A Systematic Review and Meta-Analysis of Associations between Non-Autistic People's Characteristics and Attitudes Toward Autistic People

Running Title: Review of Rater Characteristics

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Conflict of Interest

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Lay Summary

This review brings together studies that look at the relationships between non-autistic people's characteristics (things like their knowledge, age, or personalities) and their attitudes toward autistic people. We found 47 relevant studies, many of which had several flaws. Attitudes toward autistic people were related to participants' gender, autism knowledge, and their contact with autistic people, but not to their age or autistic traits.

Abstract

This systematic review includes a narrative synthesis and meta-analysis of research on the associations between non-autistic people's characteristics and their attitudes toward autistic people. Of 47 studies included in the narrative synthesis, White undergraduate students were surveyed most frequently. Demographic characteristics were the factors most frequently tested for associations with attitudes, followed by contact-related factors (i.e., quantity and quality), knowledge about autism, trait and personality factors, and other factors that did not fit into a single category. Internal consistency was not reported for some instruments assessing non-autistic people's characteristics; some instruments had alpha levels lower than .70, and many characteristics of non-autistic raters were measured using one-item measures. Moreover, theoretical motivations for investigating the characteristics of non-autistic people were rarely provided. A total of 37 studies were included in the meta-analysis, which showed that attitudes toward autistic people were significantly associated with non-autistic participants' gender, knowledge about autism, and quality and quantity of their previous contact with autistic people, but not with their age or autistic traits. These findings indicate a need for more studies that focus on context-related characteristics (e.g., institutional variables such as support/commitment to inclusion), use reliable instruments to measure non-autistic people's characteristics, and situate their investigation in a theoretical framework.

Keywords: attitudes toward autistic people, rate characteristics, meta-analysis, review, internal consistency, theory

A Systematic Review and Meta-Analysis of Associations between Non-Autistic People's Characteristics and Attitudes Toward Autistic People

Research suggests that non-autistic individuals often hold negative attitudes toward autistic people (Aube et al., 2021; Baldwin et al., 2014; Morrison et al., 2019; Sasson et al., 2017). Eagly and Chaiken's (1993) seminal work defines an attitude as the extent to which an individual covertly or overtly evaluates a particular entity (or characteristics of an entity) positively and/or negatively. Since attitudes are multifaceted, autism researchers have examined various types of attitudes toward autistic people, such as stigma (i.e., the process of labeling or interpreting attributes in a discrediting or discriminating way, which is often measured by desired social distance; Gillespie-Lynch et al., 2015; Goffman, 1963; Link & Phelan, 2001), openness toward autism (i.e., feeling afraid or comfortable around an autistic individual or thinking that an autistic individual is different from oneself; Nevill & White, 2011), and/or first impressions (i.e., instantaneous character judgments based on initial impressions; Sasson et al., 2017).

These negative attitudes can adversely impact autistic people's mental health (Botha & Frost, 2020; Cage et al., 2018), employment outcomes and experiences (Baldwin et al., 2014), opportunities for inclusive education, and social interactions (Reiter & Vitani, 2007). Therefore, there has been increasing interest in understanding and improving non-autistic people's attitudes toward autistic people. Such research has focused on identifying specific characteristics of non-autistic people associated with their attitudes toward autistic people. In this study, we consider non-autistic people's characteristics as any feature or quality belonging to non-autistic individuals completing attitude measures such as descriptors (including demographics, cognitive profiles, or traits), experiences (usually related to disability), knowledge, or contextual factors (institutional variables such as support/commitment to inclusion, urbanicity, or culture). Understanding associations between

characteristics of non-autistic people and their attitudes toward autistic people could facilitate the development of effective and targeted autism trainings, by identifying either potentially malleable factors that could lead to improvements in negative attitudes, or specific groups of people (e.g., age cohorts) that may be especially in need of intervention regarding their attitudes about autism. Despite the growing interest in associations between non-autistic people's characteristics and attitudes towards autistic people, to our knowledge, no systematic review has synthesized the extant literature on this topic.

This study, therefore, examined studies that reported the associations between characteristics of non-autistic samples and attitudes toward autistic people. We also examined the theoretical frameworks that underpinned this literature, and the internal consistency of the instruments utilized to assess participant characteristics. The following sections summarize the theories that may have prompted the examination of specific characteristics in extant literature. These theories include intergroup contact theory, socialization theories, knowledge-related theories, cultural theories, and trait theories. Note that researchers may draw on several theories when proposing how different participant characteristics may be associated with attitudes about autistic people.

Intergroup Contact Theory

Intergroup contact theory purports that intergroup interactions can lessen prejudice between an ingroup (i.e., the social group with which a person identifies) and an outgroup (i.e., a social group with which a person does not identify; Allport, 1954). Allport (1954) further specified the optimal conditions for improving intergroup attitudes: intergroup cooperation, supported by authorities, toward a common goal of equal status. More recent research suggested that intergroup contact improves an individual's attitudes toward an outgroup via reduced threat and anxiety and increased empathy toward the outgroup (Kanas et al., 2015; Pettigrew & Tropp, 2005).

According to intergroup contact theory, intergroup (i.e., between groups) contact between groups who differ in noticeable ways (e.g., groups of autistic and non-autistic people) may be associated with non-autistic people's attitudes toward autistic people (who they may conceptualize as an out-group). Aligning with intergroup contact theory, associations between the quality and quantity of contact with autistic people have frequently been examined, with many studies noting positive associations between quality and/or quantity of contact and attitudes toward autistic people (e.g., Kim, 2021; Sasson et al., 2019; Someki et al., 2018). However, some studies have not found quantity of contact to be a significant predictor, particularly when quality of contact is also accounted for (Gardiner & Iarocci, 2014; Gillespie-Lynch et al., 2019).

Socialization Theories

Socialization theories address how an individual's personality develops within specific social environments that shape the language, norms, and/or beliefs that help the individual integrate into social groups (Höppner, 2017; Hurrelmann & Bauer, 2015). In autism research, socialization theories may provide a way to understand potential associations between attitudes and sociodemographic factors such as age and gender as sociocultural norms and values may influence how particular social groups present themselves and interact. Studies on cohort effects (i.e., enduring generational variations that characterize specific age groups; Glenn, 2005; Mason et al., 1973) suggest that norms and values are embedded within generational cohorts through socialization (Shaykhutdinov, 2019). People of different age cohorts are socialized into their societies through unique peer relationships, education, technological advancements, and specific events such as pandemics, wars, or other societal upheavals that impact them in unique ways (Gugushvili & Kabachnik, 2015; Ryders, 1965). Similarly, there may be generational differences in attitudes toward autistic people. For instance, younger individuals may be socialized to have more positive attitudes toward

autistic people due to greater autism understanding or increased expectations to appreciate diversity. Some evidence in support of this pattern was observed in a study of American college students in White et al. (2019), which revealed greater knowledge and more positive attitudes toward an autistic student among students in a cohort enrolling in college five years after an "older" comparison cohort. Meanwhile, some studies report more desired social distance from autistic individuals in older adults (Massa et al., 2022), while others have shown that age is not associated with attitudes (Cage et al., 2019; Chung et al., 2015; Dachez et al., 2015; Kim, 2021).

Gender socialization theory describes the process through which people learn and perform gendered attitudes, norms, and behaviors expected of them as males or females (Wharton, 2005). Societies often assign different social and cultural norms for women and men (i.e., masculinity, independence, and assertiveness for men and empathy and expressivity for women; Rogers et al., 2021). Gender socialization is a process through which these gender norms are transmitted and internalized within people according to their gender and culture (Hoominfar, 2019). Some autism researchers have built from this theoretical framework by examining potential gender differences in attitudes toward autistic people. Some studies have found that women display more favorable attitudes toward autistic people than men do (e.g., Campbell, 2004; Gillespie-Lynch et al., 2015; Payne & Wood, 2016), perhaps because females tend to be socialized to be more empathic and adjusted to others' feelings (Hoffman, 1977; Lennon & Eisenberg, 1987; Löffler & Greitemeyer, 2021). However, some studies, often with female biased samples, failed to find gender differences (Someki et al., 2018; Surmen et al., 2015).

Knowledge-Related Theories

Anti-stigma interventions often attempt to educate people by replacing misconceptions about a marginalized condition with more accurate knowledge (Corrigan &

Shapiro, 2010). For example, autism knowledge, assessed by how accurately individuals can identify facts about autism and reject misconceptions, is often a target of interventions to reduce autism stigma (e.g., Gillespie-Lynch et al., 2015; Jones et al., 2021). Research from outside the field of autism research suggests that attempts to improve knowledge about marginalized conditions can yield conflicting outcomes; education focused anti-stigma interventions can improve some attributions of blame for a condition (e.g., that unusual behaviors are a choice) while exaggerating other attributions of blame (e.g., that people cannot change because it is their brains that make them different; Corrigan & Shapiro, 2010). Attribution theory contends that individuals' causal ascriptions about the etiology of disabilities (or their perceptions about personal responsibility for challenges) impact their affective and behavioral intentions (Weiner, 1993). Research from outside the field of autism research has shown that insufficient knowledge and a lack of information are associated with negative attitudes toward those perceived as different (Matusitz, 2012). Specifically, the perceived controllability (i.e., intentionality and responsibility of challenging behaviors) of disability-related symptoms was found to reduce supportive emotions and helping behaviors toward disabled individuals (Schwarzer & Winer, 1991). Although studies focused on attitudes toward autistic people have generally reported associations between knowledge and attitudes toward autistic people (Gillespie-Lynch et al., 2019; Kuzminski et al., 2019), emerging evidence suggests that attribution theory may be more relevant for understanding attitudes toward autistic people in more culturally tight contexts, like South Korea and China (Kim & Gillespie-Lynch, 2022).

Cultural Theories

Several cross-cultural studies found that individuals living in non-Western countries (e.g., Lebanon, Japan, or South Korea) tend to report greater autism stigma (measured by desired social distance from autistic people) than individuals living in Western countries

(e.g., North America, Europe, and Australasia; Gillespie-Lynch et al., 2019; Kim et al., 2021; Someki et al., 2018), suggesting that culture-related factors affect attitudes toward autistic people. Such cultural differences can be attributed to cultural value orientation theory, which represents basic core beliefs about social relationships in a culture (Triandis & Gelfand, 1998), particularly collectivistic or individualistic tendencies of non-Western and Western countries, respectively.

Although cross-cultural psychology has often focused on individualism versus collectivism (i.e., the extent to which group cohesion or individual pursuits are prioritized), more recent research has problematized binary comparisons, including by exploring a vertical versus horizontal dimension (i.e., the extent to which hierarchy is emphasized or de-emphasized, respectively), which is orthogonal to the collectivism/individualism dimension, resulting in four separate quadrants (Triandis & Gelfand, 1998). Recently, Gillespie-Lynch et al. (2019) demonstrated that individual-level vertical orientation, not collectivism, was positively associated with stigma toward autistic people. This finding supports a broad body of literature suggesting that acceptance of inequality as a part of natural human interaction, which has been reported to be influenced by culture, contributes to stigma toward people who are different in terms of immigration status, race, sexuality, or disability (Craig & Richeson, 2014; Ekehammar et al., 2004).

Applications of cultural value orientation theory to autism research laid a foundation for investigations of other culture-related variables such as cultural tightness, which refers to the strengths of a society's norms and intolerance of deviant behaviors (Gelfand et al., 2011). Homogeneous and collectivistic cultures such as South Korea tend to have clearly defined social norms which contribute to more negative attitudes toward people who may show perceived deviant behaviors than are apparent in otless culturally tight cultural contexts like the United States (Jackson et al., 2019; Kim et al., 2021). Kim et al. (2021) demonstrated that

individual-level cultural tightness was associated with autism stigma among Koreans but not Americans (Kim et al., 2021).

Trait Theory

Trait theory is an approach to understanding human personality that suggests that traits—defined as individual differences that show relatively consistent and stable patterns of behaviors, thoughts, and feelings—shape human behaviors (McCrae & Costa, 2007). Trait theory informs the autism attitude literature by suggesting ways that individual personality variables may be associated with attitudes toward autistic people. Importantly, these trait variables are often intricately interrelated with culture or socialization theory because cultural expectations may impact how people are socialized to have specific individual traits (Triandis & Suh, 2002).

McCrae and Costa's (1987) five-factor model introduces five trait personality factors that characterize human social behaviors and emotional responsiveness (McCrae & Costa, 1987): openness (i.e., a preference for novelty and intellectual curiosity), conscientiousness (i.e., a preference for organization and discipline), extraversion (i.e., a high degree of sociability and talkativeness), agreeableness (i.e., the tendency to be caring and sympathetic), and neuroticism (i.e., the tendency to exhibit emotional negotiability and instability). Gillespie-Lynch et al. (2019) found that openness is associated with stigma toward autistic people. People with heightened openness tend to appreciate unconventional ideas and people (Flynn, 2005) and may, therefore, show more favorable attitudes toward autistic people. However, none of the Big Five personality traits, when measured with the Ten-Item Personality Inventory (Gosling et al., 2003), a brief, condensed measure assessing each of the Big Five traits with two items each, was associated with non-autistic people's first impressions of autistic people (Sasson & Morrison, 2019).

Although often not explicitly described in this way, trait theory may also underlie examinations of potential associations between non-autistic people's autistic traits and their attitudes toward autistic people. For example, Matthews et al. (2015) found that participants with higher levels of self-reported autistic traits (i.e., broad autism phenotype characteristics) reported more negative attitudes toward autistic people. They speculated that individuals with more autistic characteristics may be more reluctant to initiate social interactions and less likely to get along well with a hypothetical autistic character. However, these findings have been disputed by other studies showing no associations between non-autistic people's autistic traits and their attitudes (e.g., Gillespie-Lynch et al., 2021; Sasson et al., 2019).

Internal Consistency of Instruments Measuring Non-Autistic People's Characteristics

Previous studies informed by various theoretical frameworks imply that various characteristics of non-autistic people contribute to or are intertwined with their attitudes toward autistic people. However, these associations vary drastically across studies. This lack of consistency is at least partially attributable to researchers exploring varied constructs with different instruments. This wide range of instruments used to assess non-autistic people's characteristics insinuates that the internal consistency of the instruments may also vary across studies. Instruments with insufficient internal consistency increase the possibility of differential item functioning (i.e., systematic variations in participants' responses to specific items depending on the participants' characteristics; Cook & Beckman, 2006). Lack of information about the internal consistency of some instruments used to measure characteristics adds to the complications of synthesizing extant findings. However, no previous review has attended to this issue.

The Current Study

This systematic review aimed to explore which and how rater characteristics have been studied and measured in relation to attitudes toward autistic people, to identify areas of

consensus and gaps in the current autism attitude literature, and to inform future research on associations between raters' characteristics and their attitudes toward autistic people. This study consisted of two parts: a) a narrative synthesis exploring how different characteristics of non-autistic samples have been studied in relation to their attitudes toward autistic people, and b) a meta-analysis intended to determine which characteristics of non-autistic samples are associated with attitudes towards autistic people.

Specifically, this study aimed to address the following research questions (RQs). We conducted a narrative synthesis to address the first RQ and a meta-analysis to address the second RQ.

RQ1. How have non-autistic people's characteristics been examined and measured in the autism literature in relation to attitudes toward autistic people? Specifically, are the instruments utilized to measure the characteristics internally consistent, and what theories do researchers report as motivating their studies?

We consider clear statements of theoretical motivation important because they provide the underlying logic for hypotheses and research methods (Corvellec, 2013). Additionally, we examined the internal consistencies of the instruments to understand the replicability and consistency of the measures (Bowling, 2009; Frost et al., 2007).

RQ2. Are non-autistic people's age, gender, prior contact with autistic people (quality and quantity), autism knowledge, and autistic traits associated with attitudes toward autistic people?

The purpose of the meta-analysis was to synthesize the reported findings of the primary studies in a subset of rater characteristics included in the narrative synthesis, where it was possible to do so. Based on previous findings, we hypothesized that accurate autism knowledge and quality and frequency of contact with autistic individuals would be positively associated with attitudes toward autistic people (Gardiner & Iarocci, 2014; Gillespie-Lynch et

al., 2019; Kim et al., 2021). We did not formulate any specific hypotheses regarding age, gender, or autistic characteristics because research testing associations with these variables has been mixed. We selected these variables because previous studies suggest that they may be associated with attitudes toward autistic people, and we anticipated that there would be sufficient research about the associations to conduct a meta-analysis.

Methods

Search Strategy

In August 2021, we conducted a systematic search of peer-reviewed literature in PubMed, PsycINFO, ERIC, and Education Source using the following terms in the title, abstract, and main text search fields: (autis* OR Asperger*) AND (attitud* OR stigma OR knowledge OR aware* OR accept* OR openness OR "social distance"). We used Mendeley to organize the studies and remove duplicates. The inclusion criteria for the narrative synthesis were that: (a) articles were published in English after 1970, (b) studies collected quantitative data, and (c) studies reported associations between primarily non-autistic sample's self-reported attitudes toward autistic people (or attitudes of participant sample that primarily consisted of non-autistic people; i.e., less than 10% are autistic people) and at least one characteristic of the non-autistic participants.

Adapting Eagly and Chaiken's (1993) definition, attitudes were defined as the personal, psychological tendency to evaluate autistic people or autism positively or negatively. We considered any attribute of the raters or their context as the raters' characteristics. We included intervention studies only if they reported pre-intervention associations between attitudes toward autistic people and non-autistic raters' characteristics. We excluded studies that reported associations between rater characteristics and in-service or pre-service teachers' attitudes toward inclusive education of autistic students because instruments measuring attitudes toward inclusive education often included items that did not

assess attitudes about autism per se, and instead measured constructs such as perceived efficacy regarding facilitating inclusive education for autistic students, attitudes toward inclusive education itself (e.g., "I believe that inclusion facilitates socially appropriate behavior amongst all students"; Mahat, 2008), or qualifications of teachers (e.g., "A good teacher can do a lot to help an autistic child"; Olley et al., 2018). We also excluded studies that involved surveys for which we could not access the full list of items or which did not separate knowledge from attitudes. Studies that reported associations between rater characteristics and attitudes toward other disabilities (e.g., attitudes toward autism and schizophrenia combined) or attitudes toward autistic and non-autistic people combined were excluded.

Studies selected for the narrative synthesis were also included in the meta-analysis if the authors supplied Pearson's *r* (or partial *r*) between the variables of interest (i.e., age, knowledge, quality and quantity of contact, and autistic traits) and self-reported quantitative measures of attitudes toward autistic people or autism and/or the means and standard deviations of self-reported attitudes by gender (women vs. men). The definitions of key rater characteristics are presented in Table 1. We selected Pearson's *r* and standardized mean differences of attitudes by gender as the effects of interest, as these metrics were the most frequently reported across the included studies. Studies that reported associations between attitudes and age of participants within the same school level were included in the narrative synthesis, but their correlations were not included in the meta-analysis, considering the limited variability of participants' age. Including the effect sizes from the participants within the same school level did not change the significance pattern of the findings. Additionally, as some studies included in the narrative synthesis measured self-reported attitudes and potentially correlated variables of interest but did not report any relevant associations, we contacted these studies' authors to request unpublished findings that fit our inclusion criteria.

Screening and Coding Procedures

SYK conducted an initial screening of the titles and abstracts. Subsequently, SYK and DYS read 121 articles in full and independently assessed them for inclusion, resulting in 47 reports for the narrative synthesis. The two coders' rates of agreement on inclusion/exclusion decisions for the narrative synthesis were 88.9% and 93.9%. All discrepancies were resolved via discussion. The preferred reporting items for systematic reviews and meta-analyses (PRISMA) flow diagram details the process we used to locate and select studies (Figure 1).

Two coders independently reviewed all included studies and extracted the following information for the narrative synthesis: participant characteristics (i.e., sample size, chronological age, percentage of male participants, education level, ethnicity, relationships to autism, and whether the primary study included autistic participants), study characteristics (i.e., publication year and country), the attitude measure used, characteristics of instruments used to measure non-autistic participants' characteristics (the types of instrument used and the internal consistency of the instrument reported for the study sample), and reported associations between attitudes toward autistic people and rater characteristics.

