

Interpersonal Curiosity and its Association With Social and Emotional Skills and Well-Being During Adolescence

Journal of Adolescent Research

1–33

© The Author(s) 2023

Article reuse guidelines:

sagepub.com/journals-permissions

DOI: 10.1177/07435584231162572

journals.sagepub.com/home/jar

Jinjoo Han¹ , Niobe Way¹,
Hirokazu Yoshikawa¹, and
Crystal Clarke¹

Abstract

While intellectual curiosity has been widely studied in the field of child development, interpersonal curiosity and its association with social and emotional skills and well-being has rarely been investigated. This mixed-methods study explored the dimensions of interpersonal curiosity, examined how each dimension was associated with social and emotional skills and well-being, and investigated the moderating role of gender among middle school students. 389 seventh-grade students in seven public middle schools in New York City (Mage = 12.52; 48% female) completed an online survey that included an interpersonal question-generation measure. The sample was racially/ethnically diverse: Asian (36%), White (29%), Latino/a (16%), African American (13%), and Other (6%). Content analysis guided by grounded theory approach revealed four dimensions of interpersonal curiosity: Curiosity about Me (15%), Curiosity about You (33%), Curiosity about Our Relationship (3%), and Curiosity about Your Relationships (6%). Results indicated that the dimensions of interpersonal curiosity were positively

¹New York University, USA

Corresponding Author:

Jinjoo Han, The Metropolitan Center for Research on Equity and the Transformation of Schools, Steinhardt School of Culture, Education and Human Development, New York University, 726 Broadway, 517, New York, NY 10003, USA.

Email: jinjoo.han@nyu.edu

associated with social and emotional skills and well-being, and that gender moderated such associations. Our findings suggest the need to investigate this multidimensional construct and consider it a core component of healthy adolescent development.

Keywords

early adolescence, mixed methods, positive youth development, social development, gender

We are wired to be social. We are driven by deep motivations to stay connected to friends and family. We are naturally curious about what is going on in the minds of other people. . . (Lieberman, 2013, pp. ix)

Interpersonal curiosity, or the desire to know about the inner and outer experiences of other people (Litman & Pezzo, 2007; Renner, 2006), is arguably the foundation of social and emotional development and well-being (Lieberman, 2013; Way et al., 2018). It is through asking questions about another person's thoughts, feelings, intent, experiences, actions, motivations, and desires that we learn about ourselves and each other and thus develop close relationships that are essential for our mental health (Dunn, 1988; Engel, 2015; Gilligan, 1982; Hrdy, 2009; Lieberman, 2013). According to social neuroscientist Lieberman (2013), our brains default to wondering about the thoughts and feelings of other people, and by age of 10, we have spent approximately 10,000 hr asking questions of others to learn about them. He further argues that such curiosity is a catalyst of empathy as it requires us to "understand the inner emotional worlds of other people and then act in ways that benefit other people and our relationships with them" (Lieberman, 2013, p. 160). Despite the mostly theoretical suppositions about the role of interpersonal curiosity and its impact on our social and emotional skills and well-being, researchers have rarely investigated the construct or the associations with the social and emotional domains of human development (exceptions include Halpern, 2001; Kaczmarek et al., 2014; Kashdan & Roberts, 2006; Murphy, 2019). When curiosity has been studied, the focus has been almost exclusively on intellectual curiosity (Chouinard et al., 2007; Gurning & Siregar, 2017; Litman, 2008). As a result, prior research has failed to recognize that interpersonal curiosity is likely linked to intellectual curiosity as understanding ideas may stem from exploring people's perceptions of them (Engel, 2015). Even the research and practice of social and emotional learning (SEL) rarely includes or investigates this important human capacity

(e.g., CASEL, 2020). The purpose of this paper is to investigate the dimensions of interpersonal curiosity and its associations with social and emotional skills and well-being in a sample of middle school students. Our focus on middle school students is based on research indicating that while interpersonal curiosity plays an important role throughout life, it is a particularly important skill during a period of development when young people seek close friendships in which they can reveal themselves openly and honestly, share experiences and beliefs, and feel validated (J. Y. Chu, 2005; Collins & Steinberg, 2006; Dunn, 1988; Eccles et al., 1998; Way, 2004, 2011, 2013).

The Study of Interpersonal Curiosity

Research on interpersonal curiosity (also termed social curiosity) dates back to Singer and Antrobus's (1963) work that focuses on dispositional tendencies to passively wonder about people's day-to-day life experiences. More than a half-century later, a handful of researchers have examined interpersonal curiosity in children and young adults. They find that starting at around the age of three, children ask a wide range of questions regarding the emotions, thoughts, and behaviors of others that help them understand both themselves and those around them (Dunn, 1988; Engel, 2015). In her classic book, *The Beginning of Social Understanding*, Dunn (1988) reports that preschoolers have more interest in other people than when they were toddlers, suggesting that interpersonal curiosity increases in the early years of development. O'Neill et al. (2009) conducted a study of preschoolers' peer-to-peer conversational initiations by videotaping the snack-time conversations of a class of 25 preschoolers for 21 weeks. They found that over 77% of all initiations were person related and about 30% referenced mental states including thoughts and feelings of others, suggesting that preschoolers are using their developing understanding of the mind and asking questions to find common ground with peers. Another study reported that the stories of 5-year-olds are not just focused on themselves but also about themselves in relation to other people, suggesting, once again, that interpersonal curiosity is at play (Miller et al., 1992).

Engel (2015), the author of *The Hungry Mind*, has also investigated curiosity among young children. She reports that when asked to talk about their friends, 4-year-olds tended to describe the friend's physical characteristics or shared experiences, but by the time children are 10, much more of their knowledge about their friends conveyed information about a friend's landscape ("she just read *The BFG* for our book report but she hated it 'cause the teacher told us that the author doesn't like children so he makes bad stuff happen to them") and biological information ("her parents got divorced when

she was little”) (p. 141). While the author interprets these findings as evidence of “gossip,” with the implicit assumption that getting and giving information about others is essential to communal life (Dunbar, 2004; Engel, 2015), it is also indicative of interpersonal curiosity since the primary way to gain knowledge about a friend is by asking questions.

With college students and adults (age ranged from 16 to 77 years), research suggests that interpersonal curiosity is a multi-dimensional construct. Litman and Pezzo (2007) identified interpersonal curiosity as a three-dimensional concept: (1) “Curiosity about Emotions” (e.g., Try to understand people’s feelings), (2) “Spying, and Prying” (e.g., Feel comfortable asking about private life), and (3) “Snooping” (e.g., Look at things in people’s rooms). Additionally, the dimensions can be distinguished according to whether the focus is on a broad interest in how other people behave and feel (e.g., general social curiosity) or an interest in interpersonal information that is obtained by unobtrusive or covert exploratory behaviors (e.g., covert social curiosity) (Renner, 2006). Collectively, these findings suggest that adults tend to engage in various kinds of overt and covert exploratory behaviors in order to gain different kinds of information including internal and external experiences of others.

