evidence from Türkiye was particularly limited. The review concludes that peer education should extend beyond factual information to prepare peers and classroom environments for reciprocal interaction and participation. Future programs should be responsive to cultural and developmental contexts, incorporate diverse autistic perspectives, and be evaluated using relational and real-world indicators of social acceptance.

Keywords: Autism, inclusive education, peer education, social acceptance, behavioral intentions

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Introduction

Social Acceptance of Autistic Students in Inclusive Education Settings

In recent years, quality of life has become a central consideration in the provision of services for individuals with special educational needs. Consistent with this emphasis, inclusive education aims not only to provide autistic students with access to general education but also to create opportunities for meaningful social interactions with their allistic (i.e., non-autistic) peers (Reiter & Vitani, 2007). International policies and recommended practices similarly support the education of autistic students alongside their allistic peers, provided that appropriate supports are available (Cremin, Healy, Spirtos, & Quinn, 2021). Since the adoption of the Salamanca Statement in 1994, educational policies and practices have increasingly approached inclusive education as a human rights issue and an international policy goal (Cremin et al., 2021; Morris, O'Reilly, & Nayyar, 2023; Staniland & Byrne, 2013). In line with this rights-based orientation, autistic students have increasingly been educated in general education settings (Campbell, 2007; Harrower & Dunlap, 2001).

Although the extent of peer interaction may vary according to the amount of time autistic students spend in inclusive education settings (Lochner, 2019), these settings provide opportunities for interaction and shared learning between autistic and allistic students (Mavropoulou & Sideridis, 2014; Morton & Campbell, 2008). For autistic students, learning alongside allistic peers may provide access to varied models of learning, communication, and social engagement and may support participation, peer interaction, social support, and the development of friendships and social skills (Campbell, Ferguson, Herzinger, Jackson, & Marino, 2004; Campbell et al., 2019; Chamberlain, Kasari, & Rotheram-Fuller, 2007; Harrower & Dunlap, 2001; Humphrey & Symes, 2011; Koegel, Kim, Koegel, & Schwartzman, 2013; Morton & Campbell, 2008). Allistic students may also benefit from these shared experiences by developing greater acceptance of human diversity, a better understanding of their peers' individual support needs, and a greater capacity to provide peer support (Salend, 2011; Staub & Peck, 1995).

Although sharing an educational environment with allistic peers may provide autistic students with opportunities for interaction and learning, physical placement in a general education setting alone does not ensure meaningful social participation (Cremin et al., 2021). This limitation raises questions about the extent to which autistic students are socially accepted and included in peer groups (Swaim & Morgan, 2001). In this review, social acceptance refers to autistic students' recognition and inclusion as valued members of their peer groups, reflected in peers' willingness to interact with them, involve them in shared activities, and develop supportive relationships. However, research has consistently documented experiences that contrast with this understanding of social acceptance, including exclusion, loneliness, and bullying among autistic students, often at higher levels than among their peers in comparison groups (Campbell & Barger, 2011; Campbell et al., 2004; Hebron & Humphrey, 2014; Hebron, Humphrey, & Oldfield, 2015; Humphrey & Symes, 2010; Swaim & Morgan, 2001). These social difficulties may also manifest across different educational stages as challenges in developing friendships, building social networks, and participating in the social life of school and college communities (Cremin et al., 2021).

These risks also extend to autistic students with strong academic abilities, who are sometimes mistakenly assumed to require little support in navigating inclusive education settings. Such students may experience ridicule and peer bullying, as well as intolerance from teachers and administrators (Carter, 2009; Ranson & Byrne, 2014). Peer bullying, in particular, is associated with serious academic, social, and psychological consequences for autistic students (Schroeder, Cappadocia, Bebko, Pepler, & Weiss, 2014). Understanding these difficulties, however, requires moving beyond explanations centered solely on individual characteristics, as autistic students' social experiences may also be shaped by features of educational environments and peers' attitudes and responses (Hebron et al., 2015).

Factors Shaping the Social Acceptance of Autistic Students in Inclusive Education Settings

Against this interactional and contextual background, autism-related differences in social communication and interaction, repetitive patterns of behavior, and focused interests represent one set of factors considered in relation to peer interactions (Hadjikhani, 2014; Jones, Akram, Gordon, Murphy, & Sharkie, 2021). In school settings, differences in communication and social expression may include

reduced or context-dependent eye contact; difficulty initiating or navigating social exchanges; different ways of sharing enjoyment and taking turns in conversation; and challenges in interpreting emotions, social cues, and figurative language or in understanding another person's perspective (Baron-Cohen, 1988; Bellini, Peters, Benner, & Hopf, 2007; Karoff, Tucker, Alvarez, & Kovacs, 2017; Shakoor et al., 2012; White, Keonig, & Scahill, 2007). These differences may influence how autistic and allistic students interact with one another, particularly when they use or interpret social signals in different ways. Within this interactional context, autistic students have also been reported to be at greater risk of peer rejection and stigmatization than either allistic peers without developmental disabilities or peers with other developmental disabilities (Hebron et al., 2015; Humphrey & Symes, 2010; Montes & Halterman, 2007; Silton & Fogel, 2012; Staniland & Byrne, 2013; Symes & Humphrey, 2010).

Some autistic children may communicate or regulate distress through crying, vocalizing, rocking, self-injury, or intense emotional reactions. When these behaviors differ from dominant social expectations, they may be negatively evaluated and described using deficit-focused terms such as "disruptive," "antisocial," or "socially unacceptable," potentially increasing autistic children's risk of stigmatization (Chambres, Auxiette, Vansingle, & Gil, 2008; Silton & Fogel, 2012). Consequently, the social consequences of these behaviors depend partly on how peers and other members of the educational environment interpret and respond to them (Tonnsen & Hahn, 2016). The double empathy problem similarly conceptualizes interaction difficulties between autistic and allistic individuals as a breakdown in mutual understanding that both parties must navigate, rather than as a deficit located exclusively within the autistic person (Milton, Gurbuz, & López, 2022).