During the second round of coding, we further coded the internal consistencies of the instruments used to measure non-autistic participants' characteristics, and the theoretical framework (if any) the authors of the primary studies drew upon to motivate testing associations between characteristics and attitudes about autistic people. The level of coding for internal consistency and theoretical motivation was by characteristic examined in each study, not by study, because some studies included more than one instrument to measure a single construct and, therefore, reported two different internal consistency measures for each instrument. The internal consistency of rater characteristics was coded as acceptable (alpha $\geq .7$), not acceptable (alpha $< .7$), not reported, or not applicable (e.g., single-item measure)

based on criteria set by Nunnally (1978). We coded internal consistency because it was the most commonly reported measure of psychometric validation across studies.

We also coded whether the selection of participants' characteristics was accompanied by a clearly articulated theoretical framework. A theoretical framework was defined as a structure developed from previously published and tested research that becomes the basis of the data analysis and interpretations (Kivunja, 2018; Swanson, 2013). Characteristics that were not accompanied by a theoretical rationale were further coded into three categories to determine any kind of rationale for examining the association was provided: 'includes an empirical rationale for hypothesis' (i.e., presented empirical findings from previous studies as a rationale), 'includes hypothesis only,' and 'no rationale' (no hypothesis or conceptual or empirical rationale for investigating the rater characteristics is mentioned).

Among the 47 studies included in the narrative synthesis, 36 either included Pearson's *r* or means and standard deviations for the variables of interest in the meta-analysis, or the researchers sent us the effect sizes of interest. The two coders' rate of agreement on inclusion/exclusion decisions for the studies included in the meta-analysis was 93.9%. For the categorical variables, the two coders' kappa agreements ranged from .72 to .89. For continuous variables included in the narrative synthesis, the intraclass correlation coefficients ranged from .94 to 1, and the intraclass correlation coefficients of continuous variables included in the meta-analysis ranged from .92 to 1. The coding manual is available on the Open Science Framework (https://osf.io/kqvst).

Data Analysis

To address the first research question, we conducted a final round of coding to categorize participants' characteristics measured in studies included in the narrative synthesis. We inductively developed a coding manual for grouping characteristic subcategories into categories (i.e., demographic characteristics, knowledge, contact, trait and

personality factors, and other). Each rater characteristic in the 'other' category has mostly been studied by one or two studies so it was not feasible to further categorize these variables. Table 2 provides definitions and examples of characteristics for each category. We reorganized the tallies of internal consistency and theoretical motivation according to their corresponding categories.

To address the second research question, we used the robust variance estimation approach—which corrects for the clustering of effect sizes within overlapping participant samples and accounts for the non-independence of effect sizes—using the ROBUMETA macro in Stata with the random weights option. We adopted the robust variance estimation approach because most included studies provided more than one effect size, thus violating the assumption of effect sizes' independence, which is required for traditional parametric meta-analytic methods (Hedges et al., 2010). We synthesized Pearson's correlations calculated between attitudes and: age, autistic traits, autism knowledge, contact quality, and contact quantity. Based on Borenstein et al.'s (2009) recommendations, we transformed Pearson's *r* values to Fisher's *z* prior to analysis. Fisher's *z*s were subsequently converted back to Pearson's *r*s to report results. We synthesized standardized mean differences with a small sample size correction (Hedge's *g*) to generate a summary effect for gender differences in attitudes. We constructed unconditional meta-regression models to estimate the effect sizes without including covariates as moderators when calculating the effect sizes for attitudes and each correlate. We created a forest plot with the summary effects and confidence intervals around the estimates to visualize the distributions of estimates.

Results

Summary of Participant and Study Characteristics for the Narrative Synthesis

Summaries of the participants' characteristics and general study characteristics of each study included in the narrative synthesis are included in Supplementary Tables S1. The

47 studies (see the Open Science Framework for a list of included studies; https://osf.io/jpdhv) included 19,859 participants (36.6% male; mean age = 21.7 years; age range in years = 5–69; average sample size = 422). The studies most frequently surveyed undergraduate students (54.6%), followed by school-aged students (e.g., high school students; 20.5%), adults who were not specified as undergraduate students (13.6%), and combined age groups (e.g., elementary students and their parents; 11.4%). Of the 24 studies that reported race, 19 (79.2%) included predominantly White participants. Thirteen studies (27.7%) included data from non-Western countries, including China, Israel, Japan, Lebanon, Malaysia, Singapore, South Korea, and Turkey. The studies' publication years ranged from 2004 to 2022 (mode = 2021). Of 23 studies (48.9%) that reported participants' relationships to autism, 11 studies (23.4%) specified that their participant sample included individuals with an autistic family member (range of participants with an autistic family member = 5.6%-29.9%). Ten studies (21.3%) included autistic participants (range of autistic participants = .5%-9%), and 30 studies (63.8%) did not mention whether autistic participants were included in their studies. Supplementary Table S2 presents the details of the participants' relationships to autism and whether the primary study included autistic participants. Fourteen studies (29.8%) measured attitudes using more than one instrument, and 34 different questionnaires were employed across all 47 studies. The Social Distance Scale (Gillespie-Lynch et al., 2015; *n* = 15; 31.9%) was most frequently used, followed by the Openness scale (Harnum et al., 2007; *n* = 8; 17.0%), Multidimensional Attitude Scale Towards Persons with Disabilities (Findler et al., 2007; *n* = 4; 8.5%), the Shared Activities Questionnaire (Morgan et al., 2000; *n* = 4; 8.5%), and the Adjective Checklist (Siperstein, 1980; Siperstein & Bak, 1977; *n* = 3; 6.3%). The Attitude Survey Towards Inclusive Education (De Boer et al., 2012), the First Impression Scale (Sasson et al., 2017), and the willingness to interact questionnaire

(Gardiner & Iarocci, 2014) were each used in 4.3% of the studies (*n* = 2). The remaining measures were only used once.

Summary of Non-autistic Participants' Characteristics for the Narrative Synthesis

There were five categories of characteristics for which researchers reported associations with attitudes about autistic people, each of which had several subcategories. Associations between demographic characteristics and attitudes were most frequently reported (*n* = 40; 85.1%), followed by 24 studies reporting associations with contact-related variables (contact quantity, *n* = 23, 48.9% and contact quality, *n* = 8, 17%). Associations between attitudes and knowledge and those between attitudes and trait and personality variables were examined in 22 (46.8%) and 16 studies (34%), respectively. Twelve studies (25.5%) examined associations with attitudes and factors categorized as others.

Here, we report three characteristic subcategories most frequently reported for each category. We also report three measures that have been most frequently utilized to assess each characteristic subcategory. For the characteristics that have been primarily measured by one or two instruments, we present all types of instruments used.

Among the demographic characteristics category, gender (*n* = 34), age (*n* = 24), and education (*n* = 18) were most commonly examined. All gender variables were measured as a dichotomous variable consisting of female vs. male (i.e., non-binary or other genders were not considered). Age was measured as chronological age (*n* = 21) or school grade level (*n* = 3). Education was measured using the level of education (*n* = 7), college major (i.e., helping vs. non-helping major, Science, Technology, Engineering or Mathematics (STEM) vs. non-STEM; *n* = 7), or having had previous training related to special education (*n* = 4).

Within contact-related variables, associations with contact quantity (*n* = 24) and quality (*n* = 8) were reported. Contact quality was frequently measured by asking the level of exposure/contact with autistic individuals (*n* = 9). Of the nine studies, six utilized the Level

of Contact Report Instrument (Holmes et al., 1999; Gardiner & Iarrocci, 2014; *n* = 6), which includes 12 ranked levels of types and intimacy of contact with autistic people. Others utilized dichotomous variables asking whether participants have had any contact with an autistic individual (*n* = 4) or had an autistic nuclear family member (*n* = 4). Contact quality was most often measured by one-item measure asking about perceived pleasantness or positiveness of previous contact with autistic individuals (*n* = 4). Other studies also asked participants to indicate perceived positive quality (e.g., enjoyable, fun, friendly, worthwhile, or genuine) of previous contact with autistic individuals with 4-6 items (*n* = 4).

Knowledge about autism was most often measured by the Autism Awareness Survey (Stone, 1987; Tipton & Blacher, 2014; *n* = 9), the Autism Stigma and Knowledge Questionnaire (Harrison et al., 2017; *n* = 4), or a set of question items developed by the authors (*n* = 3). These instruments all measured how accurately participants could identify statements about autism.

Among trait and personality factors, associations with autistic traits (*n* = 11), cultural orientation (*n* = 5), and social desirability bias (*n* = 4) were most frequently examined. Autistic traits were measured by self-rated questionnaires such as the Autism Spectrum Quotient (AQ; *n* = 4; Baron-Cohen et al., 2001), Broad Autism Phenotype Questionnaire (BAPQ; *n* = 3; Hurley et al., 2007), or the Ritvo Autism and Asperger diagnostic scale (RAADS-14; *n* = 2; Eriksson et al., 2013). Cultural orientation was always measured using the Cultural Orientation Scale by Triandis and Gelfand (1998; *n* = 5). The 14-binary item version of the Marlowe-Crowne's social desirability questionnaire (*n* = 3; Reynolds, 1982) was most frequently used to measure raters' susceptibility to social desirability bias, with one study using the Balanced Inventory of Desirable Responding (PaulHus, 1984).

Lastly, variables categorized as 'other' included factors associated with disabilities other than autism (e.g., attitudes toward conduct disorders; *n* = 5), features of the participant's

context (e.g., average annual cost of the university, whether the university is private vs. public, or perceived support from a school; *n* = 2), or autism-specific beliefs (e.g., whether autism impacts marriageability of relatives; *n* = 2).

Internal Consistency of the Instruments Measuring Rater Characteristics

We present the findings on internal consistency and theoretical motivation by measure used to index characteristics of participants, not by study. Across characteristic categories, 148 out of 211 measures were assessed using one item and therefore did not report internal consistency (70.1%). Of the 63 measures that used more than one item, internal consistency was not reported for 18 measures (28.6%). Seventeen (37.8%) measures of characteristics reported an alpha level lower than .70, and 28 measures (62.2%) reported a value greater than or equal to .70. Table 2 presents the summary of internal consistency reports by characteristic category.

Theoretical Motivations

Across all characteristic categories, the selection of only 7% of characteristics was described as being motivated by a particular theory (*n* = 15). See Table 2 and Supplementary Table S3 for the tallies of theoretically motivated characteristics by category (e.g., demographic characteristics) and by detailed sub-categories (e.g., age) of characteristics. Cultural value orientation theory (Triandis & Gelfand, 1998), which supports the examination of country-level differences or the associations between attitudes and the spectrum of collectivism vs. individualism or vertical vs. horizontal orientation, was most frequently used (*n* = 8). This was followed by intergroup contact theory (*n* = 6; Allport, 1954), which theorized associations of attitudes toward autistic people with knowledge (*n* = 1) and the quality and quantity of previous contact with an autistic person (*n* = 5). Attribution theory (Weiner, 1993) and social group contact theory (Tajfel & Turner, 1986) were each referenced once to support examinations of knowledge and intergroup contact, respectively.

A total of 118 (56%) characteristics were selected based on empirical evidence from previous studies without reference to theory. Furthermore, 7% of the characteristics (n = 15) were accompanied by hypotheses but without reference to an empirical or theoretical rationale, and 30% of the characteristics (n = 63) were not accompanied by any hypotheses. Supplementary Table S4 provides detailed descriptions of each characteristic variable, the internal consistency of the instruments used to measure it, theoretical motivations, and reported outcomes on the associations between rater characteristics and attitudes. Aside from conducting the meta-analysis, we did not narratively synthesize the reported findings because we anticipated drastic variations in the statistical methods used to analyze the associations or in the operationalizations of similar constructs, which would have prevented a fair comparison across studies.

Results of the Meta-Analysis

The 36 studies analyzed included 16,520 total participants (an average of 459 participants per study; 35.5% male) with a grand mean age of 21.8 years. The forest plot in Figure 1 presents the results of the meta-analyses. We found significant and positive Pearson's r overall effect size estimates for associations between attitudes towards autistic people and autism knowledge ($p < .0001$), quality ($p = .0001$) and quantity of previous contact ($p = .03$). The effect size for Hedge's g generated from the unconditional models comparing female and male participants' attitudes was also significant ($p = .03$), with women showing more positive attitudes than men. The summary effect quantifying correlations between attitudes with age ($p = .83$) and autistic characteristics ($p = .34$) were not significant. The participant and study characteristics of the articles included in the meta-analysis are summarized in Supplementary Table S5. One-hundred twenty-one effect sizes were collected from published manuscripts, and 118 effect sizes were supplied by the authors upon request. We conducted simple meta-regressions with information source entered as a moderator in the

relationships between the variables of interest and attitudes to examine if the effect sizes differed depending on whether data originated from published articles or data were supplied by the authors upon request. The information source was not a significant moderator in any meta-analysis models (*ps* > .05).

Discussion

This systematic review describes how associations between characteristics of non-autistic people and attitudes toward autistic people have been examined in research and demonstrates that the included studies: a) most frequently targeted undergraduate students as participants; b) examined how attitudes toward autistic people are associated with demographic characteristics, knowledge, previous contact, trait and personality factors, or other factors; c) often utilized measures that consist of only one item, did not report the internal consistency of the instruments, or utilized instruments with an alpha level lower than .70; and d) did not provide theoretical motivations for investigating characteristics of interest. Additionally, the results of the meta-analysis revealed that attitudes toward autistic people were significantly associated with participants' gender, knowledge about autism, and quality and quantity of previous contact with autistic people, but not with their age or autistic traits.

How Have the Associations Between Rater Characteristics and Attitudes Toward Autistic People Been Examined in Autism Literature?

The narrative synthesis of participant characteristics revealed that more than half of the studies included in this review surveyed undergraduate students, and the mean age of the participants was in their early 20s. This suggests participation bias toward individuals from younger generations with relatively high educational backgrounds. Studies conducted with individuals who did not attend college or focused on older generations could yield different findings, and there is currently an over-representation of studies within educational settings.

Further, despite the recent increase in cross-cultural studies (Gillespie-Lynch et al., 2019, 2021; Kim et al., 2021; Someki et al., 2018), most studies have been conducted in the United States or the United Kingdom and have predominantly included White participants. This pattern is problematic because culture impacts how we interpret others' behaviors, and specific autistic characteristics may be more or less accepted depending on the cultural background (Golson et al., 2022). Nevertheless, how cultures shape the associations between rater characteristics and attitudes across and within countries remains largely unexamined.

The proportion of participants who had an autistic family member varied across studies, with close to half of studies not reporting participants' relationships to autistic people or whether they included autistic participants in their sample. Meanwhile, Gillespie-Lynch et al. (2017) showed that autistic people tended to have different conceptualizations about autism as compared to non-autistic people (e.g., reduced tendency to view autism via a deficit-based medical model), and autistic people and their nuclear family members reported lower stigma toward autism when compared to non-autistic people. This suggests that participants' relationships to autism should be taken into account when interpreting findings and that future studies examining attitudes toward autism need to specify participants' relationships to autistic people.

While most studies focused on personal characteristics or experiences with autism or knowledge, only six measures from two studies examined factors related to participants' social contexts. Some of these contextual factors may impact personal attributes, which, in turn, are related to attitudes toward autistic people. For instance, Kim (2021) found that staff members of disability support offices of institutions with a larger student body reported more accurate knowledge about autism. Kim (2021) speculated that this could be because the staff members at larger institutions may have more experience working with greater numbers of autistic students with diverse characteristics and therefore have more knowledge about

autism. This finding suggests that contextual variables should be considered alongside individual-level variables to allow for an understanding of how systemic issues are associated with attitudes toward autistic people. Den Houting et al. (2021) also argued that current efforts to reduce individual-level autism stigma have often been limited in their scope and highlighted the importance of multi-level approaches incorporating structural factors that may contribute to autism stigma.

To What Degree Are Instruments Measuring Characteristics of Non-Autistic People Reliable?

Most individual-level trait and personality factors were described as having sufficient internal consistency, perhaps because these rater characteristics were often measured using relatively well-established instruments with multiple items (e.g., the Broad Autism Phenotype Questionnaire; Hurley et al., 2007). However, studies often did not report internal consistency, or they used one-item instruments or ranked items. Although using one-item measures is often inevitable and necessary, extensive use of single-item measures, particularly for quality and quantity of contact, may call for a better operationalization of the constructs. For instance, one-item measures of contact quality assume that positive and negative contacts are opposite ends of a single spectrum of contact experience. Yet, Stephen et al. (2002) measured the frequency of various types of negative experiences with outgroup members (e.g., made them feel unwanted or intimidated), and treated negative contact as a stand-alone construct with multiple subordinate dimensions of negative quality. Further, Aberson and Gaffney (2008) conceptualized positive and negative contact as separate, yet related, constructs and utilized instruments measuring negative contact experience with any outgroup member alongside a measure of quality of contact with close outgroup friends. These studies demonstrate diverse ways that contact quality can be operationalized and suggest that single-item measures of contact-related variables may not comprehensively

capture the nuances of different kinds or valence of contact, each of which may be differently associated with attitudes toward autistic people.

Furthermore, some knowledge variables were measured using instruments with alpha lower than .70. This indicates that instruments used to measure knowledge are susceptible to measurement error (Tavakol & Dennick, 2011) and suggests the need for caution when interpreting the findings from studies where these measures are used.

To What Degree are Existing Approaches Theoretically Motivated?

Strikingly few studies described a theoretical rationale for testing associations between attitudes and particular characteristics, and most referenced empirical findings to support the hypotheses or did not provide hypotheses. This pattern consistently occurred across all characteristics categories. We now discuss how the extant literature relates to different theories.

Allports' (1954) intergroup contact theory was the second most frequently referenced theoretical framework used to examine associations between attitudes and specific characteristics. However, compared to the components highlighted in intergroup contact theory—which emphasizes equal status cooperation toward a common goal, supported by authorities (Allport, 1954)—existing studies mainly operationalized contact in terms of the quality and quantity of previous contact. Exploring what specific aspects of contact (whether the contact with autistic people was as equals or the nature of contact was cooperative) are associated with attitudes could offer a deeper understanding of how intergroup contact theory could be applied to improve the public's attitudes toward autistic people.

Attribution theory was mentioned once as a theoretical motivation for examining the association between knowledge and attitudes (De Vries et al., 2020). Although Payne and Wood (2016) did not explicitly mention attribution theory, they included findings relevant to attribution theory. Undergraduate students with more accurate knowledge about autism

attributed more controllability to autistic characters, which was also correlated with greater intention to punish and reduced intention to help. Based on these findings, Payne and Wood (2016) emphasized the importance of supplementing factual autism knowledge training with sensitivity training that increases understanding of the controllability of autistic characteristics. Some cross-cultural studies suggest that attribution theory may be more relevant for understanding stigma toward autistic people in more culturally tight cultures such as China and South Korea (Lu et al., 2021; Kim & Gillespie-Lynch, 2022). Yet, due to the lack of previous studies that referenced attribution theory as a theoretical motivation or specifically examined factors associated with attribution theory in the autism attitude literature, it is unclear how attribution theory aids the understanding of the association between knowledge and attitudes toward autistic people across cultures.

Among culture-related theories, cultural value orientation theory (Triandis & Gelfand, 1998) was directly referenced as a theoretical motivation for examining country-level differences and vertical orientation (e.g., Gillespie-Lynch et al., 2019). While Hofstede (1983) examined cultural value orientation on a national level, treating each country as a data point, research on attitudes toward autistic people often adopted the theory as an individual-level variable, focusing on variations between people in a country (Gillespie-Lynch et al., 2019). Vertical orientation and cultural tightness were measured in cross-cultural studies (Gillespie-Lynch et al., 2019; Kim et al., 2021) as individual-level variables. Considering the well-established impact of cultures on attitude formation (Shafahat, 2020), more studies investigating how specific cultural factors that vary across and within countries relate to attitudes toward autistic people, or how the associations between specific rater characteristics and attitudes vary across cultures, are needed to develop culturally specific autism trainings.