While these studies suggest that interpersonal curiosity is an important construct in human development, we know little about it outside of these few studies of early childhood and adulthood. Interpersonal curiosity is an important aspect of social and emotional learning and well-being throughout the lifespan (Engel, 2015), yet the dimensions of it may vary depending on the developmental period. During early adolescence, for example, when there is a need for both self-affirmation and connection, interpersonal curiosity may not only be a key part of how they gain such affirmation and connection but also may involve dimensions of interpersonal curiosity that are not necessarily as relevant in other developmental periods (e.g., Levitt et al., 1993). For example, a dimension of interpersonal curiosity could be “what the other person thinks of me” (Erath et al., 2007). Asking such questions helps them gain a sense of self-worth by comparing themselves with others and having others tell them what they like about them (Byrne & Shavelson, 1996; Weil et al., 2013). Yet no studies have been conducted looking at the dimensions of interpersonal curiosity during early adolescence.

Interpersonal Curiosity and Social-Emotional Development

Not only have there been few studies of interpersonal curiosity of any age group, but researchers have yet to investigate the association between interpersonal curiosity and social and emotional skills and well-being even though

such curiosity has been linked to empathy and the ability to connect to others (Dunn, 1988; Kashdan et al., 2020). Judy Dunn notes that understanding the thoughts, feelings, intentions, and actions of others is as fundamental to our growth and well-being as understanding the self and, in fact, leads to deepening one's understanding of the self and one's identity. Kashdan et al. (2020) found that college students who are more likely to explore other people's behaviors, thoughts, and feelings are more likely to have healthy psychological outcomes including open-mindedness, extraversion, agreeableness, low negative emotionality, interpersonal competencies, and low levels of loneliness. Research also suggests that depressed people are more likely to experience decreased curiosity (Kaczmarek et al., 2014; Rodrigue et al., 1987), underscoring the association between curiosity and psychological adjustment. Emerging research indicates that interpersonal curiosity is also significantly associated with creating and maintaining satisfying conversations, interpersonal closeness, and intimate relationships (e.g., Engel, 2015; Kashdan & Roberts, 2006; Kashdan et al., 2011). Studies have even suggested that empathy or active listening and curiosity are one and the same construct (e.g., Bodie, 2011; Lieberman, 2013; Murphy, 2019). Question asking may not only be associated with well-being but may itself be a fundamental social and emotional skill (Halpern, 2001; Main et al., 2017; McEvoy et al., 2013; Taberner & Siggins, 2015). Active listening occurs when a listener listens by asking questions about another person's thoughts, feelings, intent, experiences, and motivations in order to understand the world in the way the speaker sees it (Murphy, 2019; Rogers & Farson, 1987). The social and emotional learning process includes, but is not necessarily limited to, paying attention to the content of another person's narrative and behaving responsibly (CASEL, 2020). It is possible, therefore, that active listening or the capacity to ask questions that solicit the thoughts and feelings of others is the basis for all social interaction (e.g., Payton et al., 2000).

The association between interpersonal curiosity and social and emotional skills and well-being may be moderated by gender as girls are socialized to be more concerned about the thoughts and feelings of others than boys (Gilligan, 1982; Maccoby, 2000; Way, 2011). The gender socialization literature suggests that girls are often socialized to be more relationship- and collective-oriented, or to care for others more, and work harder to develop social connections than boys (Chaplin & Aldao, 2013; Gilligan, 1982; Rueger et al., 2010). Thus, patterns of interpersonal curiosity may reflect gender socialization. Not only may girls be more likely to be interpersonally curious, their social and emotional well-being may be more strongly associated with interpersonal curiosity than among boys. Since interpersonal curiosity is more expected among girls than among boys, its absence may have more of a

negative effect on girls' social and emotional well-being than on boys. Given the differences in the socialization of girls and boys as it relates to interpersonal curiosity (Chaplin & Aldao, 2013; Gilligan, 1992; Way, 2011), it is expected that girls will report higher levels of interpersonal curiosity and that curiosity will also be more strongly linked to self-reported adjustment.

The Current Study

Given the gaps in the research literature, the current study aims to explore:

- (1) What are the dimensions of self-reported interpersonal curiosity among middle school students? How do the dimensions vary by gender?

Hypothesis: We expected that girls will report higher levels of interpersonal curiosity than boys.

- (2). Are the dimensions of self-reported interpersonal curiosity associated with social and emotional skills (i.e., empathy, active listening) and well-being (i.e., friendship quality, depressive symptoms)?

Hypothesis: We expected that higher levels of interpersonal curiosity would be associated with better social and emotional skills and well-being.

- (3). Are the associations between self-reported interpersonal curiosity and middle school students' social and emotional skills and well-being moderated by gender?

Hypothesis: We expected that the association between interpersonal curiosity and social and emotional skills and well-being would be stronger for girls than for boys.

Method

Sample and Procedure

This study uses student outcome data from an observational study of the Listening Project (LP) with a pre-post design. The LP is a classroom-based intervention that trains middle school students and their English/Humanities teachers in a method of semi-structured interviewing designed to create more empathic, trusting, and connected individuals and relationships inside and outside of classrooms (see Way et al., 2018). The LP served 527 seventh-grade students in seven public middle schools in New York City. The response rate was 75%: 389 of 527 students and their parents assented and consented to participate in the evaluation of the Listening Project. All participating

classes in the middle schools with which we collaborated were given the opportunity to participate in the evaluation of the Listening Project. The criteria for student selection were that students must be (a) enrolled as students in our partnered schools and (b) have given assent and parental consent to participate in the evaluation of the LP. The student survey was administered through Qualtrics Online Survey Software at two time points before and after the implementation of the project. The surveys take the students approximately 40 min to complete. We apply a mixed-method approach to data (i.e., quantifying qualitative data for integration with quantitative data) collected from 389 seventh-grade students. Characteristics of the students in our analytic sample are shown in Table 1, and descriptive statistics of racial composition with the total number of student participants by the school are shown in the online supplemental material (see Table S1). The average student was 12.65 years old ($SD=0.6$) at the beginning of the project, and 48% were female. The sample was somewhat racially/ethnically diverse, including individuals who identified their primary racial/ethnic label as Asian (36%), White/European (29%), Latino/a (16%), African American (13%), and Other (6%). The current study was reviewed and approved by the Institutional Review Board of New York University as well as the New York City Department of Education.