This reciprocal perspective is further supported by evidence that the quality of interaction is shaped by how allistic people perceive and interpret autistic expressions (Sasson et al., 2017). Both autistic and allistic individuals may experience difficulty interpreting one another because of differences in social experience and expression (Sasson et al., 2017; Sheppard, Pillai, Wong, Ropar, & Mitchell, 2016). Autistic individuals may therefore be perceived as socially distant or uninterested despite reporting a desire for closeness and social connection and finding satisfaction in contributing to others' well-being (Müller, Schuler, & Yates, 2008). In sum, the literature highlights the interactional nature of social difficulties, which may arise through differences in communication styles, mutual misunderstandings, and peer attitudes rather than from characteristics of autistic students alone (Morrison et al., 2020; Sasson et al., 2017). Accordingly, efforts to promote social acceptance should address both the support needs of autistic students and the attitudes, interpretations, and practices within their social and educational environments (Tonnsen & Hahn, 2016).

Despite this reciprocal perspective, targeted interventions and various forms of social support have traditionally been used to help autistic children and adolescents navigate social situations and develop contextually useful interaction skills (Ferraioli & Harris, 2011). Among these approaches, school-based social skills interventions may provide one form of support for autistic students. However, these programs are often resource-intensive and implemented by researchers outside regular classroom contexts, raising questions about their feasibility and integration into naturally occurring classroom and peer contexts (Sutton, Webster, & Westerveld, 2019). Moreover, learned or compensatory strategies alone may not be sufficient to address all of the social difficulties experienced by autistic students (Ranson & Byrne, 2014). Indeed, pressure to suppress or mask autism-related behaviors in order to conform to dominant social norms may have adverse implications for autistic individuals' mental health, self-perception, and access to appropriate support (Hull et al., 2017; Jones, Gordon, Akram, Murphy, & Sharkie, 2022). More broadly, these concerns suggest that approaches focused primarily on changing the autistic individual are inconsistent with the reciprocal nature of social interaction and may leave negative peer attitudes and environmental barriers unaddressed (Campbell, 2006; Tonnsen & Hahn, 2016).

In response to these limitations, peer education broadens the focus of intervention to include the peer context in which social acceptance develops. Because peers help shape autistic students' everyday opportunities for interaction, participation, and belonging, actively involving peers in inclusion is not merely supplementary but integral to promoting social acceptance. Accordingly, classroom-based peer education and anti-stigma programs seek not only to increase allistic students' autism-related knowledge but also to challenge misconceptions and stigmatizing interpretations, foster more accepting attitudes,

and strengthen their intentions to interact with and include autistic peers in shared activities (Campbell, 2007; Campbell et al., 2004; Morris, O'Reilly, & Byrne, 2020; Swaim & Morgan, 2001).

Aim and Review Questions

Research on school-based peer education and anti-stigma programs spans diverse theoretical perspectives, types of information, educational levels, intervention formats, and outcome domains. A focused synthesis is therefore needed to clarify how peer knowledge, attitudes, and behavioral intentions are conceptualized, how these constructs inform peer education, and what common patterns and differences emerge across structured programs. In Türkiye, reviews of research on inclusive education have predominantly focused on stakeholder views, implementation problems, and the educational experiences or performance of students with special educational needs (Bakkaloğlu, Yılmaz, Altun-Könez, & Yalçın, 2018; Batu, Cüre, Nar, Gövercin, & Keskin, 2018). Although several studies have examined the peer relationships and social experiences of autistic students (Erol, 2012; Girli & Atasoy, 2012; Menteş & Aktaş Arnas, 2021; Metin, Şenol, & Yumuş, 2015; Öztürk Özgönenel & Girli, 2016), the available national literature appears to devote limited attention to structured peer education programs specifically designed to address autism-related stigma and promote social acceptance.

To address these gaps, this narrative review aims to examine how peer education may help promote the social acceptance of autistic students in inclusive education settings. It brings together theoretical explanations of peer knowledge, attitudes, and behavioral intentions; the types of information used in peer education interventions; and the characteristics and reported outcomes of structured peer education and anti-stigma programs. By synthesizing these areas, the review seeks to identify common patterns, differences, and implications for the development of peer education practices, particularly in the context of Türkiye. To guide this synthesis, the review addressed the following questions:

1. How are peer knowledge, attitudes, and behavioral intentions conceptualized in relation to the social acceptance of autistic students in inclusive education settings?
2. What theoretical perspectives and types of information underpin peer education interventions intended to promote the social acceptance of autistic students?
3. What common patterns and differences are evident in the characteristics and reported outcomes of structured peer education programs, and what are their implications for practice and future research?

Method

This study was conducted as a narrative review, a flexible form of knowledge synthesis that allows a body of literature to be described, interpreted, and critically examined (Sukhera, 2022). The literature was identified through Google Scholar searches conducted during the development of the review, with the final search completed on August 16, 2026. No publication-year restriction was applied. Representative English combinations included ("autism" OR "autistic students") AND ("peer education" OR "autism awareness" OR "autism acceptance" OR "anti-stigma program") AND ("peer attitudes" OR "social acceptance" OR "behavioral intentions" OR "inclusive education"). Representative Turkish combinations included ("otizm" OR "otistik öğrenciler") AND ("akran eğitimi" OR "otizm farkındalığı" OR "otizm kabulü" OR "damgalama karşıtı program") AND ("akran tutumları" OR "sosyal kabul" OR "davranışsal niyetler" OR "kapsayıcı eğitim"). The reference lists of relevant empirical and review publications were also examined. All searches, screening decisions, and synthesis procedures were conducted by the sole author.

Search results were screened at the title, abstract, and full-text levels and retained when they contributed to a guiding question or the theoretical and historical background of the review. The review primarily considered peer-reviewed English- or Turkish-language publications addressing peer education, autism awareness or acceptance, anti-stigma programs, peer knowledge, attitudes, behavioral intentions, or social acceptance. The program-focused synthesis included structured programs implemented in educational settings that involved allistic peers, examined at least one relevant outcome, and provided sufficient information about content, delivery, and findings. All six programs identified that met these criteria were included in Table 1; they were not selected as an illustrative or purposive subset. Studies

were excluded from this synthesis when they focused solely on changing autistic students' social skills, did not involve a structured peer-education or autism-acceptance program, or provided insufficient program or outcome information. Because no formal screening log was maintained, a reliable count of all records considered and excluded could not be reported.