Although none of the included studies explicitly articulated socialization and trait theories as theoretical motivations, we found several studies relevant to these theories. For

instance, socialization theories may have accounted for associations between some demographic factors such as age cohort and gender and autism stigma. Some variables in the trait and personality category, such as openness to experience (Gillespie-Lynch et al., 2019; Kim et al., 2021) and autistic traits (Matthews et al., 2015; we discuss the issue of autistic traits in more detail later), were also aligned with trait theories. Explicit references to some theories, such as trait, socialization, and cultural theories, may be lacking because these theories need to be applied simultaneously to provide a comprehensive understanding of associations between rater characteristics and attitudes toward autistic people. For instance, socialization theory may be connected to cultural theories in that socialization processes involve understanding and following a group's cultural norms and using such norms as skills to interact with others (Eggan, 1970). Attitude formation is a product of a multifaceted interplay among cultural factors, individual-level traits, and socialization processes, making it difficult to disentangle one theory from another. More systematic studies exploring how different theories can be applied through a cultural lens to understand potential associations between attitudes and rater characteristics in specific contexts are needed.

How are Age, Gender, Knowledge, Contact, and Autistic Traits Associated with Attitudes toward Autistic People?

In this meta-analysis, we found that attitudes toward autistic people were significantly associated with participants' knowledge about autism and the quality and quantity of previous contact with autistic people. These findings highlight the importance of increasing the public's autism knowledge and providing more opportunities for frequent and high-quality cooperative contact to improve people's attitudes toward autistic people, as suggested by numerous previous studies (Gillespie-Lynch et al., 2015; 2019; Kim et al., 2021). Yet, the analyses conducted in this study are correlational and, therefore, do not imply causal relationships. It could be that an individual's positive attitude toward autistic people

motivates them to have more positive or frequent contact with autistic people, rather than the reverse. Furthermore, a possible third variable (e.g., previous experience attending autism training or that contact measures are often highly similar to social distance measures, except that they are projected at the past rather than into the future) that we did not account for in the meta-analysis could explain the positive associations between knowledge and attitudes.

Women reported more positive attitudes toward autistic people than men. This gender difference aligns with gender socialization theory, which suggests that women may be less likely to discriminate against others because they themselves have experienced discrimination and may be less likely to believe that social inequality is just than men (e.g., Corrigan & Watson, 2007), are often socialized to appear more socially desirable (Cohen et al., 2001; Park & Chitiyo, 2011) or to be more empathic and adjusted to others' feelings than men (Hoffman, 1977; Lennon & Eisenberg, 1987; Löffler & Greitemeyer, 2011). However, these conjectures are merely speculative.

Although we found insignificant associations between age and attitudes, different patterns may be found when only examining associations among children. Along with cognitive development, children in kindergartens and grade schools start to understand the concept of ingroup and outgroups and form prejudice and attitudes toward various outgroups (e.g., disability and race; Black-Gutman & Hickson, 1996; Favazza & Odom, 1997). As they grow, older children tend to inhibit expressions of ingroup bias as they start to learn social norms and become more sensitive to social desirability bias (Rutland et al., 2005). For instance, elementary school students' explicit attitudes toward autistic peers improved with age, though their implicit attitudes remained constantly negative (Aube et al., 2021). There were not enough studies that reported correlations between age and attitudes among children in particular to conduct a sub-analysis in this review. However, associations between the age

and attitudes of non-autistic children may differ depending on participants' age and the type of instruments used to measure their attitudes.

Finally, non-autistic people's autistic traits were not correlated with their attitudes toward autistic people. This may be because non-autistic people may not be aware of their autistic traits and conceptualize their autistic traits as qualitatively different from those of autistic people, thereby evaluating autism or autistic people as positive or negative regardless of their own autistic traits. Non-autistic people with greater broad autism phenotype characteristics are more likely to be relatives of autistic individuals (Hurley et al., 2007), and their attitudes may be more related to their relationships with the particular autistic individual rather than their own level of autistic traits. The current lack of a theoretical basis for examining this variable and insignificant meta-analytic associations between autistic traits and attitudes toward autistic people implies that autistic traits do not account for attitudes toward autistic people and that it may be the time to redirect resources to identify other rater characteristics that may be more important, such as cultural differences.

Implications

Findings from this review suggest several potential avenues for future research. First, the general lack of theoretical background for studying rater characteristics necessitates more systematic examinations of factors affecting attitudes toward autistic people. Considering that the mode of the year published is 2021, the literature examining associations between attitudes and characteristics of non-autistic people is a relatively emerging area of autism research, and we are at a point where researchers can improve how they examine these associations. Future studies should be more systematically conducted with research questions formulated based on theories and clearer operationalization of constructs.

While the meta-analytic findings showed that accurate knowledge is correlated with positive attitudes, most current anti-autism stigma programs intended to increase autism

knowledge have reduced explicit negative attitudes toward autistic people (Gillespie-Lynch et al., 2015; Jones et al., 2021), suggesting that knowledge has a causal impact on attitudes towards autistic people. However, *why* knowledge leads to positive attitude changes and *what types* of knowledge contribute to these changes remains unclear, particularly because of the aforementioned issues with the internal consistency of autism knowledge measures. Additional work on this topic could pinpoint the types of knowledge that have the most impact on attitudes.

Limitations

There are several limitations to consider when interpreting the findings of this study. First, this study did not separately examine how specific characteristics are associated with specific types of attitudes. Attitudes are complex constructs, and the narrow definition of attitudes used in this study may have caused us to neglect some constructs related to attitudes toward autistic people that may impact the public's views toward autism (e.g., how others think about autism or attitudes toward inclusive education of autistic students). Further, the variability in the constructs and psychometric properties of instruments used to assess attitudes toward autistic people may also contribute to the inconsistent findings across the studies, and this issue should be explored in a future study.

Second, by including studies that examined the association between rater characteristics and their attitudes among primarily non-autistic participants, some studies included in this review included autistic participants. However, we could not conduct a sub-group analysis because the portions of autistic sample were relatively small when any were included. This suggests the need for future studies investigating how the associations between non-autistic people's characteristics and their attitudes toward autistic people differ from those of autistic people. Third, our structured search did not include 'gray literature,' which should be included in future work to determine if the same patterns are reported. Fourth, the

findings from the meta-analysis were limited by the relatively small number of primary studies, which also varied in terms of the number of effect sizes and quality of measurements. For instance, since few studies have examined attitudes toward autistic people cross-culturally, synthesizing the summary effect size for cultural differences necessitated combining widely diverse cultures into one group. Thus, we did not conduct a meta-analysis examining cultural differences in attitudes.

Conclusions

This review systematically examined research on associations between attitudes toward autistic people and characteristics of non-autistic people. Based on the findings, we suggest the need for future research that:

a. Includes a wide range of participants in terms of age, educational background, and ethnicity;

b. Focuses on system-level or institution-level variables (e.g., perceived organizational support, awareness of public policy on diversity-related issues) to incorporate structural factors that contribute to attitudes toward autistic people;

c. Sorts through which specific types of contact quantity and knowledge about autism improve people's attitudes by clearly defining operationalizations of constructs and improving measurement systems to yield more consistent and reliable findings; and

d. Is properly situated in theoretical frameworks and conducts mediation or moderation analyses to clearly explain mechanisms underlying associations between rater characteristics and attitudes.

These efforts will improve the quality of future autism attitude research and inform the development of effective anti-stigma training by suggesting what contents should be included to help specific types of people understand and appreciate autistic people better.

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Table 1.

Definitions of Key Variables Included in the Meta-Analysis

Key variables	Definitions
Age	The length of time that someone has lived (i.e., ages in year). We did not include the correlation if participants were all in the same school level.
Gender	Self-reported gender identity. Studies did not differentiate between the two and relied on the participant report. None of the studies computed the means and standard deviations from participants outside the man/woman binary.
Autistic characteristics	The self-report of individuals' expression of autistic traits and behaviors (e.g., Broad Autism Phenotype Questionnaire, or BAPQ, measuring subclinical expression of autism phenotype, and Autism Spectrum Quotient, or AQ, a self-administered questionnaire measuring autistic traits adults with IQ > 80)
Autism knowledge	The extent to which individuals can correctly identify social, emotional, or behavioral traits and general features of and facts about autism (e.g., Participatory Autism Knowledge-Measure, or PAK-M, that asks participants to respond to true-or-false statements about autism; Autism Survey Questionnaire, or ASQ, that measures general beliefs about autism such as autistic children having special talents or abilities)
Quality of previous contact	The extent to which individuals evaluate their previous contact with autistic individuals as positive (e.g., pleasant, enjoyable, or fun) or negative (e.g., unpleasant, difficult, or uncomfortable)
Quantity of previous contact	The frequency and intimacy of previous contact with autistic individuals (e.g., whether individuals have had any experiences meeting autistic individuals or the amount of time an individual has spent with an autistic person)

Table 2.

Internal Consistencies and Theoretical Motivations of Rater Characteristics by Category

Rater Characteristics Category	Definitions	Examples of Rater Characteristics Types	Number of Studies	Number of Measures	Internal Consistency				Theoretical Motivation			
					NA	NR	< .70	≥ .70	TF	EE	HO	NH
Demographic characteristics	Characteristics of human populations	Gender, age, education	40	93	93	0	0	0	3	44	2	44
Contact with autism	Experiences with autism in terms of knowing and/or meeting an autistic person	Contact quantity, contact quality	24	32	27	0	2	3	5	25	1	1
Knowledge about autism	Ability to correctly identify traits, features, and facts about autism	Knowledge	22	23	2	8	9	4	2	18	0	3
Trait and personality factors	Enduring characteristic patterns of thoughts, feelings, and behaviors	Autistic traits, cultural orientation, social desirability	17	36	5	7	6	18	5	16	4	11
Others	Factors that could not be categorized into the categories	Other disability-related factors, institutional factors, autism specific beliefs	12	27	21	3	0	3	0	15	8	4
Total			115	211	148	18	17	28	15	118	15	63

Notes. NA = Not applicable; NR = Not reported; TF = Theoretical framework; EE = Empirical evidence; HO = Hypothesis only; NH = No hypothesis

Figure 1.

Preferred Reporting Items for Systematic Reviews and Meta-Analyses (PRISMA) flow diagram

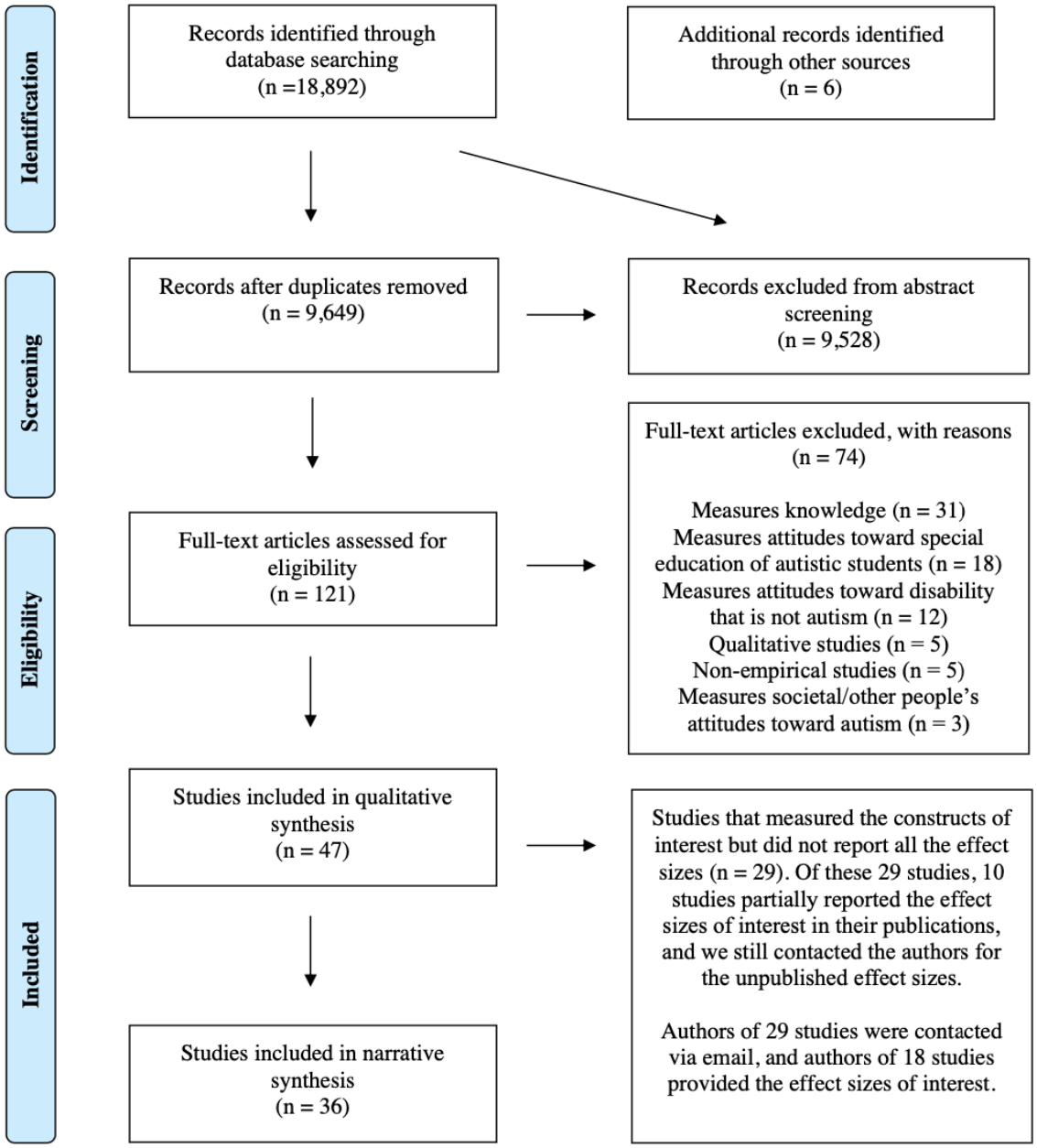
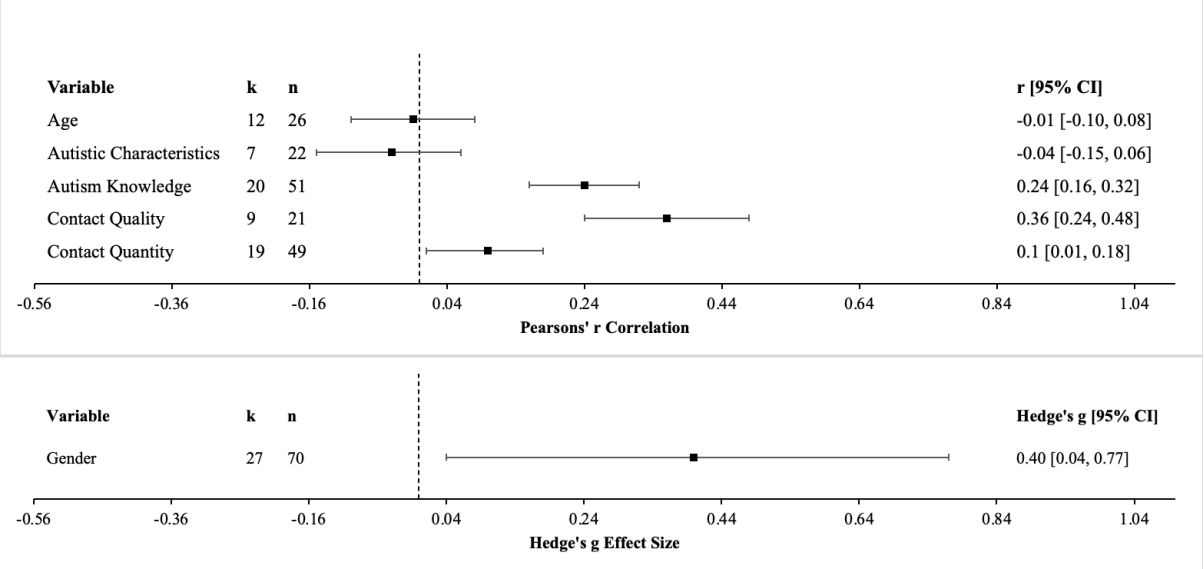


Figure 2.

Forest Plot of Summary Effect Sizes



Note. n = the number of effect sizes included in each unconditional regression, k = the number of studies included in each unconditional regression

Supplementary Table S1.

Summary of Participant Characteristics from Studies Included in the Narrative Synthesis

Article	**N**	**Mean Age**	**Male (%)**	**Education level**	**Race**	**Country**	**Profession**
Aube et al. (2021)	129	9	49	Elementary (2-5th)	NR	France	K-12 students
Brosnan & Gavin (2021)	306	20	0	Undergraduate	81% White	UK	College students
Cage et al. (2019)	361	20	17	High school, Undergraduate; Graduate	70% White	UK	High school; College students; Adults
Campbell et al. (2004)	576	10	51	Elementary (3-6th)	81% White	US	K-12 students
Chambres et al. (2008)	88	35	25	Undergraduate	NR	France	College students
Chung et al. (2015)	234	37	24	58% MA; 32% special education teaching certificate	82% White	US	In-service teachers
Dachez et al. (2015)	205	45	22	NR	NR	France	Students, professionals, and retirees
Davidovitch et al. (2019)	686	NR	42	NR	NR	Israel	Teachers
De Boer et al. (2012)	1621	Children: 10 yo Parents: 25-34 yo (6%); 35-44 yo (71%); 45-55 yo (22%); > 55 yo (1%)	40	Children: Elementary (5-7th) Parents: 1% Primary, 8% Secondary, 45% Intermediate vocational, 39% Higher vocational, 7% Undergraduate	NR	Netherland	Children: K-12 students Parents
De Boer & Pijla (2016)	451	13	48	Middle school (7-8th)	NR	Netherland	K-12 students

De Vries et al. (2020)	361	21	41	Undergraduate	NR	Malaysia, UK	College students
Derguy et al. (2021)	204	8	48	Elementary (1-5th)	NR	France	K-12 students
Gardiner & Iarocci (2014)	201	20	26	Undergraduate	57% Asian	Canada	College students
Gillespie-Lynch et al. (2015)	365	20	46	91% no college degree; 4% associate degree; 4% Bachelor degree	50% White	US	College students
Gillespie-Lynch et al. (2019)	1076	20	40	Undergraduate	NR	Lebanon, US	College students
Gillespie-Lynch et al. (2021)	907	19	45	Undergraduate	54% White	Lebanon, US	College students
Gillespie-Lynch et al. (2022)	194	18–24	36	Undergraduate	36% White	US	College students
	973	NR	36	Undergraduate	30% White	US, Lebanon	College students
Gouvousis et al. (2010)	30	22.2	NR	Undergraduate	NR	US	College students
Griffin (2019)	70	11~14	37	Middle school (6-8th)	59% White	US	K-12 students
Harnum et al. (2007)	60	19.5	55	NR	100% White	Canada	Elementary school students and adults
Kaupins et al. (2020)	392	< 20 (34%), 20-25 (54%), 25 > (12%)	33	Undergraduate	White	US	College students
Kelly & Barnes-Holmes (2013)	32	22-40	6	NR	NR	Ireland	Applied Behavior Analysis tutors, primary school teachers
Kim (2021)	153	41	17	14% 2-year or community college degree; 16% Bachelor degree; 67% Master or professional degree	78% White	US	Staff members of disability support offices in higher education institutions

Kim et al. (2021)	770	41	53	3.05% (US) 3.53% (Koreal) b1, less than high school; 2, received high school diploma/GED; 3, vocational/trade/technical school; 4, bachelor's degree; 5, advanced degree (MA, PhD)	67% White 100% Asian	US, Korea	NR
Lindbolm et al. (2020)	704	25	17	College Students (student teachers)	NR	Sweden, Finland, UK	College students
Lu et al. (2020)	1002	NR	32	Undergraduate	NR	China	College students
Lu et al. (2021)	869	NR	32	Undergraduate	NR	China	College students
Mac Cárthaigh & López (2020)	331	24	19	Undergraduate; Graduates	NR	Korea, UK	College students
Massa et al. (2020)	101	30	47	NR	52% White	US	College students, faculty member
Matthews et al. (2015)	224	20	52	Undergraduate	62% Asian American	US	College students
Morris et al. (2020)	222	6	65	Kindergarten	NR	Ireland	K-12 students
Morrison et al. (2019)	486	21	24	Undergraduate	NR	US	College students
Morton & Campbell (2008)	296	10	52	Elementary school	83% White	US	K-12 students
Nah & Tan (2021)	120	37	13	57% BA; 30% post-graduate degree, 13% non-degree holder	100% Asian	Singapore	Primary school teacher
Nevill & White (2011)	652	NR	34	Undergraduate	85% White	US	College students
Obeid et al. (2015)	675	18	37	Undergraduate	NR	US, Lebanon	College students

Obeid et al. (2021)	493	20	28	Undergraduate	49% White	US	College students
Payne and Wood (2016)	1204	20	33	Undergraduate	74% White	US	College students
Sasson & Morrison (2019)	215	22	29	Undergraduate	NR	US	College students
Shand & Shah (2020)	227	29	26	NR	NR	UK	NR
Someki et al. (2018)	577	20	46	Undergraduate	48% White 99.5% Asian	US, Japan	College students
Surmen et al. (2015)	160	35	38	28% illiterate; 29% primary; 43% secondary and high school; 12% undergraduate	NR	Turkey	NR
Tonnsen & Hahn (2016)	78	12	53	Middle school	NR	US	K-12 students
Underhill et al. (2019)	216	20	41	71% freshman; 16% sophomores; 7% juniors; 3% seniors	78% White	US	College students
Waisman et al. (2022)	98	42	30	61% doctorate degree; 31% master's degree; 9% graduate student; 1% other	84% White	US, UK, Canada, Japan, Singapore	Higher education teaching staff
White et al. (2019)	214	NR	50	Undergraduate	NR	US	College students
White et al. (2020)	250	13	52	Middle school; High school	92% White	UK	K-12 students

Notes. US = United States; UK = United Kingdom; NR = Not reported; yo = year-old

Supplementary Table S2.