Measures

All quantitative variables, except student demographic variables, were averaged between the two measurement points. Our decision to use averages of our quantitative variables hinged on providing a more robust estimate of the manifestation of those variables (see Duncan, 2003; Mashburn et al., 2008 for similar types of analyses with two assessment time points). The average score of each variable is calculated by each subject across two-time points; to capture the average amount, for example, of “question-asking skills” of interpersonal curiosity and social and emotional skills and well-being that individual students possess rather than change from the baseline. In the case of assessing levels of interpersonal curiosity, our focus is on the construct itself, its dimensions, and its correlation with psychological and social skills and well-being and not whether it changed over time. Therefore averaging across the two time points seemed like the most robust way of measuring interpersonal curiosity and our other quantitative variables.

Interpersonal Curiosity. We developed an interpersonal question-generation measure called the Interpersonal Curiosity Instrument (IPCI) to gain insight into the dimensions of interpersonal curiosity (Litman & Pezzo, 2007;

Table 1. Descriptive Statistics of Study Variables and Student Characteristics.

Characteristic	<i>n</i>	<i>M</i> or %	<i>SD</i>	Minimum	Maximum
Variable					
Curiosity about Me	389	1.13	1.50	0	7.5
Curiosity about You	389	2.60	2.06	0	8
Curiosity about Our Relationship	389	0.20	0.44	0	3
Curiosity about Your Relationships	389	0.43	0.70	0	4
Information Seeking	389	1.28	1.40	0	6
Unclassified	389	0.68	1.17	0	8
No Question	389	1.53	2.30	0	8
Empathy	387	3.59	0.70	1.57	5
Active Listening	388	3.64	0.78	1	5
Quality of friendship	385	3.79	0.77	1	5
Depressive symptoms	387	1.40	0.41	1	2.75
Covariate					
Age (years)	378	12.65	0.65	12	15
Sex: Female (%)	187	48.07			
Race/ethnicity (%)					
Asian	135	35.71			
African American	50	13.23			
White	112	29.63			
Latino/a	59	15.61			
Other	22	5.82			

Note. *N* = 389; *M* = Mean; *SD* = Standard Deviation.

Renner, 2006). We used the following prompt to elicit curiosity about other people, and two lines and no word limit were provided per question: "Everyone has a number of people who are important in his or her life. These questions ask about your curiosity with each of the following people: closest friend, teacher, mother or female caretaker, and father or male caretaker".

The two questions that I most want to ask my closest friend are:

The two questions that I most want to ask my teacher in this class are:

The two questions that I most want to ask my mother or female caretaker/caregiver are:

The two questions that I most want to ask my father or male caretaker/caregiver are:

The choice of these four focal persons in the social context of middle school students was guided by the ecological model of human development

(Bronfenbrenner, 1986). We asked the following question with attention to diverse family structures: “The following questions ask about a parent or caretaker in your life. Please tell us who you will answer these questions about.” The options are as follows: (1) My mom/one of my moms; (2) My dad/one of my dads; and (3) Other (please specify). Every response was independently coded according to instructions included in the codebook (see Table 2 for codebook) by two trained coders at each assessment point. We calculated the average Cohen’s kappa values across a random set of 20% of the responses at each time point. The average inter-rater reliability is 0.88, indicating substantial agreement (0.86 at pre-test; 0.90 at post-test; Landis & Koch, 1977).

Empathy. Students’ empathy was measured using a shortened version of the Interpersonal Reactivity Index (IRI) (Davis, 1980; see Table S2 in the online supplemental material for the scale with psychometric properties). Responses range on a five-point Likert scale ranging from 0 (“Does not describe me well”) to 4 (“Describes me very well”), with higher mean scores indicating higher empathic capacity ($\alpha = .80$ at time 1; $\alpha = .83$ at time 2).

Active Listening. An adapted version of the Listening Competency Scale (LCS) was used to measure active listening (Ford et al., 2000; see Table S3 in the online supplemental material for the scale with psychometric properties). The LCS assesses students’ self-perceived active listening competencies on an eight-item scale including statements such as “I ask follow-up questions until I fully understand someone.” Students responded to the statements on a five-point Likert scale ranging from 1 (“Never true”) to 5 (“Always true”), with higher mean scores indicating higher self-perceived active listening behavior ($\alpha = .90$ at time 1; $\alpha = .91$ at time 2).

Friendship Quality. Friendship quality was measured on the 9-item positive dimension of the network of relationships inventory (NRI) (companionship, satisfaction, intimacy; Furman & Buhrmester, 1985). Students were asked to write down the name of the person they considered to be their best friend. They were instructed that this person could not be their romantic partner or a family member. Students then had to answer a series of questions on their relationship with this specific best friend including statements such as “How satisfied or happy are you with your relationship with this person?” Responses were recorded on a five-point Likert scale ranging from 1 (“Little or none”) to 5 (“The most”), with higher overall scores indicating higher perceived quality of relationships with closest friends ($\alpha = .90$ at time 1; $\alpha = .89$ at time 2).

Table 2. Codebook: Dimensions of Interpersonal Curiosity, Definitions, and Examples.

Dimension: Target of Curiosity

Code	Dimension	Definition	Example
1	Curious about Me	This dimension encompasses exploratory questions that are about the subject. These questions either 1) focus on the subject him/herself; or 2) to understand/explore the subject him/herself.	<ul style="list-style-type: none"> • What do you honestly think about me? • Am I better than you? • As a friend have you realized any constructive criticism on either my behavior or in an educational way?
2	Curious about You	This dimension encompasses exploratory questions that are about the focal person. The focus of curiosity is on the focal person. The aim of these questions is to understand who the focal person is.	<ul style="list-style-type: none"> • Did you do well in school? • What is your favorite food? • What is your biggest fear?
3	Curious about Our Relationship	This dimension encompasses exploratory questions that are about the subject's relationship with the focal person. These questions tap into a bond or connection the subject has with the focal person.	<ul style="list-style-type: none"> • What made us be this close? • What is your favorite memory of us together? • Why and how did I become your friend?
4	Curious about Your Relationships	This dimension encompasses exploratory questions that are about the focal person's relationships with others. These questions tap into a bond or connection the focal person has with a third party.	<ul style="list-style-type: none"> • When did your mom and dad split up? • Do you actually hate your brother? • Why are you still friends with Tilda?
5	Information Seeking	This dimension encompasses general questions that either (1) don't show relational curiosity; (2) don't allow one to understand the focal person in a meaningful way; (3) ask about specific kinds of information or facts about something; or (4) request something.	<ul style="list-style-type: none"> • Can I do extra credit? • What is my cycle project grade? • What did you get on your last report card?