Relevant theoretical, conceptual, and review publications were included, while books and policy documents were used mainly to establish theoretical and historical context. Consistent with a narrative approach, the review did not aim to identify every publication through an exhaustive or systematic search. The literature was comparatively synthesized according to the three guiding questions, and no independent reviewer or standardized quality or risk-of-bias appraisal instrument was used.

Findings and Discussion

This narrative review examined how peer education may contribute to the social acceptance of autistic students in inclusive education settings. The literature is synthesized and discussed in relation to the three guiding questions, with attention to conceptual distinctions, common patterns, differences, and implications for peer education and social acceptance.

Peer Knowledge, Attitudes, and Behavioral Intentions in Relation to Social Acceptance

The reviewed literature conceptualizes peer knowledge, attitudes, and behavioral intentions as distinct yet interrelated dimensions through which the social acceptance of autistic students may be understood. However, the boundaries between these constructs are not always clearly defined. In stigma-oriented frameworks, stigma is conceptualized as involving three interrelated but distinct components: limited or inaccurate knowledge associated with ignorance, negative attitudes associated with prejudice, and behavior associated with discrimination (Thornicroft, Rose, Kassam, & Sartorius, 2007). By contrast, multidimensional models use attitude as a broader construct encompassing cognitive, affective, and behavioral dimensions; knowledge and beliefs may be located within the cognitive dimension, whereas behavioral intention may be located within the behavioral dimension. In other studies, however, behavioral intention is examined as a separate construct representing willingness to engage in future interaction (Campbell et al., 2019; Vignes, Coley, Grandjean, Godeau, & Arnaud, 2008). Thus, the same construct may be positioned differently depending on the theoretical framework used. These conceptual differences suggest that, although knowledge, attitudes, and behavioral intentions capture related aspects of peer responses, they should not be treated as interchangeable or combined without regard to how they are defined and measured.

Peer knowledge is positioned primarily as an interpretive resource. Awareness of autism does not necessarily indicate an accurate or sufficiently developed understanding of autistic experiences and differences. Allistic students may report having heard of autism yet be unable to explain what it means or may hold incomplete or inaccurate beliefs (Campbell & Barger, 2011; Campbell et al., 2019; Morris et al., 2020). The distinction between awareness and understanding is important because limited or inaccurate knowledge may shape how peers interpret unfamiliar communication, emotional expression, or behavior. Such gaps may lead peers to interpret autistic differences as deliberate unfriendliness, lack of interest, or inappropriate intent, thereby reinforcing negative peer evaluations (Campbell et al., 2019; Morris et al., 2020). Nevertheless, accurate knowledge should not be equated with acceptance, which also involves evaluative, emotional, behavioral, and relational responses; knowledge may provide a basis for understanding, but it does not by itself constitute either a positive attitude or social acceptance.

Within multidimensional models, attitudes refer more directly to how peers evaluate autistic students and are commonly conceptualized as comprising three dimensions: affective, cognitive, and behavioral. The affective dimension concerns emotional responses, such as comfort, anxiety, or sympathy; the cognitive dimension encompasses beliefs, perceptions, and judgments; and the behavioral dimension concerns a person's orientation toward acting in a particular way (Campbell et al., 2019; Vignes et al., 2008). Studies using this multidimensional framework have generally reported less positive attitudes toward autistic peers than toward peers without disabilities across general and dimension-specific measures (Campbell et al., 2004; Swaim & Morgan, 2001). Because these dimensions represent different aspects of peer responses, an overall attitude score may not fully capture dimension-specific patterns.

Accordingly, findings concerning peer attitudes should be interpreted with attention to potential differences among cognitive evaluations, affective responses, and stated willingness to interact.

The interpretation of attitude findings also depends on the level and target of measurement. For example, general attitudes toward autism, evaluations of a hypothetical autistic student, and attitudes toward a known classmate may reflect different responses. Prior awareness, direct experience, and perceived similarity may influence how information about autism is translated into evaluations of a particular peer. However, contact should not be treated as evidence of acceptance, because its relationship with peer evaluations may vary according to the context and characteristics of the interaction (Campbell, 2007; Mavropoulou & Sideridis, 2014). Together, these considerations suggest that attitudes are relational and context-sensitive rather than fixed characteristics of allistic students. Favorable general attitudes toward autism do not necessarily translate into acceptance of an individual autistic student in a particular classroom.

Behavioral intention occupies an intermediate position between evaluation and action. It refers to a person's perceived likelihood or willingness to perform a future behavior, such as sitting next to, working with, helping, or initiating a friendship with an autistic peer (Ajzen, 1991; Campbell et al., 2019). In the Theory of Planned Behavior (TPB), intention is shaped not only by attitudes toward a behavior but also by subjective norms and perceived behavioral control (Ajzen, 1991; Freitag & Dunsmuir, 2015). Accordingly, a positive evaluation of interaction may not lead to an intention to act if students anticipate peer disapproval or lack confidence in their ability to interact successfully. Beyond these immediate determinants, background variables such as demographic characteristics, prior knowledge, and personal experience may indirectly shape intention by influencing its antecedents, although they do not directly determine intention or behavior (Werner & Grayzman, 2011). This framework helps explain why favorable beliefs or feelings do not necessarily translate into readiness to interact.

Behavioral intention should also be distinguished from actual behavior. Measures of intention typically ask students what they would be willing to do in hypothetical scenarios, whereas social acceptance is reflected in actual patterns of inclusion, interaction, support, and relationship formation (Ajzen, 1991; Thornicroft et al., 2007). Stated willingness to sit next to or work with an autistic peer may indicate openness to contact, but it does not establish that interaction occurs, is reciprocal, or develops into a friendship. This distinction between intention and behavior is especially important when evaluating peer education because improvements in self-reported questionnaire responses cannot be assumed to correspond to changes in everyday classroom relationships. Behavioral intention is therefore more proximal to action than knowledge or general evaluation, but it remains an indicator of readiness rather than evidence of social acceptance in practice.