Summary of Participant Relationships to Autism

Article	Relationships to Autism	Includes autistic participants (%)
Aube et al. (2021)	Not reported	No
Brosnan & Gavin (2021)	21.2% having an autistic family friend; 19.3% having an autistic relative; 13.4% experience working with an autistic person; 10.5% living with an autistic people	Not reported
Cage et al. (2019)	61.7% having at least one connection to autism	No
Campbell et al. (2004)	Not reported	No
Chambres et al. (2008)	Not reported	Not reported
Chung et al. (2015)	Not reported	Not reported
Dachez et al. (2015)	48.5% having social contact with autism	Not reported
Davidovitch et al. (2019)	[Teacher] 66.0% personally familiar with an autistic person; 43.0% experience teaching autistic student; 40.0% having a high degree of involvement with autistic student	Not reported
De Boer et al. (2012)	Not Reported	Students: Yes (Less than 4%); Parents: Not reported
De Boer & Pijla (2016)	Not Reported	Yes (Less than 4%)
De Vries et al. (2020)	Mean score of 9.4 on Level of contact (Gardiner and Iarocci, 2014)	Not reported
Derguy et al. (2021)	34.8% having an autistic friend; 7.8% having an autistic family member	Not reported
Gardiner & Iarocci (2014)	29.9% having an autistic family member; 14% experienced through employment	Yes (less than 1%)
Gillespie-Lynch et al. (2015)	56.5% having an autistic friend, nuclear family member, or extended family member (5.2% immediate family member; 4.4% nuclear family member)	Yes (less than 2%)
Gillespie-Lynch et al. (2019)	60.9% having contact (5.6% having an autistic nuclear family member)	Not reported
Gillespie-Lynch et al. (2021)	Not reported	Not reported
Gillespie-Lynch et al. (2022)	[Pilot] 7.2% having an autistic nuclear family member [Cross-Institutional] 4.5% having an autistic nuclear family member	[Pilot] Yes (less than 2%) [Cross-Institutional] Yes (less than 1%)
Gouvousis et al. (2010)	6.3% having close autistic family members	Not reported
Griffin (2019)	75.0% knowing an autistic person	No
Harnum et al. (2007)	Not reported	No
Kaupins et al. (2020)	Not reported	Not reported
Kelly & Barnes-Holmes (2013)	50.0% were ABA tutors working with autistic children on a daily basis	Not reported
Kim (2021)	Not reported	Not reported
Kim et al. (2021)	Not reported	No
Lindbolm et al. (2020)	Not reported	Not reported

Lu et al. (2020)	27.5% having previous contact with an autistic person	Not reported
Lu et al. (2021)	27.4% having had direct contact with autistic person	No
Mac Cárthaigh & López (2020)	0.4; "Responses of 'None' were scored as [0], and a score of [1] was assigned to respondents who reported regular contact with someone from the following categories: 'Immediate Family', 'Extended Family', 'Friends', 'Classmates' or 'Work'"	Not reported
Massa et al. (2020)	15.8% having an autistic nuclear family member	Yes (less than 7%)
Matthews et al. (2015)	Not reported	Not reported
Morris et al. (2020)	Not reported	Yes (less than 9%)
Morrison et al. (2019)	Not reported	No
Morton & Campbell (2008)	Not reported	Not reported
Nah & Tan (2021)	Not reported	Not reported
Nevill & White (2011)	Not reported	Yes (less than 1%)
Obeid et al. (2015)	33.4% having an autistic acquaintance; 23.6% having an autistic friend; 21.9% having an autistic extended family member; 16.1% having an autistic fellow student; 4.4% having an autistic student; 3.6% having an autistic nuclear family member; 2.6% having an autistic co-worker	Yes (less than 2%)
Obeid et al. (2021)	Not reported	Not reported
Payne & Wood (2016)	75.0% some type of personal experience or exposure (67.0% exposure from school; 29.0% sharing a class with an autistic person; 18.0% having an autistic friend; 13.0% having an autistic family member)	Not reported
Sasson & Morrison (2019)	Not reported	Not reported
Shand & Shah (2020)	Mean score of 6.9 on Level of contact (Gardiner and Iarocci, 2014)	Not reported
Someki et al. (2018)	80.4% having prior contact with autistic person	Not reported
Surmen et al. (2015)	Not reported	Not reported
Tonnsen & Hahn (2016)	Not reported	Not reported
Underhill et al. (2019)	Not reported	Not reported
Waisman et al. (2022)	21.4% having an autistic nuclear family member	Yes (less than 5%)
White et al. (2019)	46.3% knowing an autistic person	Not Reported
White et al. (2020)	Not reported	Not reported

Supplementary Table S3.

Reliability and Theoretical Motivations of Rater Characteristics by Type

Category	Rater Characteristics Types	Number of Studies	N	Reliability				Theoretical Motivation			
				NA	NR	≥ .70	< .70	TF	EE	HO	NH
Demographics	Total	40	93	93	0	0	0	3	44	2	44
	Gender	34	34	34	0	0	0	0	23	0	11
	Age	24	24	24	0	0	0	0	10	1	13
	Education	14	18	18	0	0	0	0	8	1	9
	Ethnicity/geographic site	9	9	9	0	0	0	3	3	0	3
	Profession	5	7	7	0	0	0	0	0	0	7
	Income	1	1	1	0	0	0	0	0	0	1
Contact	Total	24	32	27	0	3	2	5	25	1	1
	Contact quantity	23	24	22	0	0	2	3	19	1	1
	Contact quality	8	8	5	0	3	0	2	6	0	0
Knowledge	Knowledge	22	23	2	8	4	9	2	18	0	3
Trait and Personality factors	Total	17	36	5	7	18	6	5	16	4	11
	Autistic trait	9	9	1	3	5	0	0	6	0	3
	Cultural orientation	3	5	0	0	4	1	4	1	0	0
	Social desirability	4	4	0	1	1	2	0	1	1	2
	Intergroup anxiety	1	3	0	0	3	0	0	1	2	0
	Openness to experience	3	3	1	0	2	0	0	3	0	0
	Intelligence quotients	2	2	0	2	0	0	0	0	0	2
	Similarity	1	2	2	0	0	0	0	0	0	2
	Cognitive empathy	1	1	0	0	1	0	0	1	0	0
	Cultural tightness	1	1	0	0	0	1	0	1	0	0
	Social dominance orientation	1	1	1	0	0	0	0	1	0	0
	Emotional intelligence	1	1	0	0	1	0	0	0	1	0
	Intergroup bias	1	1	0	0	1	0	1	0	0	0
	Perception of social norms	1	1	0	0	0	1	0	1	0	0
	Personality	1	1	0	1	0	0	0	0	0	1
	Racism	1	1	0	0	0	1	0	0	0	1
Others	Total	12	27	21	3	3	0	0	15	8	4

Other disability related factor	5	11	10	0	1	0	0	8	0	3
Institutional variables (e.g., average annual cost, perceived support from institution)	2	6	5	1	0	0	0	0	6	0
Other autism specific beliefs	2	5	3	0	2	0	0	3	2	0
Having heard of the term autism	2	2	2	0	0	0	0	1	0	1
Popularity	1	1	1	0	0	0	0	1	0	0
Depression	1	1	0	1	0	0	0	1	0	0
Stress	1	1	0	1	0	0	0	1	0	0

Notes. N = Number of Measures; NA = Not applicable; NR = Not reported; TF = Theoretical framework; EE = Empirical evidence; HO = Hypothesis only; NH = No hypothesis

Supplementary Table S4.

Summary of Study Characteristics and Reported Findings from Studies Included in the Narrative Synthesis

Article	Attitude Measure	Purported factor	Description of factor	Reliability	Acceptability of α	Theoretical Motivation	Statistical Method	Significance	Findings
Aube et al. (2021)	Explicit attitude measure	Age/Grade	Chronological age	N/A		HO	Regression	S	Younger age was associated with more negative attitudes
Brosnan & Gavin (2021)	Social distance scale (Gillespie-Lynch et al. 2015)	Contact quantity	Level of contact with autistic people (Gardiner & Iarocci, 2014) with scores ranging from never having met an autistic person to identifying as being autistic	N/A		NH	Pearson's correlation	S	More experience with autistic people were associated with more positive attitudes
	Social attractiveness (McCroskey et al., 2006)	Contact quantity	Level of contact with autistic people (Gardiner & Iarocci, 2014) with scores ranging from never having met an autistic person to identifying as being autistic	N/A		NH	MANCOVA	NS	
	Physical attractiveness (McGloin & Denes, 2018)	Contact quantity	Level of contact with autistic people (Gardiner & Iarocci, 2014) with scores ranging from never having met an autistic person to identifying as being autistic	N/A		NH	MANCOVA	NS	
	Task attractiveness (McCroskey & McCain, 1974)	Contact quantity	Level of contact with autistic people (Gardiner & Iarocci, 2014) with scores	N/A		NH	MANCOVA	NS	

			ranging from never having met an autistic person to identifying as being autistic						
	Trustworthiness (McCroskey & Teven, 1999)	Contact quantity	Level of contact with autistic people (Gardiner & Iarocci, 2014) with scores ranging from never having met an autistic person to identifying as being autistic	N/A		NH	MANCOVA	NS	
	Desire-to-date (McGloin & Denes, 2018)	Contact quantity	Level of contact with autistic people (Gardiner & Iarocci, 2014) with scores ranging from never having met an autistic person to identifying as being autistic	N/A		NH	MANCOVA	NS	
Cage et al. (2019)	Openness scale (Harnum et al. 2007)	Gender	Female vs. Male	N/A		NH	Independent t-tests	S	Being female was associated with more positive attitudes
	Dehumanisation (Bastian & Haslam, 2010)	Age/Grade	Chronological age	N/A		NH	MANOVA	NS	
		Contact quantity	Dichotomous variable asking whether the participant has any experience with autism	N/A		HO	MANOVA	NS	
		Gender	Female vs. Male	N/A		NH	MANOVA	NS	
		Knowledge	Autism awareness survey (Tipton & Blacher, 2014) 14 items to evaluate knowledge about autism (true or false)	$\omega = .60$	Low	NH	MANOVA	NS	
Campbell et al. (2004)	Adjective checklist (Siperstein, 1980)	Age/Grade	Chronological age	N/A		EE	Correlation	S	Older age was associated with more

								negative attitudes
	Shared activities questionnaire – General Social Domain (Morgan et al. 1996)	Gender	Female vs. Male	N/A	EE	ANOVA	NS	
	Shared activities questionnaire – Academic Domain (Morgan et al. 1996)	Gender	Female vs. Male	N/A	EE	ANOVA	S	Being female was associated with more positive attitudes when provided with explanatory information
Chambres et al. (2008)	Rating sheet on ten continuous scales (social, cognitive, emotional) – no label	Gender	Female vs. Male	N/A	EE	ANOVA	S	Being female was associated with more positive attitudes
	Rating sheet on ten continuous scales (social, cognitive, emotional) - label	Gender	Female vs. Male	N/A	EE	ANOVA	NS	
Chung et al. (2015)	Openness scale (Harnum et al. 2007)	Age/Grade	Chronological age	N/A	NH	Regression	NS	
		Education	Level of education	N/A	NH	Regression	NS	
		Education	Special education certification (yes or no)	N/A	NH	Regression	S	Having a special education certification was associated with more positive attitudes
		Gender	Female vs. Male	N/A	NH	Regression	S	Being female was associated with more

								positive attitudes
		Income	Income level	N/A	NH	Regression	NS	
		Profession	Grade level teaching	N/A	NH	Regression	S	Teaching elementary grade level was associated with more positive attitudes
		Profession	Number of years teaching	N/A	NH	Regression	NS	
Dachez et al. (2015)	Multidimensional attitude scale toward persons with disabilities (Findler et al. 2007)	Age/Grade	Chronological age	N/A	EE	MANOVA	NS	
		Contact quantity	Dichotomous variable asking whether the participant has any prior contact with autistic people	N/A	EE	MANOVA	Other	NS by MANOVA; S in post-hoc tests (More contact was associated with more positive attitudes)
		Gender	Female vs. Male	N/A	EE	MANOVA	NS	
		Social desirability	Balanced inventory of desirable responding (Paulhus, 1984) 40 items on a Likert scale	NR	HO	Correlation	NS	
Davidovitch et al. (2019)	Multidimensional attitude scale toward persons with disabilities (Findler et al. 2007)	Organizational support	Not explained	NR	HO	Regression	S	More organizational support was associated with more positive attitudes
De Boer et al. (2012)	Attitude survey towards inclusive education (De Boer et al., 2012)	Age/Grade (child)	Chronological age	N/A	EE	Regression	S	Older age was associated with more favorable attitudes
		Age/Grade (parent)	Chronological age	N/A	EE	Regression	NS	

Other disability related factor (child)	Experience with a peer with special educational needs	N/A	EE	Regression	NS	
Other disability related factor (child)	Friendship with a peer with special educational needs	N/A	EE	Regression	S	Having a friend with special educational needs was associated with more positive attitudes
Other disability related factor (parent)	Having a child with special educational needs	N/A	EE	Regression	S	Parents of a child with special educational needs was associated with favorable attitudes
Other disability related factor (parent)	Experience with a child with special educational needs in their child's class	N/A	EE	Regression	NS	
Other disability related factor (parent)	Familiarity with a disabled person	N/A	EE	Regression	NS	
Other disability related factor (parent)	Friendship of their child and a child with special educational needs	N/A	EE	Regression	NS	
Education (parent)	Primary, secondary, intermediate vocational, higher vocational, university	N/A	NH	Regression	NS	
Gender (child)	Female vs. Male	N/A	EE	Regression	S	Being female was associated with more positive attitudes

		Gender (parent)	Female vs. Male	N/A		EE	Regression	S	Being female was associated with more positive attitudes
De Boer & Pijla (2016)	Attitude survey towards inclusive education (De Boer et al., 2012)	Age/Grade	Grade	N/A		NH	Regression	NS	
		Other disability related factor	Any acquaintance with someone with a disability	N/A		NH	Regression	NS	
		Education	Lower secondary, vocational, higher secondary	N/A		NH	Regression	NS	
		Gender	Female vs. Male	N/A		NH	Regression	S	Being females were associated with more positive attitudes
De Vries et al. (2020)	Acceptance (Griffin et al. 2012) - participants with and without direct contact with autistic individuals	Other autism-specific beliefs	3 statements on a Likert scale asking how some food groups cause autism (Furnham & Buck 2003)	α = .73	High	HO	Mediation analysis	S	Stronger belief about food influencing autism was associated with more acceptance
		Other autism-specific beliefs	7 statements on a Likert scale asking how parents/ upbringing cause autism (Furnham & Buck 2003)	α = .81	High	HO	Mediation analysis	NS	
		Contact quantity	Level-of-Contact report (Holmes et al. 1999) 12 statements with varied levels of exposure to autistic individuals	N/A		EE	Mediation analysis	NS	
		Country	Malaysia vs. US	N/A		TF	Independent t-test	S	Being from UK was associated with higher acceptance

	Knowledge	Rate the accuracy of 12 items from the DSM-5 on a Likert-scale to evaluate the knowledge of autism	NR		TF	Mediation analysis	S	Higher knowledge of autism was associated with more acceptance
Acceptance (Griffin et al. 2012) - only participants with previous direct contact with autistic individuals	Other autism-specific beliefs	3 statements on a Likert scale asking how some food groups cause autism (Furnham & Buck 2003)	α = .73	High	HO	Mediation analysis	S	Stronger belief about food influencing autism was associated with more acceptance
	Other autism-specific beliefs	7 statements on a Likert scale asking how parents/ upbringing cause autism (Furnham & Buck 2003)	α = .81	High	HO	Mediation analysis	S	Stronger beliefs about upbringing influencing autism was associated with more acceptance
	Contact quality	6 items assessing perceived positivity in previous contact with autistic individuals (McManus et al. 2010)	N/A		EE	Mediation analysis	S	Better contact quality was associated with more acceptance
	Contact quantity	Level-of-Contact report (Holmes et al. 1999) 12 statements with varied levels of exposure to autistic individuals	N/A		EE	Mediation analysis	NS	
	Country	Malaysia vs. US	N/A		TF	Independent t-test	S	Being from UK was associated with higher acceptance
	Knowledge	Rate the accuracy of 12 items from the DSM-5 on a Likert-scale to evaluate the knowledge of autism	NR		TF	Mediation analysis	NS	

	Willingness to interact (Gardiner & Iarocci, 2014)	Other autism-specific beliefs	3 statements on a Likert scale asking how some food groups cause autism (Furnham & Buck 2003)	α = .73	High	HO	Mediation analysis	NS	
		Other autism-specific beliefs	7 statements on a Likert scale asking how parents/ upbringing cause autism (Furnham & Buck 2003)	α = .81	High	HO	Mediation analysis	NS	
		Contact quantity	Level-of-Contact report (Holmes et al. 1999) 12 statements with varied levels of exposure to autistic individuals	N/A		EE	Mediation analysis	NS	
		Country	Malaysia vs. US	N/A		TF	Chi-square	NS	
		Knowledge	Rate the accuracy of 12 items from the DSM-5 on a Likert-scale to evaluate the knowledge of autism	NR		TF	Mediation analysis	NS	
Derguy et al. (2021)	Children's attitudes toward autism questionnaire (Armstrong et al. 2017) - Behavioral domain	Gender	Female vs. Male	N/A		EE	Independent t-test	S	Being female was associated with more positive attitudes
	Children's attitudes toward autism questionnaire (Armstrong et al. 2017) - Affective domain	Gender	Female vs. Male	N/A		EE	Independent t-test	NS	
	Children's attitudes toward autism questionnaire (Armstrong et al. 2017) - Cognitive domain	Gender	Female vs. Male	N/A		EE	Independent t-test	NS	
	Children's attitudes toward autism questionnaire	Age/Grade	Chronological age	N/A		EE	Spearman's correlation	S	Older age was associated with more

	(Armstrong et al. 2017)								positive attitudes
		Other disability related factor	Knowing someone with a physical or mental disability (i.e., self, family, friends, none)	N/A		EE	Independent t-test	S	Knowing someone with a disability was associated with more positive attitudes
		Contact quantity	Single question asking if the rater has an autistic family member, friend or identifies as being autistic	N/A		EE	Independent t-test	NS	
Gardiner & Iarocci (2014)	Openness scale (Harnum et al. 2007)	Autistic trait	Autism spectrum quotient (Baron-Cohen et al. 2001) 50 statements on a Likert scale	α= .74	High	EE	Regression	NS	
		Contact quality	Quality of past contact (McManus et al. 2010) 6 items to assess perceived positivity in previous contact with autistic individuals	α= .91	High	EE	Pearson's correlation	S	More positive contact was associated with more openness
		Contact quantity - participants with and without direct contact with autistic individuals	Level-of-Contact Report (Holmes et al. 1999) 12 statements with varied levels of exposure to autistic individuals	N/A		EE	Regression	S	Greater contact quantity was associated with more openness
		Contact quantity -only participants with previous direct contact with autistic individuals	Level-of-Contact Report (Holmes et al. 1999) 12 statements with varied levels of exposure to autistic individuals	N/A		EE	Regression	NS	
		Gender	Female vs. Male	N/A		EE	Regression	NS	