(continued)

Table 2. (continued)

Dimension: Target of Curiosity

Code	Dimension	Definition	Example
Additional Codes: If the questions that do not fit five categories of the target of curiosity above it can be coded as either (6) Unclassified or (7) No Question.			
6	Unclassified	This code includes statements that are not questions and/or miscellaneous questions. These questions don't show relational curiosity or allow one to understand the focal person in a meaningful way and are either silly, random, disingenuous in nature.	<ul style="list-style-type: none"> • Why are you calling me? • I want McDonalds. • Why is the cat always sad?
7	No Question	This code includes statements indicating that the respondent has no question to ask or is uncertain about questions.	<ul style="list-style-type: none"> • IDK • I have no question • Nothing

Depressive Symptoms. Depressive symptoms were measured with the Children’s Depression Inventory–Short Form (CDI-Short) (Kovacs, 1992). This 10-item scale measures a variety of self-reported depressive symptoms. Each item consists of three phrases [e.g., “I am sad once in a while” (1)“I am sad many times” (2)“I am sad all the time” (3)], and students were asked to pick the statement that best represents how they feel. Higher composite scores indicate higher depressive symptomatology ($\alpha = .86$ at time 1; $\alpha = .90$ at time 2).

Student Covariates and Moderator. Student covariates¹ included age in years and indicators for race/ethnicity (1 =White/European, 2=Black/African American, 3=Latino/a, 4=Asian American, 5=Other (e.g., Native Hawaiian and Other Pacific Islanders, American Indian/Alaska Native, and other groups). White/European race was chosen as the reference group. Gender was selected as the moderator (1 = female; 0 = male).

Missing Data

Overall, missing data rates were quite low. Of the full sample, 95.29% fully completed surveys at both waves. Although missing data on study variables were negligible (ranges: 0.5-2.8%), missing values were imputed using multiple imputations by chained equations procedures in Stata 15 and estimates were combined across 10 imputed datasets (von Hippel, 2020).

Data Analysis

Aim 1: Dimensions of Interpersonal Curiosity & Gender Difference. To address our first research question, we analyzed the responses from the IPCI by employing an inductive coding approach (e.g., an intensive, open-ended, and iterative process that simultaneously involved data coding/analysis and memo-writing). Guided by grounded theory principles (Glaser & Strauss, 1967), we began the coding analysis by first reviewing all responses in full to understand the data in its entirety, identifying patterns and themes that emerged, and extracting key components. We iteratively recorded all emerging ideas, possible codes, and categories. The next step involved merging and revising that list into a set of mutually exclusive categories such that each response would fit into one of the categories. In later phases of the research process, we employed relevant literature as a comparison and conceptual mapping to facilitate the emergence of the core concepts and categories (Giske & Artinian, 2007). As such, our approach was neither solely inductive nor solely deductive, but a combination of both (Deterding & Waters, 2021).

During a series of meetings, we developed a codebook that defined each of the categories with corresponding examples (see Table 2). The resulting five categories—Curiosity about Me; Curiosity about You; Curiosity about Our Relationship; Curiosity about Your Relationships; and Information Seeking—will be referred to here as “*dimensions*” of interpersonal curiosity. Each dimension analyzed *the focus or target* of curiosity. The first four emergent dimensions were driven by the data, which are aligned with the bioecological model of human development (Bronfenbrenner, 1986). The focus of “Curiosity about Me” is the respondent themselves (e.g., “What do you honestly think about me?”); the focus of “Curiosity about You” is the people in their microsystem including closest friends, teachers, parents/caretakers (e.g., “How was it being a teacher?”); the focus of “Curiosity about Our Relationship” is proximal processes involving interaction with the people in their microsystem (e.g., “What made us be this close?”); and the focus of “Curiosity about Your Relationships” is proximal processes involving interactions among the people in their microsystem (e.g., “When did you meet dad?”). The last dimension “Information Seeking” was derived from prior relevant literature. Although information-seeking behavior has been largely considered as the intrinsic desire to seek out and acquire new information (Berlyne & Frommer, 1966), we define it as general questions to seek specific kinds of information or facts that do not show curiosity about persons. All the ancillary information or questions that did not fit the five dimensions were captured by two additional codes: Unclassified and No Question. To ensure the dependability of the findings, we recruited a team of two graduate students that we trained as coders in the seven codes. Consensus in the

instances of coding discrepancies was gained through discussions with the authors.

The last phase of the content analysis involved quantifying frequency counts coded into each dimension for integration with quantitative data. In order to assess the overall pattern of each dimension, we calculated the number of times a code occurred (frequency counts) in the data and then divided the frequency counts of each code by the total number of solicited questions at each time point. These frequency counts were then averaged across two assessment time points. To generate an individual score, we created multiple codes using STATA by following three steps. First, we created a set of new variables at each time point representing the frequency counts of codes in each dimension for each of the focal persons. Second, using `egen's rowtotal` function in STATA, we created another new set of variables at each time point representing the sum scores of frequency counts from the two questions students generated for each focal person. Lastly, we added the previously created variables to represent the sum scores of each dimension across four focal persons using `egen's rowtotal` function in STATA (thus each score ranges between 0 and 8). In this way, a numeric value was created to indicate the number of questions in each code category. For example, a score of 4 for the code "Curiosity about You" means that of the total set of eight questions generated by the participant, four of those questions were directed to one of the focal persons. A score of 2 for the code "Curiosity about Me" means that of the total set of eight questions generated by the participant, two questions asked the focal person about the participant themselves. A score of 1 on "Curiosity about Our Relationship" indicates that of the eight questions generated by the participant, one of them asked the focal person about their relationship with the participant. A score of 0 on "Curiosity about Your Relationships" indicates that of the eight questions generated by the participant, no question was asked about the focal person's relationships with others in their social networks. These values were then averaged across two assessment time points to provide an overall estimate of the participants' capacity to generate interpersonally curious questions. Independent samples t-tests were carried out to examine whether the self-reported interpersonal curiosity differed by student gender.

Aims 2 & 3: Assessing Dimensions of Interpersonal Curiosity as Predictor of Student Outcomes & The Moderating Role of Gender. Multiple regression analyses for student outcomes were estimated hierarchically in three steps. The clusters at the school level is too few to run a formal multi-level model. Results did not differ when adding a categorical variable of school as a covariate in the model. Since the model fit did not improve by adding the school level

covariate, we used a more parsimonious model. There was no evidence of multicollinearity in our data based on the variance inflation factor or VIF (range: 1.34–1.41). In the first model, each student outcome was regressed on student characteristics (Model 1). In the second model, five emergent dimensions were added (Model 2). In the third model, interaction terms between the first four emergent dimensions of interpersonal curiosity and a dummy variable indicating whether the student is a girl or boy were added (Model 3), controlling for the student covariates and the dimension of “*Information Seeking*” (Baron & Kenny, 1986). If the interaction term was significant, we examined the significance of the simple slopes representing the relationship between gender (girls vs. boys) and student outcome at one standard deviation above and below the mean of the dimension of interpersonal curiosity. The interaction effect was considered significant when 95% confidence interval did not include zero (Aiken & West, 1991).