Findings from structured interventions further support the distinction among these dimensions. Some programs have reported improvements in autism-related knowledge and attitudes without similarly reliable improvements in behavioral intentions (Ranson & Byrne, 2014; Staniland & Byrne, 2013). Similarly, Morris et al. (2020) reported that change was not uniform across knowledge, attitudes, and behavioral intentions or across familiar and unfamiliar autistic peers. This divergence in outcomes is conceptually important because gains in knowledge cannot be assumed to produce equivalent changes in attitudes, and changes in attitudes cannot be assumed to translate automatically into intentions or behavior. While the three constructs may influence one another, the literature does not support treating their relationship as a simple or inevitable progression. From a TPB perspective, this pattern suggests that interventions focused primarily on autism-related information may influence knowledge or cognitive evaluations without necessarily addressing affective responses, perceived classroom norms, or confidence in initiating interaction. If these factors are not also addressed, gains in knowledge may not be accompanied by greater willingness to interact or more inclusive peer behavior (Ajzen, 1991; Freitag & Dunsmuir, 2015).

The studies from Türkiye identified in this review offer a complementary perspective. Rather than simultaneously examining allistic peers' knowledge, attitudes, and behavioral intentions, they have primarily focused on autistic students' school experiences, peer relationships, sociometric positions, and social acceptance. Erol (2012) provides a broader inclusion-related context by examining the school and

social experiences of students receiving education in inclusive settings, whereas Girli and Atasoy (2012) specifically documented the school and peer experiences of autistic students and students with intellectual disabilities. Menteş and Aktaş Arnas (2021) examined peer acceptance, rejection, bullying, and the social position of an autistic child in an inclusive preschool classroom. Metin et al. (2015) used sociometric methods to examine autistic children's positions within their actual peer groups, reporting that they were rarely selected in social, academic, or other contexts and generally occupied rejected or excluded positions. Taken together, these studies suggest that research from Türkiye has focused more directly on experienced relational outcomes than on hypothetical peer evaluations. Building on this largely descriptive body of work, Öztürk Özgönenel and Girli (2016) evaluated a classroom-based program intended to improve peer relationships, school adjustment, and social acceptance. Although this study represents an important contribution to intervention research, its quasi-experimental design, nonrandom group assignment, and sample characteristics limit the extent to which its findings can be generalized.

Despite these contributions, the available evidence does not provide a comprehensive national profile of allistic students' autism-related knowledge, multidimensional attitudes, and behavioral intentions. Instead, it primarily illuminates the relational outcomes with which these constructs may be associated. The use of qualitative accounts, observations, sociometric indicators, and social acceptance measures highlights the importance of distinguishing measures of peer knowledge, attitudes, and behavioral intentions from experienced social outcomes. At the same time, few of the studies from Türkiye included in this review have directly evaluated structured autism-focused peer education programs. The international theoretical and intervention literature therefore provides an important basis for understanding the design of such programs; however, the relevance and transferability of its assumptions and practices to Türkiye require careful contextual consideration.

Taken together, national and international evidence indicates that peer knowledge, attitudes, behavioral intentions, and social acceptance are related but non-equivalent outcomes. The distinction between stated intentions and experienced peer relationships further underscores the need to assess multiple levels of change. Evaluations of peer education should therefore distinguish among knowledge, attitudes, and behavioral intentions and, where possible, include measures of actual peer interaction, participation, and relational outcomes.

Theoretical Foundations and Information Types in Peer Education

The reviewed literature draws on several complementary theoretical perspectives and conceptual frameworks to explain how peer education may influence peer responses to autistic students. Stigma-oriented frameworks distinguish among potential targets relating to knowledge, attitudes, and behavioral responses (Thornicroft et al., 2007). In contrast, the TPB explains behavioral intention in relation to attitudes, subjective norms, and perceived behavioral control (Ajzen, 1991). Contact-based perspectives, in turn, focus on the social conditions within which peer responses may develop. Under supportive conditions, contact with autistic students may provide allistic peers with opportunities to reconsider their prior assumptions and develop a more nuanced understanding of their autistic peers (Mavropoulou & Sideridis, 2014; Morton & Campbell, 2008). However, placement in the same educational environment or closer physical proximity does not necessarily result in more positive peer responses (Mavropoulou & Sideridis, 2014; Morton & Campbell, 2008). The literature therefore indicates the importance of distinguishing mere contact from structured and supportive interaction. Within this distinction, peer education can be understood as a means of preparing the social environment in which contact occurs rather than as a substitute for contact.

Campbell's (2006, 2007) persuasive communication framework provides a more specific basis for designing this preparation. It directs attention to four interrelated elements: the content of the message, its source, the channel or medium through which it is communicated, and the characteristics of the intended audience. Across the reviewed interventions, information was delivered by researchers, teachers, health professionals, family members, and autistic individuals through various formats, including written materials, classroom discussions, presentations, videos, vignettes, experiential activities, and online resources (Campbell et al., 2004; Campbell, Ferguson, Herzinger, Jackson, & Marino, 2005; Dachez & Ndobo, 2018; Fleva, 2015; Freitag & Dunsmuir, 2015; Gillespie-Lynch et al.,

2015; Matthews, Ly, & Goldberg, 2015; Morton & Campbell, 2008; Silton & Fogel, 2012; Staniland & Byrne, 2013). This variation indicates that peer education cannot be reduced to a single delivery format. Rather, it can be understood as a communication process in which the message, its source, the medium, and the intended audience may jointly shape how the information is received.

Within this communication framework, three types of information can be distinguished: descriptive, explanatory, and directive information (Campbell, 2006, 2007). Descriptive information presents characteristics associated with autism while drawing attention to interests, preferences, abilities, and experiences that autistic and allistic students may share. Explanatory information contextualizes communication patterns or behaviors that peers may otherwise find unfamiliar. Directive information offers practical guidance on how peers might initiate interaction, communicate, respond to support needs, or participate in shared activities. These categories are analytically useful because they distinguish information that presents autism-related characteristics and shared experiences, supports the interpretation of differences, and prepares peers for interaction.