		Knowledge	Autism survey (Swiezy et al. 2005) 20 items on a Likert scale to evaluate the knowledge of autism	NR		EE	Regression	NS	
	Willingness to interact (Gardiner & Iarocci, 2014)	Autistic trait	Autism spectrum quotient (Baron-Cohen et al. 2001) 50 statements on a Likert scale	α= .74	High	EE	Regression	NS	
		Contact quantity	Level-of-Contact Report (Holmes et al. 1999) 12 statements with varied levels of exposure to autistic individuals	N/A		EE	Regression	NS	
		Education	Major (arts and social sciences vs. other)	N/A		HO	Regression	S	Arts and social sciences majors were associated with greater likely to volunteer
		Gender	Female vs. Male	N/A		EE	Regression	S	Being female was more associated with greater intent to volunteer
		Knowledge	Autism survey (Swiezy et al. 2005) 20 items on a Likert scale to evaluate knowledge of autism	NR		EE	Regression	NS	
Gillespie-Lynch et al. (2019)	Social distance scale (Gillespie-Lynch et al. 2015)	Age/Grade	Chronological age	N/A		NH	Regression	NS	
		Autistic trait	RAADS-14 (Erikson et al. 2013) 14-item measure to screen for autism	α = .76 (Lebanon) α = .84 (US)	High	EE	Regression	NS	
		Contact quality	4-items asking perceived pleasantness with autistic individuals	N/A		TF	Regression	S	Less contact quality was associated

	(Gardiner & Iarocci, 2014)						with more stigma
Contact quantity	Dichotomous variable asking whether the participant has any prior contact with autistic people or not	N/A		EE	Regression	NS	
Country	Lebanon vs. US	N/A		TF	Regression	NS	
Cultural orientation	Cultural orientation scale (Triandis & Gelfand, 1998) 16 items consisting of four subscales to measure individualism	α = .75 (Lebanon) α = .79 (US)	High	TF	Regression	NS	
Cultural orientation	Cultural orientation scale (Triandis & Gelfand, 1998) 16 items consisting of four subscales to measure vertical orientation	α = .75 (Lebanon) α = .79 (US)	High	TF	Regression	S	More vertical orientation was associated with higher stigma
Education	Major (i.e., "helping" or other)	N/A		EE	Regression	NS	
Emotional intelligence	Trait emotional intelligence questionnaire (Petrides, 2009) 30 items with four subscales	α = .88 (Lebanon) α = .89 (US)	High	HO	Regression	NS	
Gender	Female vs. Male	N/A		EE	Regression	NS	
Knowledge	Autism awareness survey (Stone, 1987) 13 statements on a Likert scale to evaluate the knowledge of autism	α = .62 (Lebanon) α = .68 (US)	Low	EE	Regression	S	Less knowledge was associated with greater stigma
Openness to experience	NEO five factor inventory 3 (McCrae & Costa, 2007) 12 items to measure intellectual curiosity	α = .74	High	EE	Regression	S	Less openness was associated with higher stigma
Social desirability	Short marlowe-crowne social desirability scale (Reynolds, 1982) 13	α = .57 (Lebanon) α =. 62	Low	EE	Regression	NS	

			binary items to measure social desirability bias	(US)				
Gillespie-Lynch et al. (2015)	Social distance scale (Gillespie-Lynch et al. 2015)	Contact quantity	Dichotomous variable asking whether the participant has an autistic immediate family member	N/A		EE	Mann Whitney's U	S	Not having an immediate family member was associated with more stigma
		Education	Majors (i.e., STEM, "helping" majors)	N/A		NH	Mann Whitney's U	S	Majoring in STEM fields was associated with more stigma
		Gender	Female vs. Male	N/A		EE	Mann Whitney's U	S	Being male was associated with more stigma
Gillespie-Lynch et al. (2021)	Social distance scale (Gillespie-Lynch et al. 2015)	Cognitive empathy	Basic empathy scale in adults (Carre et al. 2013; Jolliffe & Farrington, 2006) 9 items	α = .73 (Lebanon) α = .79 (US)	High	EE	General linear model	S	Higher cognitive empathy was associated with less stigma
		Country	Lebanon vs. US	N/A		EE	General linear model	NS	
		Gender	Female vs. Male	N/A		EE	General linear model	S	Being male was associated with more stigma
		Cultural orientation	Cultural orientation scale (Triandis & Gelfand, 1998) 16 items consisting of four subscales to measure vertical orientation	α = .75 (Lebanon) α = .76 (US)	High	EE	General linear model	S	Higher vertical orientation was associated with more stigma
		Social desirability	Marlowe-crown social desirability scale	α = .75	High	NH	Correlation	NS	

			(Reynolds, 1982) 13 binary items						
	Social distance scale (Gillespie-Lynch et al. 2015) -labeled vignettes	Knowledge	Autism awareness survey (Stone, 1987) 29 statements on a Likert scale to measre knowledge on autism	α = .66 (Lebanon)α = .72 (US)	High Low	EE	General linear model	NS	
		Openness to experience	NEO Five Factor Inventory 3 (McCrae & Costa, 2007) 12 items to measure intellectual curiosity	α = .75	High	EE	General linear model	NS	
	Social distance scale (Gillespie-Lynch et al. 2015) -unlabeled vignettes	Openness to experience	NEO Five Factor Inventory 3 (McCrae & Costa, 2007) 12 items to measure intellectual curiosity	α = .75	High	EE	General linear model	NS	
Gillespie-Lynch et al. (2022)	Social distance scale (Gillespie-Lynch et al. 2015)	Gender	Female vs. Male	N/A		NH	Pearson's correlation	S	Being male was associated with more stigma
Gouvousis et al. (2010)	Self-assessment manikin (Lang et al., 1993)	Contact quantity	Dichotomous variable asking whether participant has any experience working with an autistic person	N/A		EE	ANOVA	NS	
Griffin (2019)	Shared activities questionnaire (Morgan et al., 1996)	Contact quantity	Dichotomous variable asking whether the participant knows an autistic person	N/A		EE	ANOVA	NS	
Harnum et al. (2007)	Openness scale (Harnum et al. 2007) - dislike and avoidance of the target person	Age/Grade	Chronological age	N/A		NH	ANOVA	S	Younger age was associated with more dislike/avoidance

	Openness scale (Harnum et al. 2007) - perception that the target person is not like them	Age/Grade	Chronological age	N/A	NH	ANOVA	NS	
Kaupins et al. (2020)	Rating of a character after reading about an autistic college instructor	Gender	Female vs. Male	N/A	EE	Regression	S	Being female was associated with higher ratings (the difference was insignificant when the diagnosis was revealed)
Kelly & Barnes-Holmes (2013)	Explicit attitude measure (Cohen et al. 2000)	Profession	ABA teacher vs. mainstream	N/A	NH	ANOVA	NS	
	Attitudes to autism scale (Holmes et al. 2006)	Profession	ABA teacher vs. mainstream	N/A	NH	ANOVA	NS	
	Feeling thermometer (Greenwald et al. 1998)	Other	Depression anxiety stress scale (Lovibond & Lovibond, 1995) 42 items on a Likert scale to measure depression	NR	EE	Correlation	S	More depression was associated with more negative feelings (For ABA tutors only)
		Profession	ABA teacher vs. mainstream	N/A	NH	ANOVA	S	Being an ABA teacher was associated with more positive feelings
		Other	Depression anxiety stress scale (Lovibond & Lovibond, 1995) 42 items on a Likert scale to measure stress	NR	EE	Correlation	S	More stress was associated with more negative feelings (For

									ABA tutors only)
Kim (2021)	Openness scale (Harnum et al. 2007)	Age/Grade	Chronological age	N/A		EE	Point-biserial correlation	NS	
		Average annual cost	Average annual cost	N/A		HO	Pearson's correlation	NS	
		Contact quality	Quality of contact (Islam & Hewstone, 1993) 5 items on a Likert scale asking the extent to which the contact was positive, enjoyable, pleasant, fun, and friendly	α = .75	High	EE	Regression	S	Higher quality contact was associated with more openness
		Contact quantity	Level-of-Contact Report (Holmes et al. 1999) 12 statements with varied levels of exposure to autistic individuals	α = .64	Low	EE	Pearson's correlation	NS	
		Education	Level of education	N/A		EE	Regression	S	Lower education was associated with more openness
		Education	Dichotomous variable measuring whether participants had any training on autism	N/A		EE	Point-biserial correlation	NS	
		Gender	Female vs. Male	N/A		EE	Point-biserial correlation	NS	
		Knowledge	Autism awareness survey (Stone, 1987) 14 statements on a Likert scale to measure knowledge about autism	α = .65	Low	EE	Pearson's correlation		
		Profession	Years of experience	N/A		NH	Pearson's correlation	NS	
		Public vs. Private	Whether the institution is private or public	N/A		HO	Point-biserial correlation	NS	
		Race	White vs. non-white	N/A		EE	Point-biserial correlation	NS	
		School size	Number of undergraduate students	N/A		HO	Pearson's correlation	NS	

	Type of degree	4-year vs. non-4-year (2-year, technical, vocational, community college)	N/A		HO	Point-biserial correlation	NS	
	Urbanicity	Urban vs. nonurban (suburban, town, rural)	N/A		HO	Point-biserial correlation	NS	
Social distance scale (Gillespie-Lynch et al. 2015)	Age/Grade	Chronological age	N/A		EE	Pearson's correlation	NS	
	Average annual cost	Average annual cost	N/A		HO	Point-biserial correlation	NS	
	Contact quality	Quality of contact (Islam & Hewstone, 1993) 5 items on a Likert scale asking the extent to which the contact was positive, enjoyable, pleasant, fun, and friendly	α = .75	High	EE	Regression	S	Less pleasant contact was associated with more stigma
	Contact quantity	Level-of-Contact Report (Holmes et al. 1999) 12 statements with varied levels of exposure to autistic individuals	α = .64	Low	EE	Regression	S	Less frequent contact was associated with more stigma
	Education	Level of education	N/A		EE	Pearson's correlation	NS	
	Education	Dichotomous variable measuring whether participants had any training on autism	N/A		EE	Point-biserial correlation	NS	
	Gender	Female vs. Male	N/A		EE	Point-biserial correlation	NS	
	Knowledge	Autism awareness survey (Stone, 1987) 14 statements on a Likert scale to measure knowledge on autism	α = .65	Low	EE	Regression	S	Less knowledge was associated with more stigma
	Profession	Years of experience	N/A		NH	Pearson's correlation	NS	
	Public vs. Private	Whether the institution is private or public	N/A		HO	Regression	S	Working at private schools were associated

								with more stigma
		Race	White vs. non-white	N/A	EE	Point-biserial correlation	NS	
		School size	Number of undergraduate students	N/A	HO	Point-biserial correlation	S	Smaller schools were associated with more stigma
		Type of degree	4-year vs. non-4-year (2-year, technical, vocational, community college)	N/A	HO	Point-biserial correlation	NS	
		Urbanicity	Urban vs. nonurban (suburban, town, rural)	N/A	HO	Point-biserial correlation	NS	
Kim et al. (2021)	Social distance scale (Gillespie-Lynch et al. 2015)	Age/Grade	Chronological age	N/A	NH	Pearson's correlation	NS	
		Other autism-specific beliefs	An item asking how likely is it that a child of an autistic person will also have autism (scale of 0 to 100)	N/A	EE	Regression	NS	
		Other autism-specific beliefs	Inquiring how having an autistic sibling impacts marriageability of family members (inspired by Grinker & Cho, 2013)	N/A	EE	Regression	S	Higher concern about marriageability was associated with more stigma
		Other autism-specific beliefs	Inquiring how including an autistic individual impacts productivity of a group (inspired by Grinker & Cho, 2013)	N/A	EE	Pearson's correlation	NS	
		Contact quality	1-item asking perceived pleasantness with autistic individuals	N/A	EE	Regression	S	Less pleasant previous contact was associated with greater stigma
		Contact quantity	Self-rated time spent with an autistic	N/A	EE	Regression	S	Less frequent contact was associated

	individual (Brown et al., 1999)						with greater stigma
Country	US vs. Korea	N/A		NH	Regression	S	Being from Korea was associated with higher stigma
Cultural orientation	Cultural orientation scale (Triandis & Gelfand, 1988) 4 items to measure horizontal collectivism	α = .80 [α = .74 (US) α = .81 (Korea)]	High	TF	Regression	S	Less horizontal collectivism was associated with more stigma
Cultural orientation	Cultural orientation scale (Triandis & Gelfand, 1988) 4 items to measure vertical individualism	α = .71 [α = .75 (US) α = .68 (Korea)]	High Low	TF	Regression	S	Heightened vertical individualism was associated with more stigma
Cultural tightness	Cultural orientation scale (Triandis & Gelfand, 1988) 6 items	α = .66 [α = .63 (US) α = .68 (Korea)]	Low	EE	Regression	S	Heightened cultural tightness was associated with more stigma
Education	Level of education	N/A		NH	Pearson's correlation	NS	
Gender	Female vs. Male	N/A		EE	Point-biserial correlation	NS	
Intergroup bias	Dot estimation task (Dunham, 2018) to measure in-group favoritism and out-group derogation	α = .85 ~ .92	High	TF	Regression	NS	
Knowledge	Participatory autism knowledge-measure (Gillespie-Lynch et al., in press) 29 items on Likert scale to evaluate the knowledge of autism	α = .71 [α = .79 (US) α = .68 (Korea)]	High Low	EE	Regression	S	Less accurate knowledge was associated with greater stigma

		Openness to experience	1 item from NEO five factor inventory 3 (McCrae & Costa, 2007) scored on a Likert scale	N/A		EE	Pearson's correlation	NS	
Lindbolm et al. (2020)	Attitudes (Wright et al, 1997)	Age/Grade	Chronological age	N/A		NH	Regression	NS	
		Contact quality	6-items asking the text to which previous contact was "enjoyable", "personal", "pleasant", "worthwhile", "close", "genuine"	α = .89	High	EE	Regression	S	Greater contact quality was associated with more positive attitudes (this association was mediated by affective intergroup anxiety only among English participants)
		Contact quantity	Frequency of interactions/exposure with autistic individuals (school setting, close friends, family members)	α = .66	Low	EE	Regression	NS	
		Country	US vs. Sweden vs. Finland	N/A		NH	Regression	NS	
		Education	Level of education	N/A		NH	Regression	NS	
		Education	Single item asking about perceived training about autistic people during teacher training courses	N/A		EE	Regression	NS	
		Gender	Female vs. Male	N/A		NH	Regression	NS	
		Intergroup anxiety	6 items to measure affective intergroup anxiety (Lolliot et al. 2014) on a Likert scale	α = .73	High	EE	Regression	S	Higher levels of intergroup anxiety was associated with more

									negative attitudes
		Intergroup anxiety (other)	4 items to measure other-focused cognitive intergroup anxiety (Greenland et al. 2012) on a Likert scale	α = .76	High	HO	Regression	NS	
		Intergroup anxiety (self)	4 items to measure self-focused cognitive intergroup anxiety (Greenland et al. 2012) on a Likert scale	α = .76	High	HO	Regression	NS	
		Perceptions of social norms	3 items to assess perception of societal norms on a Likert scale	α = .66	Low	EE	Regression	S	Positive social norms were associated with more positive attitudes
Lu et al. (2020)	Multidimensional attitude scale towards persons with disabilities (Findler et al. 2007)	Age/Grade	Freshman, sophomore, junior, and senior	N/A		NH	ANOVA	Other	Marginal significance across the total score (direction unclear), but no differences on subscales
		Gender	Female vs. Male	N/A		NH	ANOVA	NS	
		Knowledge	Autism stigma and knowledge questionnaire (ASK-Q, Harrison et al. 2017) 49 item questionnaires (yes, no, I don't know)	α = .89	High	EE	Correlation	S	Greater knowledge was associated with more positive attitudes
Lu et al. (2021)	Social distance scale (Gillespie-Lynch et al. 2015)	Age/Grade	Freshman, Sophomore, Junior, Senior	N/A		NH	Correlation	S	Lower grades were associated with more stigma
		Education	Helping profession vs. non-helping profession	N/A		NH	Correlation	S	Direction not reported
		Having heard of autism	Having heard of autism; Having heard of autism	N/A		EE	Correlation	S	Direction not reported

		with contact; Having heard of autism without contact						
	Gender	Female vs. Male	N/A		NH	Correlation	S	Direction not reported
	Knowledge	Autism stigma and knowledge Questionnaire (Harrison et al. 2017) 49 item questions to evaluate knowledge of autism (yes, no)	α = .89	High	EE	Correlation	S	Less knowledge was associated with more stigma
Negative stereotype - Dangerousness (Norman et al. 2012)	Age/Grade	Freshman, Sophomore, Junior, Senior	N/A		NH	Correlation	NS	
	Education	Helping profession vs. non-helping profession	N/A		NH	Correlation	S	Direction not reported
	Having heard of autism	Having heard of autism; Having heard of autism with contact; Having heard of autism without contact	N/A		EE	Correlation	S	Direction not reported
	Gender	Female vs. Male	N/A		NH	Correlation	S	Direction not reported
	Knowledge	Autism stigma and knowledge Questionnaire (Harrison et al. 2017) 49 item questions to evaluate knowledge of autism (yes, no)	α = .89	High	EE	Correlation	S	More knowledge was associated with more negative dangerous stereotypes
Negative stereotype - Personal responsibility for the disorder (Norman et al. 2012)	Age/Grade	Freshman, Sophomore, Junior, Senior	N/A		NH	Correlation	S	Lower grades were associated with more stigma
	Education	Helping profession vs. non-helping profession	N/A		NH	Correlation	S	Direction not reported
	Having heard of autism	Having heard of autism; Having heard of autism with contact; Having heard of autism without contact	N/A		EE	Correlation	S	Direction not reported