Sensitivity Analysis

Beyond the main analyses described above, we also ran a sensitivity analysis to identify whether the conclusions of our Research Question 1 may have differed under different relationships with each of the four focal persons in our sample. We compared the results of our main analysis estimating frequency counts of each dimension of interpersonal curiosity across the four focal persons with those from the sensitivity analysis that included frequency counts of each dimension of interpersonal curiosity by each of the focal persons and by gender, respectively. To match the aim of Research Question 1, we conducted a set of independent samples *t*-tests to examine gender differences in each dimension of interpersonal curiosity for each of the four focal persons. Here we also used the same approaches to generate an individual score like those used in the main analyses described above.² However, we did not run regression models to examine the association between the dimensions of interpersonal curiosity measured for each focal person and student outcomes, due to a lack of theoretical reasoning behind those associations. Future research should explore such questions.

Results

Aim 1: Dimensions of Interpersonal Curiosity & Gender Difference

The qualitative content analysis of solicited questions from the IPCI revealed five dimensions of interpersonal curiosity: (1) Curiosity about Me (15% of

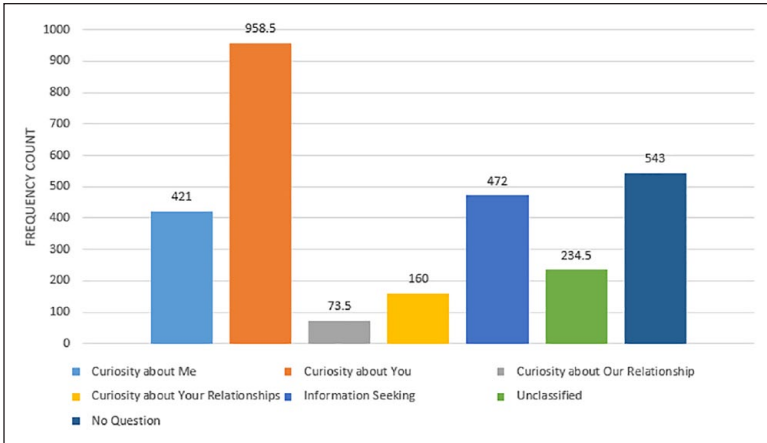


Figure 1. Identified code across the four focal persons.

responses); (2) Curiosity about You (33%); (3) Curiosity about Our Relationship (3%); (4) Curiosity about Your Relationships (6%), and (5) Information Seeking (16%). Questions that did not fit the aforementioned dimensions were coded as either Unclassified (8%) or No Question (19%). Frequency counts of all five substantive codes across the four focal persons and by each of the four focal persons are visually summarized in Figures 1 and 2, respectively. Table S4 in the online supplemental material shows the distribution of dimensions as well as additional identified codes in our sample. Correlations between study variables are shown in Table 3.

Dimension 1: Curiosity About Me. Dimension 1 “*Curiosity about Me,*” which comprised 421 questions (15% of the sample), describes self-focused curiosity that is about the respondent or subject themselves. Questions were considered “*Curiosity about Me*” if they either solely focused on the subject or tried to understand how the focal person perceived or judged the subject. This dimension captures self-oriented questions which can be viewed as reflective of a desire for affirmation and a sense of self-worth. Relevant quotes by the four focal persons are as follows: “Am I a good student?”; “Do you think I’m smart?”; and “Am I your favorite child?” Regardless of the topic of curiosity (e.g., feelings, emotions, internalized thoughts, etc.) that may vary depending on the participant’s relationship with the focal person, Dimension 1 captures the subject him/herself as a target of interpersonal curiosity.

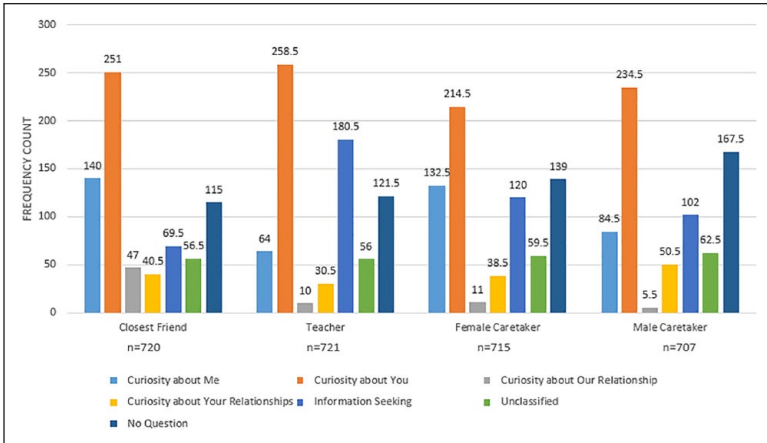


Figure 2. Identified code by each of the four focal person.

Dimension 2: Curiosity About You. Dimension 2 “*Curiosity about You*” included 959 questions (33%) characterized by direct curiosity about the focal person. This dimension can be viewed as a desire to know more about the inner and outer experiences of the other. Participants reported “Curiosity about You” with the most frequency in our sample. Relevant quotes by the four focal persons are as follows: “Are you okay?”; “What is something that has impacted you?”; “How is it like being a mother?”; and “What did you do when you were little?” The target of interpersonal curiosity of Dimension 2 is the focal person.

Dimension 3: Curiosity About Our Relationship. Dimension 3 “*Curiosity about Our Relationship*” comprised 74 questions (3%) describing curiosity about the subject’s relationship with the focal person as a target of interpersonal curiosity. Participants asked questions that tapped into a bond or connection they had with the focal person. Relevant quotes by the four focal persons are as follows: “How close do you think we are?”; “Will you miss us when you leave?”; “How do you consider our bond?”; and “Should we talk more?” Participants reported “Curiosity about Our Relationship” with the least frequency in our sample.

Dimension 4: Curiosity About Your Relationships. Dimension 4 “*Curiosity about Your Relationships*” included 160 questions (6%) describing curiosity about the focal person’s relationships with others as a target of interpersonal

Table 3. Bivariate Correlations Between Study Variables..

	1	2	3	4	5	6	7	8	9	10
1. Female	–									
2. Curiosity about Me	0.20*	–								
3. Curiosity about You	-0.01	-0.18*	–							
4. Curiosity about Our Relationship	0.16*	0.21*	-0.05	–						
5. Curiosity about Your Relationships	0.08	0.04	0.03	0.03	–					
6. Information Seeking	0.12*	-0.08	-0.25*	-0.05	-0.02	–				
7. Empathy	0.22*	0.17*	0.1*	0.10	0.12*	0	–			
8. Active Listening	0.23*	0.18*	0.07	0.11*	0.15*	0.06	0.72*	–		
9. Quality of friendship	0.3*	0.19*	-0.1*	0.16*	0.12*	0.05	0.41*	0.45*	–	
10. Depressive symptoms	0.19*	0.12*	-0.1	0.11*	-0.05	0.02	-0.2*	-0.2*	-0.1	–

Note. Female is a binary variable (0=male and 1=female).