Descriptive information emphasizes characteristics shared by autistic students and their peers alongside autism-related differences. Its theoretical basis is commonly associated with cognitive consistency theory, according to which perceived similarity may contribute to interpersonal liking and more favorable evaluations (Campbell, 2007; Heider, 1958). By making shared interests, preferences, or experiences more salient, this type of information may reduce an exclusive emphasis on differences and facilitate viewing an autistic student as a potential interaction partner. Nevertheless, similarity-based messages require careful framing. When acceptance is framed primarily in terms of perceived sameness, such messages may minimize autism-related differences or imply that autistic students are more acceptable when they resemble allistic peers. Descriptive information may therefore be most constructive when it acknowledges both commonality and difference without presenting similarity as a prerequisite for inclusion.

The theoretical basis of explanatory information is commonly associated with social attribution theory, which addresses the relationships among perceived causes, responsibility, and emotional and behavioral responses (Corrigan, 2000; Weiner, 1993). When peers interpret unfamiliar behavior as deliberate or intentionally inappropriate and attribute responsibility for it to the autistic student, they may experience greater anger, reduced sympathy, and less willingness to provide social support (Campbell, 2007; Juvonen, 1992). Explanatory information may help peers interpret differences in movement, sensory responses, communication, or social interaction within a broader context and reduce inaccurate attributions of harmful or unfriendly intent. However, such explanations should avoid portraying autistic students as lacking agency or defining every action solely in terms of an autism diagnosis. Their purpose is to encourage more contextualized interpretations rather than to excuse, pathologize, or provide a single explanation for behavior.

Directive information shifts the focus from interpretation to interaction by providing practical guidance for particular social situations. Examples include initiating interaction, identifying shared activities, adapting communication when appropriate, and offering support in ways that respect the autistic student's preferences (Campbell et al., 2019). Its theoretical basis has been linked to self-efficacy theory, as such guidance is intended to increase peers' perceived ability and confidence to interact successfully (Ranson & Byrne, 2014). By reducing uncertainty about how to interact, directive information may strengthen peers' perceived competence and, in turn, support their perceived behavioral control (Ajzen, 1991; Ranson & Byrne, 2014). From a reciprocal perspective, however, such guidance should not assign allistic students a one-sided helping role or position autistic classmates as passive recipients of support. Directive information is more consistent with social acceptance when it supports mutual communication, participation, and responsiveness between autistic and allistic students.

Rather than relying on a single type, structured peer education programs frequently combine descriptive, explanatory, and directive information (Campbell et al., 2019; Morris et al., 2020; Ranson & Byrne, 2014; Staniland & Byrne, 2013). However, the relative contribution of these information types remains uncertain. Lochner's (2019) meta-analysis reported that effect estimates differed across message-content categories, with descriptive information associated with a larger effect estimate than combined or explanatory information. Notably, the estimate for descriptive information was based on only one study,

substantially limiting conclusions about its comparative effectiveness. Furthermore, when programs combine multiple information types, the contribution of any single component cannot easily be isolated. The literature therefore provides a clearer basis for distinguishing the proposed functions of these information types than for establishing the superiority of one type: descriptive information addresses how similarity and difference are perceived; explanatory information addresses interpretation and blame; and directive information addresses uncertainty about interaction.

The identity and perspective of the information source may influence how autism is represented. Programs delivered exclusively by allistic professionals or researchers may provide accurate information while still presenting autism primarily from an external or clinical perspective. Including first-person accounts from autistic individuals may provide insight into communication, sensory experiences, participation, and support preferences and may challenge interpretations based solely on observable behavior (Dachez & Ndobo, 2018; Gillespie-Lynch et al., 2015). However, no single first-person account can represent the full diversity of autistic experiences. Such contributions should therefore broaden the range of perspectives included in peer education rather than being treated as a single authoritative account of autism. Consequently, evaluations of intervention content should consider not only who communicates the information but also the diversity of the perspectives represented and how autistic experiences are framed.

The intervention study from Türkiye identified in this review provides a context for considering how different types of content may be incorporated into peer-oriented programs, while also illustrating the limitations of inferring a program's theoretical basis from its content. The classroom-based program evaluated by Öztürk Özgönenel and Girli (2016), for example, incorporated discussion and role-play activities that addressed conversational skills, peer relationships, empathy and tolerance, recognition of positive characteristics, anger management, and participation. Its content therefore extended beyond the provision of factual information to include affective, relational, and action-oriented elements. However, the presence of these elements does not demonstrate that the program directly applied any of the theoretical perspectives or concepts discussed above unless such a connection was explicitly stated or examined by the authors. Because only one structured autism-focused peer education study from Türkiye was identified in this review, the available evidence is insufficient to characterize the theoretical foundations and information types used across the national context.

Overall, the literature on peer education is underpinned by complementary perspectives that address different aspects of the intervention process rather than by a single unified theory. Taken together, these perspectives position peer education across three related dimensions: the social conditions within which interaction occurs, the information used to support interpretation and readiness for interaction, and the ways in which that information is communicated to a particular audience. Contact-based perspectives address the social conditions of interaction; descriptive, explanatory, and directive information constitute the content dimension; and the persuasive communication framework directs attention to delivery. Theoretical accounts and concepts associated with perceived similarity, social attribution, and self-efficacy further provide possible explanations for the functions attributed to different types of information. Because these dimensions may not always be clearly articulated or adequately addressed in program design, interpreting peer education programs requires attention to the alignment among their stated foundations, information content, delivery features, intended outcomes, and methods of evaluation.

Characteristics, Outcomes, and Patterns Across Structured Peer Education Programs

The structured peer education programs identified in this review differed in target age group, duration, delivery format, outcome measures, and implementation context. They nevertheless shared an emphasis on multicomponent content, developmentally appropriate materials, and implementation within educational settings. Rather than representing a uniform intervention model, the programs combined these features in different ways and with varying levels of intensity. Table 1 summarizes the characteristics, reported outcomes, and main methodological considerations of the six programs examined in this review.