	Gender	Female vs. Male	N/A		NH	Correlation	S	Direction not reported
	Knowledge	Autism stigma and knowledge questionnaire (Harrison et al. 2017) 49 item questions to evaluate knowledge of autism (yes, no)	α = .89	High	EE	Correlation	S	More knowledge was associated with more personal responsibility stereotypes
Negative stereotype - Discontinuity (Norman et al. 2012)	Age/Grade	Freshman, Sophomore, Junior, Senior	N/A		NH	Correlation	NS	
	Education	Helping profession vs. non-helping profession	N/A		NH	Correlation	NS	
	Having heard of autism	Having heard of autism; Having heard of autism with contact; Having heard of autism without contact	N/A		EE	Correlation	NS	
	Gender	Female vs. Male	N/A		NH	Correlation	NS	
	Knowledge	Autism stigma and knowledge questionnaire (Harrison et al. 2017) 49 item questions to evaluate knowledge of autism (yes, no)	α = .89	High	EE	Correlation	S	More knowledge was associated with more discontinuity stereotypes
Negative stereotype - Social appropriateness (Norman et al. 2012)	Age/Grade	Freshman, Sophomore, Junior, Senior	N/A		NH	Correlation	NS	
	Education	Helping profession vs. non-helping profession	N/A		NH	Correlation	S	Direction not reported
	Having heard of autism	Having heard of autism; Having heard of autism with contact; Having heard of autism without contact	N/A		EE	Correlation	S	Direction not reported
	Gender	Female vs. Male	N/A		NH	Correlation	NS	
	Knowledge	Autism stigma and knowledge questionnaire (Harrison et al. 2017) 49 item	α = .89	High	EE	Correlation	S	More knowledge was associated

			questions to evaluate knowledge of autism (yes, no)					with more social appropriateness stereotypes
Mac Cárthaigh & López (2020)	Openness scale (Harnum et al. 2007)	Autistic trait	Adult autism spectrum quotient (Baron-Cohen et al., 2001) 50 items on a Likert scale to measure autistic traits	NR	EE	Pearson's correlation	NS	
		Contact quantity	Frequency of regular contact with autistic people in terms of immediate family, extended family, friends, classmates, work	N/A	TF	Regression	NS	
		Knowledge (Korea)	Autism survey questionnaire (Imran et al. 2011) 19 items to evaluate knowledge of autism (agree, don't know, disagree)	NR	TF	Regression	NS	
		Knowledge (UK)	Autism survey questionnaire (Imran et al. 2011) 19 items to evaluate knowledge of autism (agree, don't know, disagree)	NR	TF	Regression	S	More knowledge was associated with more positive attitudes
Massa et al. (2020)	Social distance scale (Gillespie-Lynch et al. 2015)	Age/Grade	Emerging adult (18-29) vs. Adults (30+)	N/A	NH	Regression	S	Being an emerging adult was associated with more stigma
		Contact quality	1-item asking the perceived pleasantness of previous contact with autistic individuals (Gardiner & Iarocci, 2014)	N/A	TF	Regression	NS	
		Contact quantity	Dichotomous variable asking whether the	N/A	TF	Regression	NS	

			participant has a nuclear family member or not					
		Gender	Female vs. Male	N/A	NH	Regression	S	Being male was associated with more stigma
		Profession	Indicate whether they were a student, faculty member or other	N/A	NH	Regression	NS	
Matthews et al. (2015)	Multidimensional attitude scale toward persons with disabilities-Cognitive domains (Findler et al. 2007)	Autistic trait	Broad autism phenotype 1uestionnaire (Hurley et al. 2007) 36 items on a Likert scale to measure subclinical characteristics of autism	NR	EE	Regression	S	More self-reported autistic traits were associated with more negative attitudes
		Gender	Female vs. Male	N/A	EE	Regression	S	Being male was associated with more positive attitudes
		Knowledge	Autism knowledge questionnaire (Kuhn & Carter, 2006) 41 items to evaluate knowledge about autism (true or false)	NR	EE	Regression	NS	
	Multidimensional attitude scale toward persons with disabilities-Affective domains (Findler et al. 2007)	Autistic trait	Broad autism phenotype questionnaire (Hurley et al. 2007) 36 items on a Likert scale to measure subclinical characteristics of autism	NR	EE	Regression	S	More self-reported autistic traits were associated with more negative attitudes
		Gender	Female vs. Male	N/A	EE	Regression	S	Being male was associated with more

								positive attitudes
		Knowledge	Autism knowledge questionnaire (Kuhn & Carter, 2006) 41 items to evaluate knowledge about autism (true or false)	NR	EE	Regression	NS	
	Multidimensional attitude scale toward persons with disabilities- Behavioral domains (Findler et al. 2007)	Autistic trait	Broad autism phenotype questionnaire (Hurley et al. 2007) 36 items on a Likert scale to measure subclinical characteristics of autism	NR	EE	Regression	S	More self-reported autistic traits were associated with more negative attitudes
		Gender	Female vs. Male	N/A	EE	Regression	S	Being male was associated with more positive attitudes
		Knowledge	Autism knowledge questionnaire (Kuhn & Carter, 2006) 41 items to evaluate knowledge about autism (true or false)	NR	EE	Regression	NS	
Morris et al. (2020)	Multiple response racial attitude measure (Cameron & Rutland, 2006)	Gender	Female vs. Male	N/A	EE	ANOVA	S	Being female was associated with higher positive attitudes
	Shared activities questionnaire (SAQ, Morgan et al. 1996)	Gender	Female vs. Male	N/A	EE	ANOVA	NS	
Morrison et al. (2019)	First impressions scale- Awkward (Sasson et al., 2017)	Age/Grade	Chronological age	N/A	EE	Multilevel modeling	S	Older age was associated with more awkwardness
		Contact quantity	Level-of-Contact Report (Holmes et al. 1999) 12	N/A	EE	Multilevel modeling	S	More contact was

		statements with varied levels of exposure to autistic individuals					associated with more awkwardness
	Gender	Female vs. Male	N/A		EE	Multilevel modeling	NS	
	IQ	Wide range achievement ttest-3 (Wilkinson, 1993)	NR		NH	Zero-order correlation	S	Lower IQ was associated with more awkwardness
	Knowledge	Autism awareness scale (Gillespie-Lynch et al., 2015) 13 item questionnaire on a Likert scale to evaluate knowledge of autism	α = .68	Low	EE	Multilevel modeling	S	Higher knowledge was associated with more awkwardness
First impressions scale- Attractive (Sasson et al., 2017)	Age/Grade	Chronological age	N/A		EE	Multilevel modeling	NS	
	Contact quantity	Level-of-Contact Report (Holmes et al. 1999) 12 statements with varied levels of exposure to autistic individuals	N/A		EE	Multilevel modeling	NS	
	Gender	Female vs. Male	N/A		EE	Multilevel modeling	S	Being male was associated with more attractiveness
	IQ	Level-of-Contact Report (Holmes et al. 1999) 12 statements with varied levels of exposure to autistic individuals	NR		NH	Zero-order correlations	S	Higher IQ was associated with more positive ratings of attractiveness
	Knowledge	Autism awareness scale (Gillespie-Lynch et al., 2015) 13 item questionnaire on a Likert scale to evaluate knowledge of autism	α = .68	Low	EE	Multilevel modeling	S	Higher knowledge was associated with more negative ratings of attractiveness

First impressions scale- Trustworthy (Sasson et al., 2017)	Age/Grade	Chronological age	N/A		EE	Multilevel modeling	NS	
	Contact quantity	Level-of-Contact Report (Holmes et al. 1999) 12 statements with varied levels of exposure to autistic individuals	N/A		EE	Multilevel modeling	NS	
	Gender	Female vs. Male	N/A		EE	Multilevel modeling	NS	
	IQ	Level-of-Contact Report (Holmes et al. 1999) 12 statements with varied levels of exposure to autistic individuals	NR		NH	Zero-order correlations	S	Higher IQ was associated with more positive ratings of trustworthiness
	Knowledge	Autism awareness scale (Gillespie-Lynch et al., 2015) 13 item questionnaire on a Likert scale to evaluate knowledge of autism	α = .68	Low	EE	Multilevel modeling	NS	
First impressions scale- Dominance (Sasson et al., 2017)	Age/Grade	Chronological age	N/A		EE	Multilevel modeling	NS	
	Contact quantity	Level-of-Contact Report (Holmes et al. 1999) 12 statements with varied levels of exposure to autistic individuals	N/A		EE	Multilevel modeling	S	More contact was associated with higher ratings of dominance
	Gender	Female vs. Male	N/A		EE	Multilevel modeling	NS	
	IQ	Level-of-Contact Report (Holmes et al. 1999) 12 statements with varied levels of exposure to autistic individuals	NR		NH	Zero-order correlations	S	Higher IQ was associated with higher ratings of dominance
	Knowledge	Autism awareness scale (Gillespie-Lynch et al., 2015) 13 item questionnaire on a	α = .68	Low	EE	Multilevel modeling	NS	

		Likert scale to evaluate knowledge of autism					
First impressions scale- Likable (Sasson et al., 2017)	Age/Grade	Chronological age	N/A		EE	Multilevel modeling	NS
	Contact quantity	Level-of-Contact Report (Holmes et al. 1999) 12 statements with varied levels of exposure to autistic individuals	N/A		EE	Multilevel modeling	NS
	Gender	Female vs. Male	N/A		EE	Multilevel modeling	NS
	IQ	Level-of-Contact Report (Holmes et al. 1999) 12 statements with varied levels of exposure to autistic individuals	NR		NH	Zero-order correlations	NS
	Knowledge	Autism awareness scale (Gillespie-Lynch et al., 2015) 13 item questionnaire on a Likert scale to evaluate knowledge of autism	α = .68	Low	EE	Multilevel modeling	NS
First impressions scale- Smart (Sasson et al., 2017)	Age/Grade	Chronological age	N/A		EE	Multilevel modeling	NS
	Contact quantity	Level-of-Contact Report (Holmes et al. 1999) 12 statements with varied levels of exposure to autistic individuals	N/A		EE	Multilevel modeling	NS
	Gender	Female vs. Male	N/A		EE	Multilevel modeling	S	Being female was associated with higher ratings in intelligence
	IQ	Level-of-Contact Report (Holmes et al. 1999) 12 statements with varied levels of exposure to autistic individuals	NR		NH	Zero-order correlations	NS
	Knowledge	Autism awareness scale (Gillespie-Lynch et al., 2015) 13 item	α = .68	Low	EE	Multilevel modeling	NS

		questionnaire on a Likert scale to evaluate knowledge of autism						
First impressions scale- Live near (Sasson et al., 2017)	Age/Grade	Chronological age	N/A		EE	Multilevel modeling	NS	
	Contact quantity	Level-of-Contact Report (Holmes et al. 1999) 12 statements with varied levels of exposure to autistic individuals	N/A		EE	Multilevel modeling	NS	
	Gender	Female vs. Male	N/A		EE	Multilevel modeling	NS	
	IQ	Level-of-Contact Report (Holmes et al. 1999) 12 statements with varied levels of exposure to autistic individuals	NR		NH	Zero-order correlations	S	Higher IQ was associated with more willingness to live near
	Knowledge	Autism awareness scale (Gillespie-Lynch et al., 2015) 13 item questionnaire on a Likert scale to evaluate knowledge of autism	$\alpha = .68$	Low	EE	Multilevel modeling	S	Higher knowledge was associated with more willingness to live near
First impressions scale- Hangout (Sasson et al., 2017)	Age/Grade	Chronological age	N/A		EE	Multilevel modeling	NS	
	Contact quantity	Level-of-Contact Report (Holmes et al. 1999) 12 statements with varied levels of exposure to autistic individuals	N/A		EE	Multilevel modeling	NS	
	Gender	Female vs. Male	N/A		EE	Multilevel modeling	S	Being male was associated with more willingness to hang out
	IQ	Level-of-Contact Report (Holmes et al. 1999) 12 statements with varied levels of exposure to autistic individuals	NR		NH	Zero-order correlations	NS	

	Knowledge	Autism awareness scale (Gillespie-Lynch et al., 2015) 13 item questionnaire on a Likert scale to evaluate knowledge of autism	α = .68	Low	EE	Multilevel modeling	S	Higher knowledge was associated with more willingness to hang out
First impressions scale- Sit near (Sasson et al., 2017)	Age/Grade	Chronological age	N/A		EE	Multilevel modeling	NS	
	Contact quantity	Level-of-Contact Report (Holmes et al. 1999) 12 statements with varied levels of exposure to autistic individuals	N/A		EE	Multilevel modeling	NS	
	Gender	Female vs. Male	N/A		EE	Multilevel modeling	NS	
	IQ	Level-of-Contact Report (Holmes et al. 1999) 12 statements with varied levels of exposure to autistic individuals	NR		NH	Zero-order correlations	S	Higher IQ was associated with more willingness to sit hear
	Knowledge	Autism awareness scale (Gillespie-Lynch et al., 2015) 13 item questionnaire on a Likert scale to evaluate knowledge of autism	α = .68	Low	EE	Multilevel modeling	Sig	Higher knowledge was associated with more willingness to sit near
First impressions scale- Conversation (Sasson et al., 2017)	Age/Grade	Chronological age	N/A		EE	Multilevel modeling	NS	
	Contact quantity	Level-of-Contact Report (Holmes et al. 1999) 12 statements with varied levels of exposure to autistic individuals	N/A		EE	Multilevel modeling	NS	
	Gender	Female vs. Male	N/A		EE	Multilevel modeling	NS	
	IQ	Level-of-Contact Report (Holmes et al. 1999) 12 statements with varied levels of exposure to autistic individuals	NR		NH	Zero-order correlations	NS	

		Knowledge	Autism awareness scale (Gillespie-Lynch et al., 2015) 13 item questionnaire on a Likert scale to evaluate knowledge of autism	α = .68	Low	EE	Multilevel modeling	S	Higher knowledge was associated with more likelihood to start a conversation
	Social distance scale (Gillespie-Lynch et al. 2015)	Age/Grade	Chronological age	N/A		EE	Zero-order correlations	S	Younger age was associated with more social distance
		Contact quantity	Level-of-Contact Report (Holmes et al. 1999) 12 statements with varied levels of exposure to autistic individuals	N/A		EE	Zero-order correlations	S	Less contact was associated with more social distance
		IQ	Wide Range Achievement Test-3 (Wilkinson, 1993)	NR		EE	Zero-order correlations	S	Lower IQ was associated with more social distance
		Knowledge	Autism awareness scale (Gillespie-Lynch et al., 2015) 13 item questionnaire on a 5-point Likert scale	α = .68	Low	EE	Zero-order correlations	S	Less knowledge was associated with more social distance
Morton and Campbell (2008)	Adjective checklist (Siperstein, 1980) - Video condition	Age/Grade	Grade (i.e., third, fourth, fifth graders)	N/A		EE	ANOVA	NS	
		Gender	Female vs. Male	N/A		EE	ANOVA	S	Being female was associated with more positive attitudes
	Adjective checklist (Siperstein, 1980) - Teacher condition	Age/Grade	Grade (i.e., third, fourth, fifth graders)	N/A		EE	ANOVA	S	Fifth graders were associated with more positive attitudes than third graders

	Gender	Female vs. Male	N/A	EE	ANOVA	NS	
Adjective checklist (Siperstein, 1980) - Mother condition	Age/Grade	Grade (i.e., third, fourth, fifth graders)	N/A	EE	ANOVA	NS	
	Gender	Female vs. Male	N/A	EE	ANOVA	NS	
Adjective checklist (Siperstein, 1980) - Father condition	Age/Grade	Grade (i.e., third, fourth, fifth graders)	N/A	EE	ANOVA	S	Fourth graders were associated with more positive attitudes than fifth graders
	Gender	Female vs. Male	N/A	EE	ANOVA	NS	
Adjective checklist (Siperstein, 1980) - Doctor condition	Age/Grade	Grade (i.e., third, fourth, fifth graders)	N/A	EE	ANOVA	NS	
	Gender	Female vs. Male	N/A	EE	ANOVA	NS	
Shared activities questionnaire-Short Form (Morgan et al. 1996) -Video condition	Age/Grade	Grade (i.e., third, fourth, fifth graders)	N/A	EE	MANOVA	NS	
Shared activities questionnaire-Short Form (Morgan et al. 1996) -Teacher condition	Age/Grade	Grade (i.e., third, fourth, fifth graders)	N/A	EE	MANOVA	S	Fourth graders were associated with more willingness to engage in academic activities than third graders
Shared activities questionnaire-Short Form (Morgan et al. 1996) -Mother condition	Age/Grade	Grade (i.e., third, fourth, fifth graders)	N/A	EE	MANOVA	S	Third and fourth graders were associated with more willingness to engage in activities than fifth graders
Shared activities questionnaire-Short Form (Morgan et al.	Age/Grade	Grade (i.e., third, fourth, fifth graders)	N/A	EE	MANOVA		Fourth graders were associated with more

	1996) -Father condition								willingness to engage in academic activities than fifth graders
	Shared activities questionnaire-Short Form (Morgan et al. 1996) -Doctor condition	Age/Grade	Grade (i.e., third, fourth, fifth graders)	N/A		EE	MANOVA		Fifth graders were associated with more willingness to engage in recreational activities than fourth graders
Nah & Tan (2021)	Item rating the behaviors of the character	Profession	Years of teaching autistic students	N/A		NH	Regression	NS	
		Knowledge	Prior awareness of autism	N/A		NH	Regression	NS	
		Profession	Years of mainstream teaching experience	N/A		NH	Regression	NS	
Nevill & White (2011)	Openness scale (Harnum et al. 2007)	Autistic trait	Autism spectrum quotient (Baron-Cohen et al. 2001) 50 statements on a Likert scale divided into high AQ (scores above 32) vs. low AQ (scores below 32)	α = .80	High	NH	ANOVA	NS	
		Contact quantity	Dichotomous variable asking whether the participant has a first-degree relative	N/A		EE	ANOVA	S	Having an autistic family member was associated with greater openness
		Education	Major (i.e., engineering, physical sciences, social sciences, other)	N/A		EE	ANOVA	NS	
		Gender	Female vs. Male	N/A		NH	ANOVA	NS	
Obeid et al. (2015)	Social distance scale (Gillespie-Lynch et al. 2015)	Autistic trait (Lebanon)	Broad autism phenotype questionnaire (Hurley et al. 2007) 36 items to measure subclinical characteristics of autism	α = .88 (Lebanon, α = .90)	High	EE	Spearman's correlations	NS	

		Autistic trait (US)	Broad autism phenotype questionnaire (Hurley et al. 2007) 36 items to measure subclinical characteristics of autism	α = .88 (US, α = .80)	High	EE	Spearman's correlations	S	More autistic traits were associated with greater stigma
		Contact quantity	Dichotomous variable asking whether the participant has a nuclear family member or not	N/A		EE	Spearman's correlations	NS	
		Country	Lebanon vs. US	N/A		EE	Mann Whitney's U	S	Being from Lebanon was associated with more stigma
		Gender (Lebanon)	Female vs. Male	N/A		EE	Spearman's correlations	NS	
		Gender (US)	Female vs. Male	N/A		EE	Spearman's correlations	S	Being male was associated with greater stigma
		Knowledge (Lebanon)	Autism awareness survey (Stone, 1987) 13 items on a Likert scale to evaluate knowledge on autism	α = .62 (Lebanon, α = .61)	Low	EE	Spearman's correlations	NS	
		Knowledge (US)	Autism awareness survey (Stone, 1987) 13 items on a Likert scale to evaluate knowledge on autism	α = .62 (US, α = .59)	Low	EE	Spearman's correlations	S	Less knowledge was associated with greater stigma
Obeid et al. (2021)	Social distance scale (Gillespie-Lynch et al. 2015)	Age/Grade	Chronological Age	N/A		NH	Correlation	NS	
		Autistic trait	Ritvo autism and asperger diagnostic scale (Eriksson et al. 2013) 14 item on a Likert scale to be used as a rapid autism screener	α = .83	High	NH	Regression	NS	
		Other disability related factor	Self-rated perceived pleasantness with conduct disorder	N/A		EE	Correlation	NS	

	individuals (Gardiner and Iarocci, 2014)						
Contact quality	1-item asking the perceived pleasantness of previous contact with autistic individuals (Gardiner & Iarocci, 2014)	N/A		EE	Regression	S	Less pleasant contact was associated with greater stigma
Other disability related factor	Social distance scale measuring desired social distance from a person with conduct disorder	α = .92	High	NH	Regression	S	Less explicit stigma toward conduct disorder was associated less stigma
Gender	Female vs. Male	N/A		EE	Regression	S	Being male was associated with greater stigma
Knowledge	Autism knowledge questionnaire (Harrison et al. 2017) 49 items to evaluate knowledge about autism (agree or disagree)	α = .63	Low	EE	Regression	S	Less knowledge was associated with greater stigma
Racism	Symbolic racism 2000 (Henry and Sears 2002) 8 items on a Likert scale to examine explicit racial prejudice	α = .62	Low	NH	Regression	NS	
Site	NYC vs. Georgia	N/A		NH	Regression	NS	
Social desirability	A short form of Marlowe-crowne's social desirability questionnaire that includes 13 binary items	α = .65	Low	NH	Correlation	NS	
Knowledge	Accurate identification of autism diagnosis	N/A		NH	Regression	NS	
Other disability related factor	Accurate identification of conduct disorder diagnosis	N/A		NH	Correlation	S	More accurate diagnosis was associated with less stigma