*p < .05.

curiosity. Participants asked questions that tapped into a bond or connection the focal person had with a third party. Relevant quotes by the four focal persons are as follows: “Is your relationship good with your parents?”; “How was your relationship with your parents as a child and now?”; “How did you meet Dad?”; and “Why do you love my mom?”

Dimension 5: Information Seeking. Dimension 5 “*Information Seeking*” comprised 472 questions (16%) characterized by general questions that either (1) did not show relational curiosity; (2) did not allow one to understand the focal person in a meaningful way; (3) asked about specific kinds of information or facts about something; or (4) requested something. Thus, the last dimension was only considered relevant because it was a type of question that did not reflect interpersonal curiosity. Relevant quotes by the four focal persons are as follows: “Why is the House on Mango Street so popular?”; “What is the point of this work?”; “When is dinner?”; and “How much money do we have?”

Table 4. Results of Independent Samples Analysis Examining Gender Difference.

Identified Code	Girls		Boys		<i>t</i> (387)	<i>p</i>	Cohen's <i>d</i>
	<i>M</i>	<i>SD</i>	<i>M</i>	<i>SD</i>			
Curiosity about Me	1.45	0.11	0.84	0.10	-4.10	.00	-0.42
Curiosity about You	2.59	0.14	2.61	0.15	0.10	.92	0.01
Curiosity about Our Relationship	0.27	0.04	0.13	0.03	-3.28	.00	-0.33
Curiosity about Your Relationships	0.49	0.05	0.37	0.05	-1.67	.10	-0.17
Information Seeking	1.45	0.11	1.11	0.10	-2.40	.02	-0.24
Unclassified	0.58	0.07	0.78	0.09	1.67	.09	0.17
No Question	1.06	0.13	1.97	0.19	3.94	.00	0.40

Note. *N* = 389; *M* = Mean; *SD* = Standard Deviation. Mean values for each of the analyses across the four focal persons are shown for girls (*n* = 187) and boys (*n* = 202), as well as the results of *t*-tests (assuming unequal variance) comparing the mean values between the two groups.

Gender Difference in the Dimensions of Interpersonal Curiosity. Table 4 shows gender differences in dimensions of interpersonal curiosity across the four focal persons (distribution of the identified codes by gender can be found in Table S5 in the online supplemental material). A few statistically significant gender differences in dimensions of interpersonal curiosity emerged. Specifically, girls reported significantly higher levels of “Curiosity about Me” ($M=1.45$, $SD=0.11$) than boys ($M=0.84$, $SD=0.10$), $t(387)=-4.10$, $p<.001$. Girls also reported significantly higher levels of “Curiosity about Our Relationship” ($M=0.27$, $SD=0.04$) than boys ($M=0.13$, $SD=0.03$), $t(387)=-3.28$, $p<.001$. The response “I have no question” was recorded more frequently in boys ($M=1.97$, $SD=0.19$) than girls ($M=1.06$, $SD=0.13$), $t(387)=3.94$, $p<.001$.

Aim 2: Assessing Dimensions of Interpersonal Curiosity as Predictors of Student Outcomes

The dimensions of interpersonal curiosity showed positive bivariate correlations with some of the student outcomes, ranging from small to modest ($r=0.1$ to 0.19). Unstandardized coefficients from regression models are presented in Table 5. “Curiosity about Me” and “Curiosity about You” were significant predictors of empathy, $F(11, 370.1)=5.50$, $p<.001$, $R^2=.15$). In addition, “Curiosity about Me,” “Curiosity about You,” and “Curiosity about Your Relationships” were significant predictors of active listening,

Table 5. Unstandardized Estimates for Dimensions of Interpersonal Curiosity Predicting Student Outcomes in Regression Models.

Parameter	Empathy			Active Listening		
	Model 1	Model 2	Model 3	Model 1	Model 2	Model 3
Constant	2.86** (0.67)	2.63** (0.67)	2.53** (0.68)	3.16** (0.75)	2.84** (0.75)	2.69** (0.76)
Age	0.06 (0.05)	0.06 (0.05)	0.07 (0.05)	0.04 (0.06)	0.04 (0.06)	0.06 (0.06)
Female	0.29** (0.07)	0.23** (0.07)	0.06 (0.15)	0.33** (0.08)	0.26** (0.08)	-0.01 (0.16)
Black	-0.46** (0.11)	-0.40** (0.11)	-0.40** (0.11)	-0.34** (0.13)	-0.27* (0.13)	-0.26* (0.13)
Latino/a	-0.18* (0.11)	-0.11 (0.11)	-0.11 (0.11)	-0.23 (0.12)	-0.14 (0.12)	-0.13 (0.12)
Asian	-0.29** (0.09)	-0.26** (0.09)	-0.25** (0.09)	-0.35** (0.10)	-0.31** (0.10)	-0.30** (0.10)
Other	-0.44** (0.16)	-0.40* (0.16)	-0.38* (0.16)	-0.42* (0.18)	-0.35 (0.18)	-0.32 (0.18)
Curiosity about Me		0.06* (0.03)	0.05 (0.03)		0.07* (0.03)	0.05 (0.04)
Curiosity about You		0.05* (0.02)	0.03 (0.02)		0.05* (0.02)	0.01 (0.03)
Curiosity about Our Relationship		0.07 (0.08)	0.10 (0.15)		0.09 (0.10)	0.25 (0.17)
Curiosity about Your Relationships		0.06 (0.05)	0.10 (0.08)		0.12* (0.06)	0.13 (0.08)
Information Seeking		0.02 (0.03)	0.02 (0.03)		0.03 (0.03)	0.04 (0.03)
Curiosity about Me × Female			0.03 (0.05)			0.05 (0.05)
Curiosity about You × Female			0.07† (0.04)			0.10* (0.04)
Curiosity about Our Relationship × Female			-0.06 (0.18)			-0.23 (0.20)
Curiosity about Your Relationships × Female			-0.06 (0.11)			-0.01 (0.12)
R ²	0.11	0.15	0.15	0.09	0.14	0.15
Δ R ²	0.09	0.12	0.11	0.08	0.11	0.12

(continued)

Table 5. (continued)