Table 1.
Characteristics and Reported Outcomes of Structured Peer Education Programs

Program and evaluation study	Participants and setting	Format, duration, and components	Outcomes examined	Reported findings	Methodological considerations
Understanding Our Peers (Ranson & Byrne, 2014; Staniland & Byrne, 2013)	Students in Grades 7–9 in mainstream secondary schools; 395 boys in Staniland and Byrne (2013) and 273 girls in Ranson and Byrne (2014)	Interactive classroom presentations, videos, direct and video contact, and online activities combining descriptive, explanatory, and directive information; six weekly 50-minute sessions in Staniland and Byrne (2013) and eight weekly 50-minute sessions in Ranson and Byrne (2014)	Autism-related knowledge, attitudes, and behavioral intentions	Knowledge and attitudes improved in both evaluations, with gains generally maintained for one school term. Behavioral intentions did not improve in Staniland and Byrne (2013), whereas the small posttest improvement in Ranson and Byrne (2014) was not maintained.	Single-gender samples; pseudo-random or nonrandom group allocation; reliance on self-report; no systematic assessment of actual peer behavior; low or variable engagement with online activities; possible influence of school context and presenter characteristics; restricted gender representation in the intervention materials
Understanding Our Peers: Early Years (Balaz, Byrne, & Miellet, 2022)	523 allistic children and 24 autistic children aged 44–67 months across nine mainstream early childhood services	Three children's storybooks and an educator guide combining descriptive, explanatory, and directive information; implemented over 12 weeks	Naturally occurring positive and negative interactions between autistic and allistic children	Positive interactions increased, and negative encounters involving autistic children decreased	No control group; intervention fidelity not established across educators; possible influence of variation in autistic children's characteristics and support needs not examined
Kit for Kids (Campbell et al., 2019)	234 fourth- and fifth-grade students from 19 classrooms across three elementary schools	One 30–45-minute classroom lesson using the original KfK lesson plan, educational poster, and peer handouts; a 63-second analogue video was used as an evaluation stimulus; outcomes were assessed immediately and at a one-week follow-up	Autism-related knowledge and attitudes	Knowledge increased and remained higher at follow-up; attitudes improved primarily among students with little or no previous autism-related knowledge	Analogue design; newer KfK additions not evaluated; researcher-led delivery and data collection; marginal reliability of the knowledge measure; differential nonparticipation; one-week follow-up; actual peer behavior not assessed

Table 1 continuing

Program and evaluation study	Participants and setting	Format, duration, and components	Outcomes examined	Reported findings	Methodological considerations
Understanding Our Peers with Pablo (Morris et al., 2020)	222 young children in mainstream early education settings	Fifteen approximately 30-minute lessons delivered by classroom teachers over three weeks; storybooks, inquiry-based activities, classroom discussion, and animated episodes addressing repetitive play, sensory differences, and social communication	Autism-related knowledge, attitudes toward familiar and unfamiliar autistic peers, and behavioral intentions	Knowledge and attitudes toward unfamiliar autistic peers improved and were maintained at 3 months; no intervention effect was found for familiar-peer attitudes or behavioral intentions.	Low reliability of the autism knowledge measure; follow-up data collected only from the intervention group; no demonstrated program effect on attitudes toward familiar autistic peers or friendship outcomes; actual peer interaction not assessed; teacher-delivered intervention with self-monitored fidelity
Virtual autism acceptance program (Davidson & Morales, 2023)	23 allistic children aged 8–10 years in Grades 3–4 at one private elementary school	Five weekly 35-minute virtual modules using videos, brief presentations, discussions, workbooks, and interactive activities addressing autism-related facts, strengths, similarities and differences, sensory experiences, kindness, and friendship; materials reviewed by autistic adults and parents of autistic children	Autism-related knowledge, attitudes, behavioral intentions, learning retention, feasibility, and acceptability	Knowledge, attitudes, and behavioral intentions improved from pretest to posttest and showed evidence of maintenance at one year; students and the classroom teacher evaluated the program positively.	Small single-group pilot; no comparison group; pandemic implementation in one classroom with a highly supportive teacher; follow-up attrition; no autistic participants; possible social-desirability bias; intentions rather than observed peer behavior assessed.
Classroom-based peer relationship program in Türkiye (Öztürk Özgönenel & Girli, 2016)	Fourth- and fifth-grade students who shared classrooms with autistic peers; intervention group n = 49 and comparison group n = 71	Researcher-delivered discussion and role-play activities addressing conversational skills, peer relationships, empathy and tolerance, recognition of positive characteristics, anger management, and participation; 11 activities over 11 weeks (13 class hours)	Peer social acceptance, autistic students' social competence, and school adjustment	Improvements were reported in peer social acceptance, social competence, and school adjustment	Quasi-experimental pretest–posttest design; nonrandom group assignment; relatively small and unequal groups; no follow-up assessment

Note. The table reports the program characteristics and findings described in the reviewed studies. Differences in terminology, outcome measures, and research designs limit direct comparisons across programs.

Across the evaluated programs, autism-related knowledge was the outcome for which positive change was reported most consistently (Campbell et al., 2019; Davidson & Morales, 2023; Morris et al., 2020; Ranson & Byrne, 2014; Staniland & Byrne, 2013). Changes in attitudes were less uniform and sometimes depended on whether students were responding to a familiar autistic peer or to a hypothetical or unfamiliar peer (Morris et al., 2020). Behavioral intentions showed the least consistent pattern: improvement was reported in the virtual pilot program, but corresponding changes were not consistently observed in the other programs that assessed this outcome (Davidson & Morales, 2023; Morris et al., 2020; Ranson & Byrne, 2014; Staniland & Byrne, 2013). Taken together, these findings do not support a simple sequence in which increased knowledge necessarily produces more positive attitudes and, in turn, more inclusive behavioral intentions.

The outcomes assessed also differed in how directly they represented experienced social acceptance. Most evaluations relied primarily on questionnaires, hypothetical situations, or self-reported responses (Campbell et al., 2019; Davidson & Morales, 2023; Morris et al., 2020; Ranson & Byrne, 2014; Staniland & Byrne, 2013). In contrast, only a small number of evaluations included more direct indicators of interaction and social acceptance (Balaz et al., 2022; Öztürk Özgönenel & Girli, 2016). Therefore, the available evidence is more extensive for changes in what students know, report, or indicate that they might do than for changes in reciprocal interaction, friendship, participation, peer-group membership, or belonging. This difference in the scope of evidence is important because favorable responses to questionnaires do not establish that inclusive relationships have developed in everyday educational contexts.