Payne & Wood (2016)	Perception of autistic individuals - perceived controllability (Ling et al. 2010)	Contact quantity	5 items asking level of exposure to autistic individuals (e.g., peer at school, family member, friend)	N/A	EE	Correlation	S	Less contact was associated with greater perceived controllability
		Gender	Female vs. Male	N/A	EE	ANOVA	S	Being male was associated with greater perceived controllability
		Knowledge	19 items identifying autistic characteristics based on DSM-5 (yes or no)	NR	EE	Correlation	S	More knowledge was associated with greater perceived controllability
	Perception of autistic individuals -anger (Ling et al. 2010)	Contact quantity	5 items regarding exposure to autistic individuals (yes or no)	N/A	EE	Correlation	S	Less contact was associated with more anger
		Gender	Female vs. Male	N/A	EE	ANOVA	S	Being male was associated with more anger
		Knowledge	19 items identifying autistic characteristics based on DSM-5 (yes or no)	NR	EE	Correlation	S	Less knowledge was associated with more anger
	Perception of autistic individuals - sympathy (Ling et al. 2010)	Contact quantity	5 items regarding exposure to autistic individuals (yes or no)	N/A	EE	Correlation	S	More contact was associated with more sympathy
		Gender	Female vs. Male	N/A	EE	ANOVA	S	Being female was associated

								with more sympathy
		Knowledge	19 items identifying autistic characteristics based on DSM-5 (yes or no)	NR	EE	Correlation	S	More knowledge was associated with more sympathy
	Perception of autistic individuals -helping intention (Ling et al. 2010)	Contact quantity	5 items regarding exposure to autistic individuals (yes or no)	N/A	EE	Correlation	S	More contact was associated with more helping intention
		Gender	Female vs. Male	N/A	EE	ANOVA	S	Being female was associated with more helping intention
		Knowledge	19 items identifying autistic characteristics based on DSM-5 (yes or no)	NR	EE	Correlation	S	More knowledge was associated with more helping intention
	Perception of autistic individuals -punitive intention (Ling et al. 2010)	Contact quantity	5 items regarding exposure to autistic individuals (yes or no)	N/A	EE	Correlation	S	More contact was associated with less punitive intention
		Knowledge	19 items identifying autistic characteristics based on DSM-5 (yes or no)	NR	EE	Correlation	S	More knowledge was associated with more punitive intention
Sasson & Morrison (2019)	First impression scale (Grossman, 2015)	Age/Grade	Chronological age	N/A	NH	Regression	NS	
		Autistic trait	Broad autism phenotype questionnaire (Hurley et	NR	NH	Regression	NS	

			al. 2007) 36 item to measure subclinical characteristics of autism					
		Gender	Female vs. Male	N/A	NH	Regression	NS	
		IQ	Wide range achievement test (Wilkinson 1993)	NR	NH	Regression	NS	
		Knowledge	Autism knowledge scale (Gillespie-Lynch et al. 2015) 13 items on a Likert scale to evaluate knowledge of autism	NR	EE	Regression	S	More knowledge was associated with more positive first impressions
		Personality	Ten-item personality Inventory (Gosling et al. 2003) 10 item measure of Big five personality traits	NR	NH	Regression	NS	
Shand & Shah (2020)	Thermometer attitude item (Haddock et al. 1993)	Age/Grade	Chronological age	N/A	EE	Regression	NS	
		Autistic trait	Autism spectrum quotient-Short (Allison et al. 2012) 10 items to screen for autistic traits	NR	EE	Regression	NS	
		Contact quantity	Level of contact with autistic people (Gardiner and Iarocci, 2014) with scores ranging from never having met an autistic person to identifying as being autistic	N/A	EE	Regression	S	Higher level of contact with an autistic person was associated with more positive attitudes
		Gender	Female vs. Male	N/A	EE	Regression	NS	
		Knowledge	Autism Spectrum Knowledge Scale, General Population (McClain et al. 2019) 31 items to evaluate knowledge of autism	NR	EE	Regression	S	More knowledge was associated with more positive attitudes

Someki et al. (2018)	Social distance scale (Gillespie-Lynch et al. 2015)	Age/Grade (Japan)	Chronological age	N/A		EE	Spearman's correlation	NS	
		Age/Grade (US)	Chronological age	N/A		EE	Spearman's correlation	NS	
		Contact quantity (Japan)	Dichotomous variable asking whether the participant has any prior contact with autistic people or not	N/A		EE	Regression	NS	
		Contact quantity (US)	Dichotomous variable asking whether the participant has any prior contact with autistic people or not	N/A		EE	Regression	NS	
		Country	Japan vs. US	N/A		TF	Regression	S	Being from Japan was associated with greater stigma
		Education (Japan)	Major (i.e., "helping" or not)	N/A		EE	Regression	S	Helping majors were associated with less stigma
		Education (US)	Major (i.e., "helping" or not)	N/A		EE	Regression	S	Helping majors were associated with less stigma
		Gender (Japan)	Female vs. Male	N/A		EE	Spearman's correlation	NS	
		Gender (US)	Female vs. Male	N/A		EE	Spearman's correlation	S	Being male was associated with greater stigma
		Knowledge (Japan)	Autism awareness survey (Stone, 1987) 13 statements on a Likert scale to evaluate knowledge on autism	$\alpha = .30$	Low	EE	Regression	S	Less knowledge was associated with greater stigma

		Knowledge (US)	Autism awareness survey (Stone, 1987) 13 statements on a Likert scale to evaluate knowledge on autism	α = .56	Low	EE	Regression	S	Less knowledge was associated with greater stigma
Surmen et al. (2015)	Attitudes towards autism (feeling anxious about having an autistic neighbor)	Education	Illiterate, Literate, Primary school, secondary school, high school, university	N/A		NH	Chi-square	S	Lower level of education was associated with higher anxiousness
		Having heard the term autism	Having heard of the word 'autism'	N/A		NH	Kolmogorov-Smirnov	NS	
	Attitudes towards autism (minding if their child shares the same classroom with an autistic child)	Education	Illiterate, Literate, Primary school, secondary school, high school, university	N/A		NH	Chi-square	S	Lower level of education was associated with greater stigma
		Having heard the term autism	Having heard of the word 'autism'	N/A		NH	Kolmogorov-Smirnov	NS	
	Attitudes towards autism (feeling uneasy if an autistic person is working in their workplace)	Knowledge	Having heard of the word 'autism'	N/A		NH	Kolmogorov-Smirnov	S	Having heard of the word 'autism' was associated with more uneasiness
	Attitudes towards autism (sitting next to an autistic person on the bus)	Having heard the term autism	Having heard of the word 'autism'	N/A		NH	Kolmogorov-Smirnov	S	Having heard of the word 'autism' was associated with greater likelihood not to change seats
Tonnsen & Hahn (2016)	Adjective checklist-Self (Siperstein, 2006)	Age/Grade	Chronological age	N/A		NH	Regression	S	Younger age was associated with more

							positive attitudes
	Other disability related factor	Time spent with students with disabilities	N/A	EE	Regression	NS	
	Contact quantity	Time spent with autistic students at school	N/A	EE	Regression	NS	
	Contact quantity	Previous experience with autism	N/A	EE	Regression	S	More experience with autism was associated with more positive attitudes
	Gender	Female vs. Male	N/A	EE	Regression	NS	
	Popularity	Self-reported perceived popularity with peers	N/A	EE	Regression	S	Higher self-reported popularity was associated with more positive attitudes
	Similarity	Similarity of self to the autistic student in the vignette	N/A	NH	Regression	NS	
	Similarity	Similarity of peers to the autistic student in the vignette	N/A	NH	Regression	NS	
Chedoke-McMaster attitudes towards children with handicaps scale -Self (Rosenbaum et al 1986)	Age/Grade	Chronological age	N/A	NH	Regression	NS	
	Other disability related factor	Time spent with students with disabilities	N/A	EE	Regression	NS	
	Contact quantity	Time spent with autistic students at school	N/A	EE	Regression	S	More time spent with autistic students at school was associated with more

									positive attitudes
		Contact quantity	Previous experience with autism	N/A		EE	Regression	S	More experience with autism was associated with more positive attitudes
		Gender	Female vs. Male	N/A		EE	Regression	S	Being female was associated with more positive attitudes
		Popularity	Self-reported perceived popularity with peers	N/A		EE	Regression	S	Higher self-reported popularity was associated with more positive attitudes
		Similarity	Similarity of self to the autistic student in the vignette	N/A		NH	Regression	NS	
		Similarity	Similarity of peers to the autistic student in the vignette	N/A		NH	Regression	NS	
Underhill et al. (2019)	Openness scale (Harnum et al. 2007)	Gender	Female vs. Male	N/A		NH	Independent t-test	NS	
		Knowledge	Autism stigma and knowledge questionnaire (Harrison et al. 2017) 18 items to evaluate knowledge about autism (true, false, don't know)	α = .83	High	EE	Regression	NS	
	Social distance scale (Gillespie-Lynch et al. 2015)	Knowledge	Autism stigma and knowledge questionnaire (Harrison et al. 2017) 18 items to	α = .83	High	EE	Regression	NS	

			evaluate knowledge about autism (true, false, don't know)						
Waisman et al. (2022)	Autism awareness scale (Gillespie-Lynch et al., in press)	Education	Major (i.e., STEM, 'helping', other)	N/A		EE	Regression	NS	
		Education	Prior autism training	N/A		EE	Regression	NS	
		Gender	Female vs. Male	N/A		EE	Regression	S	Being male was associated with greater stigma
		Knowledge	Participatory autism knowledge-measure (Gillespie-Lynch et al., in press) 29 items on a Likert scale to evaluate knowledge about autism	α = .89	High	EE	Regression	S	Less knowledge about autism was associated with greater stigma
		Social dominance orientation	Social dominance orientation (Ho et al., 2015) 2 items on a Likert scale selected from 8 items	N/A		EE	Regression	S	Greater social dominance orientation was associated with greater stigma
White et al. (2019)	Attitudes toward autistic students	Contact quantity	Dichotomous variable asking whether the participant knows an autistic person	N/A		TF	Independent t-test	S	Knowing an autistic person was associated with more positive attitudes
		Knowledge	Checklist of 30 behaviors asking to identify which traits would be expected in an autistic person (incorrect or correct)	NR		EE	Correlation	NS	
White et al. (2020)	Social and emotional distance (Social distance scale [Gillespie-Lynch et	Age/Grade	Chronological age (11~12-year-olds vs. 14~15-year-olds)	N/A		EE	Multivariate regression	S	Older age was associated with more social and

al. 2015] and Negative affect scale [Watson et al. 1988])	Gender	Female vs. Male	N/A	EE	Multivariate regression	NS	emotional distance

Notes. N/A = Not applicable; NR = Not reported; TF = theoretical framework; EE = empirical evidence; HO = hypothesis only; NH = no hypothesis; S = significant; NS = not significant

Supplementary Table S5.

Summary of Studies Included in the Meta-regression Analysis

Article	n	Mean Age	Male (%)	Profession	Attitude Measure	Purported Factor	Description of factor
Aube et al. (2021)	129	9	49	K-12 students	Explicit attitude measure	Gender	Female vs. Male
Brosnan & Gavin (2021)	306	20	0	College students	Social Distance Scale	Contact quantity	Level of contact with autistic people (scores ranging from never having met an autistic person to identifying as being autistic)
Cage et al. (2019)	355	20	17	College Students; Adults	Openness scale	Gender	Female vs. Male
	361	20	17	College Students; Adults	Openness scale	Age	Chronological age
	361	20	17	College Students; Adults	Openness scale	Contact quantity	Dichotomous variable asking whether the participant has any experience with autism
Campbell et al. (2004)	576	10	51	K-12 students	Adjective Checklist (wo/label)	Gender	Female vs. Male
	576	10	51	K-12 students	Adjective Checklist (w/label)	Gender	Female vs. Male
	576	10	51	K-12 students	SAQ (wo/label)	Gender	Female vs. Male
	576	10	51	K-12 students	SAQ (w/label)	Gender	Female vs. Male
Dachez et al. (2015)	205	45	22	NR	Measurement of Attitudes Toward People with Autism (cognitive dimension)	Gender	Female vs. Male
Davidovitch et al. (2019)	95	NR	48	Teachers	Openness Scale	Gender	Female vs. Male
	98	NR	47	Teachers	Tolerance	Gender	Female vs. Male
	102	NR	47	Teachers	Embracing	Gender	Female vs. Male
	101	NR	47	Teachers	Emotions	Gender	Female vs. Male
	101	NR	47	Teachers	Involvement	Gender	Female vs. Male
	430	NR	36	Students	Ambience	Gender	Female vs. Male
	512	NR	35	Students	Tolerance	Gender	Female vs. Male
	519	NR	35	Students	Embracing	Gender	Female vs. Male
	511	NR	35	Students	Emotions	Gender	Female vs. Male
	518	NR	35	Students	Involvement	Gender	Female vs. Male

	686	NR	42	Teachers, College students	Ambience	Gender	Female vs. Male
	686	NR	42	Teachers, College students	Tolerance	Age	Chronological age
	686	NR	42	Teachers, College students	Embracing	Age	Chronological age
	686	NR	42	Teachers, College students	Emotions	Age	Chronological age
	686	NR	42	Teachers, College students	Involvement	Age	Chronological age
	686	NR	42	Teachers, College students	Ambience	Age	Chronological age
	686	NR	42	Teachers, College students	Tolerance	Knowledge	Little to no, moderate, vs. high level of knowledge
	686	NR	42	Teachers, College students	Embracing	Knowledge	Little to no, moderate, vs. high level of knowledge
	686	NR	42	Teachers, College students	Emotions	Knowledge	Little to no, moderate, vs. high level of knowledge
	686	NR	42	Teachers, College students	Involvement	Knowledge	Little to no, moderate, vs. high level of knowledge
	686	NR	48	Teachers	Ambience	Knowledge	Little to no, moderate, vs. high level of knowledge
Derguy et al. (2021)	204	8	48	K-12 students	Glocal score (CATAQ - cognitive + CATCH - affective & behavioral)	Gender	Female vs. Male
Gardiner & Iarocci (2014)	201	20	26	College Students	Openness Scale	Gender	Female vs. Male
	201	20	26	College Students	Openness Scale	Autistic trait	Autism spectrum quotient (50 statements on a Likert scale)
	201	20	26	College Students	Willingness to interact	Autistic trait	Autism spectrum quotient (50 statements on a Likert scale)
	201	20	26	College Students	Openness Scale	Contact quality	Quality of past contact (McManus et al. 2010) 6 items to assess perceived positivity in previous contact with autistic individuals
	201	20	26	College Students	Willingness to interact	Contact quality	Level-of-Contact Report (12 statements with varied levels of exposure to autistic individuals)

	201	20	26	College Students	Openness Scale	Contact quantity	Level-of-Contact Report (12 statements with varied levels of exposure to autistic individuals)
	201	20	26	College Students	Willingness to interact	Contact quantity	Level-of-Contact Report (12 statements with varied levels of exposure to autistic individuals)
	201	20	26	College Students	Openness Scale	Knowledge	Autism survey (20 items on a Likert scale to evaluate the knowledge of autism)
	201	20	26	College Students	Willingness to interact	Knowledge	Autism survey (20 items on a Likert scale to evaluate the knowledge of autism)
Gillespie-Lynch et al. (2015)	365	20	46	NR	Social Distance Scale	Gender	Female vs. Male
	365	20	46	NR	Social Distance Scale	Age	Chronological age
	365	20	46	NR	Social Distance Scale	Contact quantity	Dichotomous variable asking whether the participant has an autistic immediate family member
	365	20	46	NR	Social Distance Scale	Knowledge	Autism awareness survey (Stone, 1987) 13 statements on a Likert scale to evaluate the knowledge of autism
Gillespie-Lynch et al. (2019)	556	19	40	College Students	Social Distance Scale	Gender	Female vs. Male
	556	19	40	College Students	Social Distance Scale	Autistic trait	RAADS-14 (14-item measure to screen for autism)
	556	19	40	College Students	Social Distance Scale	Contact quality	4-items asking perceived pleasantness with autistic individuals (Gardiner & Iarocci, 2014)
	556	19	40	College Students	Social Distance Scale	Contact quantity	Dichotomous variable asking whether the participant has any prior contact with autistic people or not
	556	19	40	College Students	Social Distance Scale	Knowledge	Autism awareness survey (13 statements on a Likert scale to evaluate the knowledge of autism)
	520	20	41	College Students	Social Distance Scale	Gender	Female vs. Male

	520	20	41	College Students	Social Distance Scale	Autistic trait	RAADS-14 (14-item measure to screen for autism)
	520	20	41	College Students	Social Distance Scale	Contact quality	Self-rated perceived pleasantness with autistic individuals
	520	20	41	College Students	Social Distance Scale	Contact quantity	Dichotomous variable asking whether the participant has any prior contact with autistic people or not
	520	20	41	College Students	Social Distance Scale	Knowledge	Autism awareness survey (13 statements on a Likert scale to evaluate the knowledge of autism)
Gillespie-Lynch et al. (2021)	907	19	43	College Students	Social Distance Scale (withdrawn)	Gender	Female vs. Male
	907	19	43	College Students	Social Distance Scale (disruptive)	Gender	Female vs. Male
	907	19	43	College Students	Dangerousness (withdrawn)	Gender	Female vs. Male
	907	19	43	College Students	Dangerousness (disruptive)	Gender	Female vs. Male
	907	19	43	College Students	Social Distance Scale (withdrawn)	Autistic traits	RAADS-14 (14-item measure to screen for autism)
	907	19	43	College Students	Social Distance Scale (disruptive)	Autistic traits	RAADS-14 (14-item measure to screen for autism)
	907	19	43	College Students	Social Distance Scale (withdrawn)	Autistic traits	RAADS-14 (14-item measure to screen for autism)
	907	19	43	College Students	Social Distance Scale (disruptive)	Autistic traits	RAADS-14 (14-item measure to screen for autism)
	907	19	43	College Students	Social Distance Scale (withdrawn)	Knowledge	Autism awareness survey (29 statements on a Likert scale to measure knowledge on autism)
	907	19	43	College Students	Social Distance Scale (disruptive)	Knowledge	Autism awareness survey (29 statements on a Likert scale to measure knowledge on autism)
	907	19	43	College Students	Social Distance Scale (withdrawn)	Knowledge	Autism awareness survey (29 statements on a Likert scale to measure knowledge on autism)
	907	19	43	College Students	Social Distance Scale (disruptive)	Knowledge	Autism awareness survey (29 statements on a Likert scale to measure knowledge on autism)
	194	NR	64	College Students	Social Distance Scale	Gender	Female vs. Male

	194	NR	64	College Students	Social Distance Scale	Contact quality	Quality of previous contact
	194	NR	64	College Students	Social Distance Scale	Contact quantity	Being nuclear family members
	194	NR	64	College Students	Social Distance Scale	Knowledge	Participatory autism knowledge-measure (29 items on a Likert scale to evaluate knowledge about autism)
Gillespie-Lynch et al. (2022)	973	NR	34	College Students	Social Distance Scale	Gender	Female vs. Male
	973	NR	34	College Students	Social Distance Scale	Contact quality	Quality of previous contact
	973	NR	34	College Students	Social Distance Scale	Contact quantity	Being nuclear family members
	973	NR	34	College Students	Social Distance Scale	Knowledge	Participatory autism knowledge-measure (29 items on a Likert scale to evaluate knowledge about autism)
Griffin (2019)	70	11~14	37	K-12 students	SAQ (AU)	Gender	Female vs. Male
	70	11~14	37	K-12 students	SAQ (HFA)	Gender	Female vs. Male
Kaupins et al. (2019)	392	<20 (34%); 20-25 (54%); 25> (12%)	33	College Students	Rating of a character after reading about an autistic college instructor	Gender	Female vs. Male
	392	<20 (34%); 20-25 (54%); 25> (12%)	33	College Students	Rating of a character after reading about an autistic college instructor	Gender	Female vs. Male
Kim (2021)	153	41	17	DSO Staff Members	Openness Scale	Age	Chronological age
	153	41	17	DSO Staff Members	Social Distance Scale	Age	Chronological age
	153	41	17	DSO Staff Members	Openness Scale	Contact quality	Quality of contact (Islam & Hewstone, 1993) 5 items on a Likert scale asking the extent to which the contact was positive, enjoyable, pleasant, fun, and friendly
	153	41	17	DSO Staff Members	Social Distance Scale	Contact quality	Quality of contact (Islam & Hewstone, 1993) 5 items on a Likert scale asking the extent to

							which the contact was positive, enjoyable, pleasant, fun, and friendly
	153	41	17	DSO Staff Members	Openness Scale	Contact quantity	Level-of-Contact Report (12 statements with varied levels of exposure to autistic individuals)
	153	41	17	DSO Staff Members	Social Distance Scale	Contact quantity	Level-of-Contact Report (12 statements with varied levels of exposure to autistic individuals)
	153	41	17	DSO Staff Members	Openness Scale	Knowledge	Autism awareness survey (14 statements on a Likert scale to measure knowledge about autism)
	153	41	17	DSO Staff Members	Social Distance Scale	Knowledge	Autism awareness survey (14 statements on a Likert scale to measure knowledge about autism)
Kim et al. (2021)	770	41	53	NR	Social Distance Scale	Gender	Female vs. Male
	770	41	53	NR	Social Distance Scale	Age	Chronological age
	770	41	53	NR	Social Distance Scale	Contact quality	1-item asking perceived pleasantness with autistic individuals
	770	41	53	NR	Social Distance Scale	Contact quantity	Self-rated time spent with an autistic individual
	770	41	53	NR	Social Distance Scale	Knowledge	Participatory autism knowledge-measure (29 items on Likert scale to evaluate the knowledge of autism)
Lindbolm et al. (2020)	191	25	16	College Students	Attitudes	Gender	Female vs. Male
	191	25	16	College Students	Perception of competence	Gender	Female vs. Male
	191	25	16	College Students	Perception of warmth	Gender	Female vs. Male
	191	25	16	College Students	Attitudes	Age	Chronological age
	191	25	16	College Students	Perception of competence	Age	Chronological age
	191	25	16	College Students	Perception of warmth	Age	Chronological age
	191	25	16	College Students	Attitudes	Contact quality	6-items asking the text to which previous contact was “enjoyable”, “personal”, “pleasant”,