Parameter	Friendship Quality			Depressive Symptoms		
	Model 1	Model 2	Model 3	Model 1	Model 2	Model 3
Constant	3.51** (0.76)	3.31** (0.77)	3.15** (0.79)	1.67** (0.42)	1.73** (0.42)	1.93** (0.42)
Age	0.01 (0.06)	0.02 (0.06)	0.04 (0.06)	-0.03 (0.03)	-0.03 (0.03)	-0.05 (0.03)
Female	0.43** (0.07)	0.37** (0.08)	0.18 (0.16)	0.15** (0.04)	0.14** (0.04)	0.10 (0.09)
Black	-0.13 (0.12)	-0.08 (0.12)	-0.07 (0.12)	0.00 (0.07)	0.00 (0.07)	0.00 (0.07)
Latino/a	0.07 (0.12)	0.12 (0.12)	0.12 (0.12)	0.04 (0.07)	0.05 (0.07)	0.06 (0.07)
Asian	-0.23* (0.09)	-0.17† (0.09)	-0.16† (0.10)	0.04 (0.05)	0.06 (0.05)	0.07 (0.05)
Other	-0.17 (0.17)	-0.05 (0.17)	-0.02 (0.17)	-0.06 (0.10)	-0.04 (0.10)	-0.04 (0.10)
Curiosity about Me		0.05† (0.03)	0.06 (0.04)		0.02 (0.02)	0.00 (0.02)
Curiosity about You		-0.03† (0.02)	-0.07** (0.03)		-0.01 (0.01)	0.00 (0.01)
Curiosity about Our Relationship		0.14 (0.09)	0.10 (0.17)		0.07 (0.05)	-0.11 (0.09)
Curiosity about Your Relationships		0.13* (0.05)	0.19* (0.08)		-0.04 (0.03)	-0.02 (0.05)
Information Seeking		0.01 (0.03)	0.02 (0.03)		0.00 (0.02)	0.00 (0.02)
Curiosity about Me × Female			0.00 (0.05)			0.04 (0.03)
Curiosity about You × Female			0.09* (0.04)			-0.02 (0.02)
Curiosity about Our Relationship × Female			0.05 (0.20)			0.26* (0.11)
Curiosity about Your Relationships × Female			-0.10 (0.11)			-0.01 (0.06)
R ²	0.11	0.15	0.15	0.04	0.06	0.08
Δ R ²	0.10	0.13	0.12	0.03	0.04	0.04

Note. N = 389. Results are based on the full available sample and 10 imputed datasets.

†p < .10, *p < .05, **p < .01.

($F(11, 369.8)=5.16, p < .001, R^2=.14$). “*Curiosity about Your Relationships*” was a significant predictor of friendship quality, ($F(11, 367)=5.75, p < .001, R^2=.15$).

Aim 3: The Moderating Role of Gender

We also tested whether the association between the dimensions of interpersonal curiosity and student outcomes differed by gender. As shown in Table 5 (Model 3), as hypothesized, there was a significant positive association between “*Curiosity about You*” and listening for girls, relative to boys ($t=2.42, p=.016$; ($F(15, 366.5)=4.31, p < .001, R^2=.16$). Analysis of simple slopes indicated that higher levels of “*Curiosity about You*” predicted higher levels of listening, but only for girls ($t=3.55, p=.000$; 95% CI [0.05, 0.17]; boys: $t=0.54, p > .05$; 95% CI [-0.04, 0.06]. This might suggest that comparatively, the relationship between being curious about others and listening skills is more pronounced for girls than boys. On the other hand, there was a significant negative association between “*Curiosity about You*” and friendship quality for boys, relative to girls ($t=-2.76, p=.006$; 95% CI [-0.12, -0.02]; girls: $t=0.57, p > .05$; 95% CI [-0.04, 0.08]. This suggests that for the same levels of “*Curiosity about You*,” boys tend to have less positive friendship quality. In addition, there was a positive association between “*Curiosity about Our Relationship*” and depressive symptoms for girls, relative to boys ($t=2.43, p=.016$; ($F(15, 369.2)=2.34, p < .001, R^2=.09$; girls: $t=2.55, p=.011$; 95% CI [0.04, 0.28]; boys: $t=-1.20, p > .05$; 95% CI [-0.28, 0.07]). This suggests that the relationship between “*Curiosity about Our Relationships*” and depressive symptoms is more pronounced for girls than boys. Figures 3 to 5 graph the aforementioned moderating role of gender in the association between dimensions of interpersonal curiosity and student outcomes.

Sensitivity Analyses

Findings from sensitivity analyses indicated that the most commonly reported dimension of interpersonal curiosity was “*Curiosity about You*,” followed by “*Curiosity about Me*,” “*Curiosity about Your Relationships*,” and “*Curiosity about Our Relationship*” for each of the focal persons. Results of independent samples t-tests to examine gender differences per focal person are shown in Table S6 in the online supplemental material. Girls reported significantly higher levels of “*Curiosity about Me*” than boys in questions asked to their closest friends and female caretakers. Girls reported significantly higher

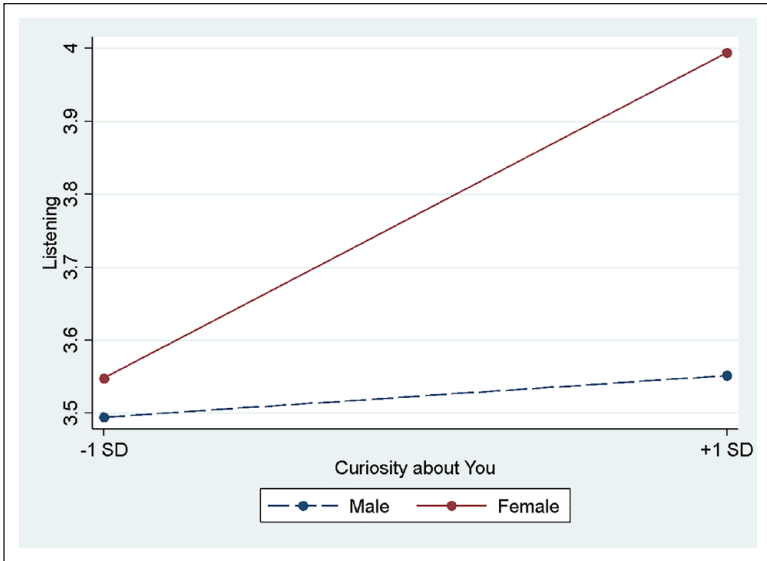


Figure 3. Moderating effect of gender on the relationship between “Curiosity about You” and active listening.

Note. Simple slopes were used to interpret the significant interactions at high (i.e., 1 SD above the mean) and low (i.e., 1 SD below the mean) values.

levels of “*Curiosity about Our Relationship*” than boys in questions asked to their closest friends and teachers. Girls also reported significantly higher levels of “*Curiosity about Your Relationships*” than boys in questions asked to their male caretakers. Boys reported significantly higher levels of “*Curiosity about You*” than girls in questions asked to their closest friends. Boys reported significantly higher levels of “*No Question*” than girls in questions asked to each of the four focal persons.