The delivery format was another source of variation. The evaluation of a fully virtual program provides preliminary evidence that autism acceptance content can be delivered remotely and viewed favorably by participating students and their teacher (Davidson & Morales, 2023). However, evidence from a small, single-group pilot study does not establish whether virtual delivery is comparable to or preferable to classroom-based implementation. Direct comparative research is needed to determine whether virtual and classroom-based delivery differ in terms of participation, accessibility, implementation fidelity, and outcomes.

Despite the inclusion of follow-up assessments in several evaluations, evidence concerning the maintenance and generalization of outcomes remained limited. Follow-up periods and designs varied substantially, comparison-group data were not always available at follow-up, and participant loss limited the interpretation of some longer-term findings (Campbell et al., 2019; Davidson & Morales, 2023; Morris et al., 2020; Ranson & Byrne, 2014; Staniland & Byrne, 2013). Evidence that questionnaire responses or program learning are maintained does not establish that these changes transfer to interactions with different autistic peers or extend beyond the activities addressed by the intervention. Conclusions about durability and generalization should therefore remain cautious.

Although participant age and educational level may be associated with variation in outcomes, the findings do not support a clear and consistent developmental pattern. Lochner's (2019) meta-analysis reported the largest overall intervention effects among middle school students, followed by elementary, high school, and postsecondary students. In contrast, some program evaluations suggested that limited changes in behavioral intentions might partly reflect the older age of the participants (Ranson & Byrne, 2014; Staniland & Byrne, 2013). These findings concern different outcome domains and were obtained from programs that also differed in content, intensity, and measurement. Therefore, apparent differences across educational levels cannot be attributed confidently to age alone.

Similarly, the evidence concerning gender is inconclusive. Although Lochner (2019) did not identify differences in overall intervention effectiveness according to participant gender, gender was not consistently examined as a moderator across individual programs. Some evaluations used gender-restricted samples, making it difficult to distinguish gender-related variation from differences in program design or implementation (Ranson & Byrne, 2014; Staniland & Byrne, 2013). Other potentially relevant background characteristics, such as socioeconomic background, prior autism-related knowledge, and the nature and quality of previous contact, were also not examined consistently (Campbell et al., 2019; Davidson & Morales, 2023). Future evaluations should clearly report sample

composition and examine these characteristics as possible moderators when the research design and sample size permit.

The characteristics of autistic individuals represented in intervention materials or participating in the programs were rarely considered as potential sources of variation in outcomes. Some evaluations noted restricted gender representation, whereas others did not assess whether differences among autistic children in educational settings were related to program outcomes (Balaz et al., 2022; Staniland & Byrne, 2013). Consequently, it remains unclear whether program outcomes vary according to the gender, ethnicity, communication profile, or support needs of the autistic individuals represented or involved. Future evaluations should clearly describe these characteristics and avoid presenting a single profile as representative of autistic students as a group.

The mechanisms linking changes in knowledge, attitudes, and behavioral intentions were rarely examined directly. Instead, most evaluations focused on whether scores changed following an intervention rather than testing whether increased knowledge contributed to changes in attitudes, perceived similarity, or behavioral intentions (Campbell et al., 2019; Davidson & Morales, 2023; Morris et al., 2020; Ranson & Byrne, 2014; Staniland & Byrne, 2013). The divergence among outcomes suggests that these relationships should be examined empirically rather than inferred from parallel changes in scores. Mediation analyses and other theory-informed analytic approaches may help clarify which program components are associated with change, for whom they are most relevant, and the pathways through which they operate.

Methodological differences further limit comparisons across programs. These differences concern the use of control or comparison groups, participant selection procedures, measurement quality, assessment of implementation fidelity, follow-up designs, and the extent to which complete program packages were evaluated (Balaz et al., 2022; Campbell et al., 2019; Davidson & Morales, 2023; Morris et al., 2020; Ranson & Byrne, 2014; Staniland & Byrne, 2013). Self-report measures were commonly used, and responses may have been influenced by social desirability or prior familiarity with autism (Campbell et al., 2019; Davidson & Morales, 2023; Ranson & Byrne, 2014). The multicomponent nature of the programs also makes it difficult to determine whether reported changes are associated with a particular information type, delivery format, information source, or combination of components. Therefore, differences in outcomes should not be interpreted as direct evidence that any particular program or instructional component is more effective than others.

Information concerning program acceptability and social validity was not reported consistently. Balaz et al. (2022) obtained feedback from educators, Ranson and Byrne (2014) collected student feedback on intervention components, and Davidson and Morales (2023) obtained feedback from participating students and the classroom teacher and involved autistic adults and parents of autistic children in reviewing the materials before implementation. These examples illustrate how stakeholder perspectives can be incorporated into program development and evaluation. However, such practices were not reported in all evaluations. Future studies should obtain feedback from allistic and autistic students, teachers, and other relevant stakeholders to determine whether programs are perceived as respectful, relevant, feasible, and acceptable in everyday educational settings.

Evidence from Türkiye remains especially limited. The study from Türkiye identified in this review contributes to the literature by evaluating classroom-based changes in social acceptance and school-related outcomes rather than relying solely on hypothetical responses (Öztürk Özgönenel & Girli, 2016). However, the characteristics of its sample and its quasi-experimental design limit the conclusions that can be drawn, and a single evaluation cannot establish how structured autism-focused peer education can be implemented or what outcomes it may produce across different regions, school types, and educational levels. This indicates a need to develop and evaluate culturally and educationally responsive programs in Türkiye. However, adaptation should extend beyond merely translating existing materials. Program content, examples, language, delivery procedures, and measures should be examined for their relevance to local classroom practices and understandings of autism.

Overall, the reviewed programs reported the most consistent positive changes in autism-related knowledge, whereas changes in attitudes were less uniform and findings concerning behavioral intentions were mixed (Campbell et al., 2019; Davidson & Morales, 2023; Morris et al., 2020; Ranson

& Byrne, 2014; Staniland & Byrne, 2013). Actual peer interaction and enduring social acceptance were examined too infrequently to support firm conclusions. The available evidence therefore provides cautious support for changes in proximal peer responses but remains insufficient to determine whether structured peer education consistently improves autistic students' experienced social acceptance in everyday educational settings.