						“worthwhile”, “close”, “genuine"
191	25	16	College Students	Perception of competence	Contact quality	6-items asking the text to which previous contact was “enjoyable”, “personal”, “pleasant”, “worthwhile”, “close”, “genuine"
191	25	16	College Students	Perception of warmth	Contact quality	6-items asking the text to which previous contact was “enjoyable”, “personal”, “pleasant”, “worthwhile”, “close”, “genuine"
191	25	16	College Students	Attitudes	Contact quantity	Frequency of interactions/exposure with autistic individuals (school setting, close friends, family members)
191	25	16	College Students	Perception of competence	Contact quantity	Frequency of interactions/exposure with autistic individuals (school setting, close friends, family members)
191	25	16	College Students	Perception of warmth	Contact quantity	Frequency of interactions/exposure with autistic individuals (school setting, close friends, family members)
249	25	27	College Students	Attitudes	Gender	Female vs. Male
249	25	27	College Students	Perception of competence	Gender	Female vs. Male
249	25	27	College Students	Perception of warmth	Gender	Female vs. Male
249	25	27	College Students	Attitudes	Age	Chronological age
249	25	27	College Students	Perception of competence	Age	Chronological age
249	25	27	College Students	Perception of warmth	Age	Chronological age
249	25	27	College Students	Attitudes	Contact quality	6-items asking the text to which previous contact was “enjoyable”, “personal”, “pleasant”,

						“worthwhile”, “close”, “genuine"
249	25	27	College Students	Perception of competence	Contact quality	6-items asking the text to which previous contact was “enjoyable”, “personal”, “pleasant”, “worthwhile”, “close”, “genuine"
249	25	27	College Students	Perception of warmth	Contact quality	6-items asking the text to which previous contact was “enjoyable”, “personal”, “pleasant”, “worthwhile”, “close”, “genuine"
249	25	27	College Students	Attitudes	Contact quantity	Frequency of interactions/exposure with autistic individuals (school setting, close friends, family members)
249	25	27	College Students	Perception of competence	Contact quantity	Frequency of interactions/exposure with autistic individuals (school setting, close friends, family members)
249	25	27	College Students	Perception of warmth	Contact quantity	Frequency of interactions/exposure with autistic individuals (school setting, close friends, family members)
254	25	9	College Students	Attitudes	Gender	Female vs. Male
254	25	9	College Students	Perception of competence	Gender	Female vs. Male
254	25	9	College Students	Perception of warmth	Gender	Female vs. Male
254	25	9	College Students	Attitudes	Age	Chronological age
254	25	9	College Students	Perception of competence	Age	Chronological age
254	25	9	College Students	Perception of warmth	Age	Chronological age
254	25	9	College Students	Attitudes	Contact quality	6-items asking the text to which previous contact was “enjoyable”, “personal”, “pleasant”,

							"worthwhile", "close", "genuine"
	254	25	9	College Students	Perception of competence	Contact quality	6-items asking the text to which previous contact was "enjoyable", "personal", "pleasant", "worthwhile", "close", "genuine"
	254	25	9	College Students	Perception of warmth	Contact quality	6-items asking the text to which previous contact was "enjoyable", "personal", "pleasant", "worthwhile", "close", "genuine"
	254	25	9	College Students	Attitudes	Contact quantity	Frequency of interactions/exposure with autistic individuals (school setting, close friends, family members)
	254	25	9	College Students	Perception of competence	Contact quantity	Frequency of interactions/exposure with autistic individuals (school setting, close friends, family members)
	254	25	9	College Students	Perception of warmth	Contact quantity	Frequency of interactions/exposure with autistic individuals (school setting, close friends, family members)
Lu et al. (2020)	1002	NR	32	College Students	Multidimensional Attitude Scale toward Persons with Disabilities (MAS)	Knowledge	Autism Stigma and Knowledge Questionnaire (ASK-Q)
Lu et al. (2021)	869	NR	32	College Students	Social Distance Scale	Knowledge	Autism Stigma and Knowledge Questionnaire (ASK-Q)
	869	NR	32	College Students	Social Distance Scale	Contact Quantity	Not heard of autism; heard of autism but no contact; or heard of autism and had contact
	869	NR	32	College Students	Negative stereotype (dangerousness)	Knowledge	Autism Stigma and Knowledge Questionnaire (ASK-Q)

	869	NR	32	College Students	Negative stereotype (dangerousness)	Contact Quantity	Not heard of autism; heard of autism but no contact; or heard of autism and had contact
	869	NR	32	College Students	Negative stereotype (personal responsibility)	Knowledge	Autism Stigma and Knowledge Questionnaire (ASK-Q)
	869	NR	32	College Students	Negative stereotype (personal responsibility)	Contact Quantity	Not heard of autism; heard of autism but no contact; or heard of autism and had contact
	869	NR	32	College Students	Negative stereotype (discontinuity)	Knowledge	Autism Stigma and Knowledge Questionnaire (ASK-Q)
	869	NR	32	College Students	Negative stereotype (discontinuity)	Contact Quantity	Not heard of autism; heard of autism but no contact; or heard of autism and had contact
	869	NR	32	College Students	Negative stereotype (social appropriateness)	Knowledge	Autism Stigma and Knowledge Questionnaire (ASK-Q)
	869	NR	32	College Students	Negative stereotype (social appropriateness)	Contact Quantity	Not heard of autism; heard of autism but no contact; or heard of autism and had contact
Mac Cárthaigh & López (2020)	156	20	11	College Students	Openness Scale	Autistic traits	Adult autism spectrum 1uotient (50 items on a Likert scale to measure autistic traits)
	175	27	11	College Students	Openness Scale	Autistic traits	Adult autism spectrum 1uotient (50 items on a Likert scale to measure autistic traits)
	326	24	19	College Students	Openness Scale	Contact quantity	Frequency of regular contact with autistic people in terms of immediate family, extended family, friends, classmates, work
	331	23	4	College Students	Openness Scale	Knowledge	Autism survey questionnaire (19 items to evaluate knowledge of autism (agree, don't know, disagree)
Massa et al. (2020)	101	29	47	NR	Social Distance Scale	Gender	Female vs. Male
	101	29	47	NR	Social Distance Scale	Age	Emerging adult (18-29) vs. Adults (30+)
	101	29	47	NR	Social Distance Scale	Contact quality	1-item asking the perceived pleasantness of previous contact with autistic individuals (Gardiner & Iarocci, 2014)

	101	29	47	NR	Social Distance Scale	Contact quantity	Dichotomous variable asking whether the participant has a nuclear family member or not
	101	29	47	NR	Social Distance Scale	Knowledge	Autism Awareness Survey (Gillespie-Lynch et al., 2017) consisting of 12 items assessing factual knowledge
Morris et al. (2020)	222	5.68	65	Kindergarten students	Multiple response racial attitude measure (Cameron & Rutland, 2006)	Gender	Female vs. Male
	222	5.68	65	Kindergarten students	SAQ	Gender	Female vs. Male
Morrison et al. (2019)	486	21	24	College Students	Social Distance Scale	Contact quantity	Level-of-Contact Report (12 statements with varied levels of exposure to autistic individuals)
	486	21	24	College Students	First Impression Scale-Awkward	Contact quantity	Level-of-Contact Report (12 statements with varied levels of exposure to autistic individuals)
	486	21	24	College Students	First Impression Scale-Attractive	Contact quantity	Level-of-Contact Report (12 statements with varied levels of exposure to autistic individuals)
	486	21	24	College Students	First Impression Scale-Trustworthy	Contact quantity	Level-of-Contact Report (12 statements with varied levels of exposure to autistic individuals)
	486	21	24	College Students	First Impression Scale-Dominance	Contact quantity	Level-of-Contact Report (12 statements with varied levels of exposure to autistic individuals)
	486	21	24	College Students	First Impression Scale-Likeable	Contact quantity	Level-of-Contact Report (12 statements with varied levels of exposure to autistic individuals)
	486	21	24	College Students	First Impression Scale-Smart	Contact quantity	Level-of-Contact Report (12 statements with varied levels of exposure to autistic individuals)
	486	21	24	College Students	First Impression Scale-Live near	Contact quantity	Level-of-Contact Report (12 statements with varied levels of exposure to autistic individuals)
	486	21	24	College Students	First Impression Scale-Hangout	Contact quantity	Level-of-Contact Report (12 statements with varied levels of exposure to autistic individuals)

486	21	24	College Students	First Impression Scale-Sit near	Contact quantity	Level-of-Contact Report (12 statements with varied levels of exposure to autistic individuals)
486	21	24	College Students	First Impression Scale-Conversation	Contact quantity	Level-of-Contact Report (12 statements with varied levels of exposure to autistic individuals)
486	21	24	College Students	Social Distance Scale	Knowledge	Autism awareness scale (13 item questionnaire on a Likert scale to evaluate knowledge of autism)
486	21	24	College Students	First Impression Scale-Awkward	Knowledge	Autism awareness scale (13 item questionnaire on a Likert scale to evaluate knowledge of autism)
486	21	24	College Students	First Impression Scale-Attractive	Knowledge	Autism awareness scale (13 item questionnaire on a Likert scale to evaluate knowledge of autism)
486	21	24	College Students	First Impression Scale-Trustworthy	Knowledge	Autism awareness scale (13 item questionnaire on a Likert scale to evaluate knowledge of autism)
486	21	24	College Students	First Impression Scale-Dominance	Knowledge	Autism awareness scale (13 item questionnaire on a Likert scale to evaluate knowledge of autism)
486	21	24	College Students	First Impression Scale-Likeable	Knowledge	Autism awareness scale (13 item questionnaire on a Likert scale to evaluate knowledge of autism)
486	21	24	College Students	First Impression Scale-Smart	Knowledge	Autism awareness scale (13 item questionnaire on a Likert scale to evaluate knowledge of autism)
486	21	24	College Students	First Impression Scale-Live near	Knowledge	Autism awareness scale (13 item questionnaire on a Likert scale to evaluate knowledge of autism)
486	21	24	College Students	First Impression Scale-Hangout	Knowledge	Autism awareness scale (13 item questionnaire on a Likert scale to evaluate knowledge of autism)
486	21	24	College Students	First Impression Scale-Sit near	Knowledge	Autism awareness scale (13 item questionnaire on a Likert scale to evaluate knowledge of autism)
486	21	24	College Students	First Impression Scale-Conversation	Knowledge	Autism awareness scale (13 item questionnaire on a Likert scale to evaluate knowledge of autism)

Morton & Campbell (2008)	66	10	52	K-12 students	Adjective Checklist	Gender	Female vs. Male
	58	10	50	K-12 students	Adjective Checklist	Gender	Female vs. Male
	57	10	51	K-12 students	Adjective Checklist	Gender	Female vs. Male
	55	10	56	K-12 students	Adjective Checklist	Gender	Female vs. Male
	60	10	53	K-12 students	Adjective Checklist	Gender	Female vs. Male
Nah & Tan (2021)	120	37	13	Primary school teachers	14 vignettes	Gender	Female vs. Male
	120	37	13	Primary school teachers	14 vignettes	Age	Chronological age
Nevill & White (2011)	652	NR	34	College Students	Openness Scale	Gender	Female vs. Male
	652	NR	34	College Students	Openness Scale	Autistic traits	Autism spectrum quotient (50 statements on a Likert scale divided into high AQ (scores above 32) vs. low AQ (scores below 32)
Obeid et al. (2015)	346	18	37	College Students	Social Distance Scale	Gender	Female vs. Male
	329	18	40	College Students	Social Distance Scale	Gender	Female vs. Male
	675	18	35	College Students	Social Distance Scale	Contact quantity	Dichotomous variable asking whether the participant has a first-degree relative
	346	18	40	College Students	Social Distance Scale	Knowledge	Autism awareness survey (13 items on a Likert scale to evaluate knowledge on autism)
	329	18	35	College Students	Social Distance Scale	Knowledge	Autism awareness survey (13 items on a Likert scale to evaluate knowledge on autism)
Obeid et al. (2021)	493	20	28	College Students	Social Distance Scale	Gender	Female vs. Male
	493	20	28	College Students	Social Distance Scale	Age	Chronological age
	493	20	28	College Students	Social Distance Scale	Autistic traits	Ritvo autism and asperger diagnostic scale (14 item on a Likert scale to be used as a rapid autism screener)
	493	20	28	College Students	Social Distance Scale	Contact quality	1-item asking the perceived pleasantness of previous contact with autistic individuals (Gardiner & Iarocci, 2014)
	493	20	28	College Students	Social Distance Scale	Contact quantity	Dichotomous variable asking whether the participant has a nuclear family member or not

	493	20	28	College Students	Social Distance Scale	Knowledge	Autism knowledge questionnaire (49 items to evaluate knowledge about autism (agree or disagree)
Payne & Wood (2016)	1,204	20	33	College Students	Attribution Questionnaire (perceived controllability)	Contact quantity	5 items asking level of exposure to autistic individuals (e.g., peer at school, family member, friend)
	1,204	20	33	College Students	Attribution Questionnaire (anger)	Contact quantity	5 items asking level of exposure to autistic individuals (e.g., peer at school, family member, friend)
	1,204	20	33	College Students	Attribution Questionnaire (sympathy)	Contact quantity	5 items asking level of exposure to autistic individuals (e.g., peer at school, family member, friend)
	1,204	20	33	College Students	Attribution Questionnaire (helping intention)	Contact quantity	5 items asking level of exposure to autistic individuals (e.g., peer at school, family member, friend)
	1,204	20	33	College Students	Attribution Questionnaire (punitive intention)	Contact quantity	5 items asking level of exposure to autistic individuals (e.g., peer at school, family member, friend)
	1,204	20	33	College Students	Attribution Questionnaire (perceived controllability)	Knowledge	19 items identifying autistic characteristics based on DSM-5 (yes or no)
	1,204	20	33	College Students	Attribution Questionnaire (anger)	Knowledge	19 items identifying autistic characteristics based on DSM-5 (yes or no)
	1,204	20	33	College Students	Attribution Questionnaire (sympathy)	Knowledge	19 items identifying autistic characteristics based on DSM-5 (yes or no)
	1,204	20	33	College Students	Attribution Questionnaire (helping intention)	Knowledge	19 items identifying autistic characteristics based on DSM-5 (yes or no)
	1,204	20	33	College Students	Attribution Questionnaire (punitive intention)	Knowledge	19 items identifying autistic characteristics based on DSM-5 (yes or no)
	215	22	29	College Students	First Impression Scale-Awkward	Gender	Female vs. Male

	215	22	29	College Students	First Impression Scale-Attractive	Gender	Female vs. Male
	215	22	29	College Students	First Impression Scale-Trustworthy	Gender	Female vs. Male
	215	22	29	College Students	First Impression Scale-Dominance	Gender	Female vs. Male
	215	22	29	College Students	First Impression Scale-Likeable	Gender	Female vs. Male
	215	22	29	College Students	First Impression Scale-Smart	Gender	Female vs. Male
	215	22	29	College Students	First Impression Scale-Live near	Gender	Female vs. Male
	215	22	29	College Students	First Impression Scale-Hangout	Gender	Female vs. Male
	215	22	29	College Students	First Impression Scale-Sit near	Gender	Female vs. Male
	215	22	29	College Students	First Impression Scale-Conversation	Gender	Female vs. Male
	215	22	29	College Students	First Impression Scale-Awkward	Autistic trait	Broad autism phenotype questionnaire (36 items to measure subclinical characteristics of autism)
Sasson & Morrison (2019)	215	22	29	College Students	First Impression Scale-Attractive	Autistic trait	Broad autism phenotype questionnaire (36 items to measure subclinical characteristics of autism)
	215	22	29	College Students	First Impression Scale-Trustworthy	Autistic trait	Broad autism phenotype questionnaire (36 items to measure subclinical characteristics of autism)
	215	22	29	College Students	First Impression Scale-Dominance	Autistic trait	Broad autism phenotype questionnaire (36 items to measure subclinical characteristics of autism)
	215	22	29	College Students	First Impression Scale-Likeable	Autistic trait	Broad autism phenotype questionnaire (36 items to measure subclinical characteristics of autism)
	215	22	29	College Students	First Impression Scale-Smart	Autistic trait	Broad autism phenotype questionnaire (36 items to measure subclinical characteristics of autism)
	215	22	29	College Students	First Impression Scale-Live near	Autistic trait	Broad autism phenotype questionnaire (36 items to

							measure subclinical characteristics of autism)
	215	22	29	College Students	First Impression Scale-Hangout	Autistic trait	Broad autism phenotype questionnaire (36 items to measure subclinical characteristics of autism)
	215	22	29	College Students	First Impression Scale-Sit near	Autistic trait	Broad autism phenotype questionnaire (36 items to measure subclinical characteristics of autism)
	215	22	29	College Students	First Impression Scale-Conversation	Autistic trait	Broad autism phenotype questionnaire (36 items to measure subclinical characteristics of autism)
Shand & Shah (2020)	227	29	26	NR	Overall attitude	Gender	Female vs. Male
	227	29	26	NR	Overall attitude	Age	Chronological ae
	227	29	26	NR	Overall attitude	Autistic traits	Autism spectrum quotient-Short (10 items to screen for autistic traits)
	227	29	26	NR	Overall attitude	Contact quantity	Level of contact with autistic people (scores ranging from never having met an autistic person to identifying as being autistic)
	227	29	26	NR	Overall attitude	Knowledge	Autism Spectrum Knowledge Scale, General Population (31 items to evaluate knowledge of autism)
Someki et al. (2018)	577	20	46	College Students	Social Distance Scale	Gender	Female vs. Male
	577	20	46	College Students	Social Distance Scale	Contact quantity	Dichotomous variable asking whether the participant has any prior contact with autistic people or not
	577	20	46	College Students	Social Distance Scale	Knowledge	Autism awareness survey (13 statements on a Likert scale to evaluate knowledge on autism)
Underhill et al. (2019)	216	20	41	College Students	Openness Scale	Gender	Female vs. Male

Waisman et al. (2022)	98	42	30	University staff members	Autism Acceptance Scale	Age	Chronological age
	98	42	30	University staff members	Autism Acceptance Scale	Knowledge	Participatory autism knowledge-measure (29 items on a Likert scale to evaluate knowledge about autism)
	98	42	30	University staff members	Autism Acceptance Scale	Contact quality	Self-rated perceived pleasantness with autistic individuals
	98	42	30	University staff members	Autism Acceptance Scale	Contact Quantity	Having a nuclear family
	98	42	30	University staff members	Autism Acceptance Scale	Gender	Female vs. Male
White et al. (2019)	214	NR	50	College Students	Attitudes toward Autistic Students	Knowledge	A checklist of 30 ‘incorrect’ and ‘correct’ behaviors
White et al. (2020)	250	13	52	K-12 students	Social Distance Scale	Gender	Female vs. Male
	250	13	52	K-12 students	Negative affect	Gender	Female vs. Male
	250	13	52	K-12 students	Social Distance Scale	Age	Chronological age
	250	13	52	K-12 students	Negative affect	Age	Chronological age