Conclusion and Suggestions

The synthesis across the three guiding questions suggests that social acceptance cannot be inferred from any single dimension of peer response or assumed to result from the provision of information alone. Knowledge, attitudes, and behavioral intentions represent distinct but related aspects of how peers understand, evaluate, and prepare to interact with autistic students. Acceptance, however, is realized within actual relationships and educational contexts. Therefore, a coherent approach to peer education requires consideration of the social conditions of interaction, information content, information source, delivery format, and characteristics of the intended audience. Although existing programs indicate the potential of this approach, the evidence base remains concentrated on proximal changes in peer responses, with more limited evidence concerning sustained changes in autistic students' everyday social participation and belonging.

Rather than relying primarily on the provision of factual information about autism, peer education programs should address multiple dimensions of peer responses. These programs should prepare peers and classroom environments for reciprocal interaction, participation, and mutual responsiveness rather than teach allistic students to manage or correct autistic classmates. Descriptive, explanatory, and directive information may serve distinct yet complementary purposes when presented in ways that acknowledge shared experiences and autism-related differences, reduce inaccurate or stigmatizing interpretations, and prepare peers for respectful interaction. Program design should ensure alignment among information content, its source, the mode of delivery, and the developmental and contextual characteristics of the intended audience. Materials should incorporate diverse autistic perspectives and represent variation in gender, ethnicity, communication profiles, and support needs without presenting a single profile as representative of autistic students as a group. Programs should also be integrated into ordinary classroom practices and supported by teachers. Their proactive use before exclusion and negative peer relationships become established may be considered, although their preventive effects require direct evaluation.

Program evaluation should reflect the multidimensional and relational nature of social acceptance. Changes in knowledge, attitudes, and behavioral intentions should be assessed separately. Evaluations should also extend beyond immediate self-report scores to include observations of peer interaction, sociometric indicators, participation, friendship, social support, and belonging. Valid, reliable, and culturally appropriate measures should be used, and sample characteristics should be clearly reported. Where feasible, evaluations should include appropriate control or comparison groups, assess implementation fidelity, evaluate complete program packages, and use longer follow-up periods to determine whether changes are maintained and generalized beyond intervention activities. Research should also examine potential moderators, including age, gender, socioeconomic background, prior autism-related knowledge, previous contact with autistic individuals, and the characteristics of the autistic individuals involved or represented. Mediation analyses and other theory-informed approaches may further clarify the pathways through which program components are associated with change. To assess social validity and determine whether programs are perceived as respectful, relevant, feasible, and acceptable, feedback from allistic and autistic students, teachers, families, and other relevant stakeholders should be incorporated.

For Türkiye, the priority is not merely to reproduce or translate existing international programs but to develop and evaluate approaches that are responsive to local educational and cultural contexts. Programs should be developed or adapted for different age groups and educational levels, evaluated across diverse school settings, and designed with the involvement of autistic individuals and other relevant stakeholders. Evaluations should examine both proximal peer responses and social outcomes experienced by autistic students. Once the effectiveness and social validity of a program have been established, its integration into existing curricula and accessible digital learning environments may be

considered. While digital materials may broaden access, they should supplement rather than replace opportunities for guided discussion and meaningful interaction. Carefully designed peer education may help transform shared educational placement into meaningful participation. However, it should be viewed as one component of broader efforts to create inclusive classroom environments rather than as a stand-alone solution to exclusion. Ultimately, the value of peer education should be judged not only by whether allistic students respond more positively following a program but also by whether autistic students experience greater reciprocity, participation, support, and belonging in their everyday educational lives.

Limitations

This narrative review brings together conceptual, theoretical, and intervention literature to provide an integrated account of how peer education may contribute to the social acceptance of autistic students. Extending the focus beyond changes in knowledge and attitudes, it considers behavioral intentions, actual peer interaction, and relational outcomes while examining evidence from Türkiye alongside the international literature. However, the review's findings and implications should be interpreted in light of several limitations.

First, consistent with the flexible and iterative nature of narrative reviews, the literature was identified primarily through Google Scholar searches and reference-list checking rather than through an exhaustive systematic search across multiple databases. The review therefore does not claim to include every relevant publication, and studies not retrieved through these procedures may have been overlooked. The focus on publications in English and Turkish may also have excluded relevant studies published in other languages. Because the review focused primarily on peer-reviewed journal articles, unpublished studies, theses, reports, and other non-journal sources were not systematically sought. As a result, relevant program evaluations available outside the peer-reviewed literature may not have been identified.

Second, the identification, selection, interpretation, and synthesis of studies were conducted by the sole author. No independent verification of these processes was undertaken, and the included studies were not appraised using a standardized instrument to assess methodological quality or risk of bias. Although methodological considerations were taken into account when interpreting program findings, the evidence was not formally weighted according to study quality. Consequently, decisions concerning relevance, conceptual classification, and the identification of patterns may have been influenced by the author's judgment.

Finally, the reviewed programs differed substantially in participant characteristics, educational level, intervention content, duration, delivery format, outcome measures, follow-up procedures, and research design. This heterogeneity limits direct comparisons and the ability to draw firm conclusions about the comparative effectiveness of particular programs, information types, or delivery formats. As the review was narrative rather than meta-analytic, no pooled effect size was calculated. The small number of structured autism-focused peer education programs, particularly those evaluated in Türkiye, further limits the transferability of the conclusions across educational and cultural contexts. Therefore, the findings should be understood as an analytical synthesis of the available literature rather than as a definitive estimate of program effectiveness.

Future reviews could strengthen the evidence base by conducting searches across multiple databases, systematically including relevant non-journal sources, using independent reviewers and standardized quality-appraisal procedures, and undertaking meta-analytic synthesis when sufficient comparable studies are available. Within these boundaries, the present review provides a conceptual and empirical foundation for developing and evaluating more comprehensive, contextually responsive peer education programs.

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