Discussion

The results of this study advance the understanding of interpersonal curiosity and its association with social and emotional skills and well-being. Importantly, our results extend prior work in this area by demonstrating the multidimensionality of the construct and its associations with social and emotional skills and well-being. These associations are moderated, in part, by the gender of the adolescent. It also suggests that the dimensions of interpersonal curiosity may differ depending on the developmental period under

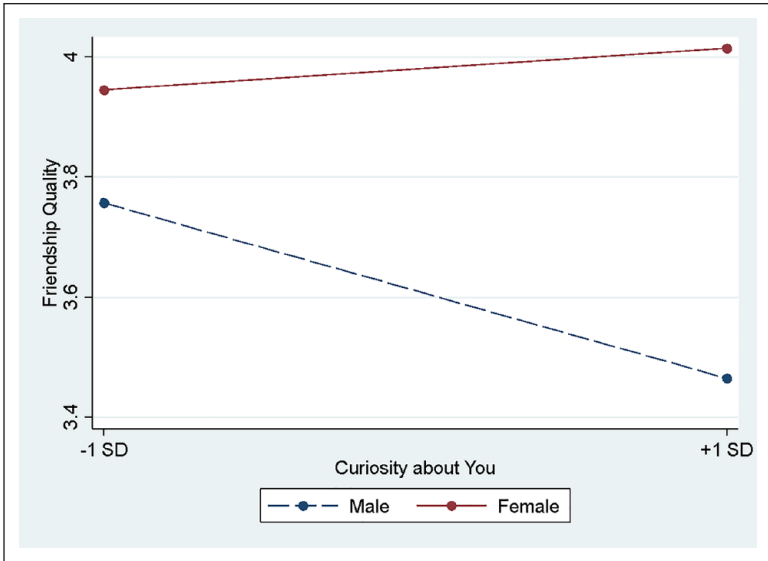


Figure 4. Moderating effect of gender on the relationship between “Curiosity about You” and friendship quality.

Note. Simple slopes were used to interpret the significant interactions at high (i.e., 1 SD above the mean) and low (i.e., 1 SD below the mean) values.

investigation. We found that the dimensions of “Curiosity about Me” and “Curiosity about Our Relationship” were more prevalent among girls than among boys, and that “No Question” was more prevalent among boys than girls. These findings suggest that gender stereotypes, with girls being more “social” and boys being more “antisocial” may shape the development of interpersonal curiosity.

Dimensions of Interpersonal Curiosity & Gender Difference

Our exploratory content analysis revealed that there are four dimensions of interpersonal curiosity among middle school students: Curiosity about Me, Curiosity about You, Curiosity about Our Relationship, and Curiosity about Your Relationships. Our findings indicate that interpersonal curiosity consists of a desire to know about the relational self, others, reciprocal relationships between the self and others, as well as others’ relationships with a third party in their social networks. “*Curiosity about Me*” was negatively correlated with “*Curiosity about You*” but positively correlated with “*Curiosity about Our Relationship*,” suggesting that self-focused curiosity was conceptually

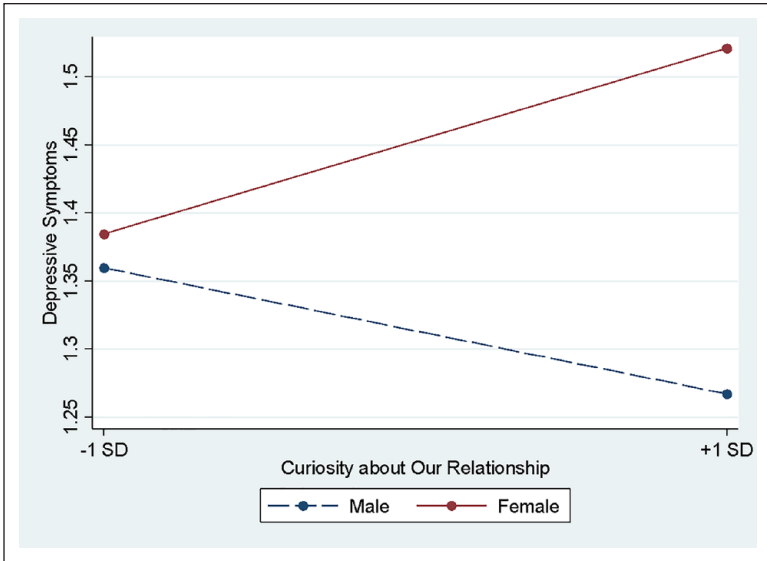


Figure 5. Moderating effect of gender on the relationship between “Curiosity about Our Relationship” and depressive symptoms.

Note. Simple slopes were used to interpret the significant interactions at high (i.e., 1 SD above the mean) and low (i.e., 1 SD below the mean) values.

distinct from other-focused curiosity but intersects with relationship-focused curiosity. In addition, even though “*Curiosity about Our Relationship*” and “*Curiosity about Your Relationships*” were generally considered to be relational, they differed in terms of the target of curiosity: while “*Curiosity about Our Relationship*” (e.g., “Do you think we will ever lose our friendship?”) suggests a reflection of insecurity, “*Curiosity about Your Relationships*” (e.g., “How are things with your other friends?”) suggests a more complicated understanding of relationships where there is an implicit acknowledgment that relationships entail getting to know the other person’s relationships.

Overall, findings indicate that the identified dimensions of interpersonal curiosity in the present study are related to but largely distinct from findings in adult reports where the existing scale of interpersonal curiosity was utilized (e.g., Litman & Pezzo, 2007). For example, just as the dimensions of interpersonal curiosity among adults were not uniform (Litman & Pezzo, 2007; Renner, 2006) neither were the dimensions of interpersonal curiosity among middle school students. The majority of middle school students focused on other people—“*Curiosity about You*”—as the main target of

curiosity, highlighting the fine details of the explorations about other people. The second most common dimension in our sample is “*Curiosity about Me*.” This dimension overlaps with “intrapersonal curiosity”—inquisitively introspecting to better understand one’s inner self—(e.g., Ask myself “Who am I really?”; Litman et al., 2017) but is a distinct form of curiosity. Specifically, the dimension “*Curiosity about Me*” provides evidence that middle school students garner social approval from both adults (desire to be a good and smart student/child) and peer sources (desire to be a cool or attractive friend), highlighting that existing dimensions of interpersonal curiosity among adults (e.g., Litman & Pezzo, 2007; Renner, 2006) are not necessarily relevant to the complex social and emotional features that middle school students experience.

Consistent with prior research suggesting that girls are more likely to be interpersonally curious (Galambos, 2004; Maccoby, 2000) we found that girls reported significantly higher levels of “*Curiosity about Me*” and “*Curiosity about Our Relationship*” than boys in questions asked to their closest friends. This finding suggests that girls may also be more in need of affirmation than boys given how often they asked the “questions about me” (“Do you think I am pretty?”) and the “questions about our relationship” (“How long do you think we will be friends for?”). We also observed an interesting pattern by gender in our sensitivity analyses, with boys reporting “*No Question*” almost twice as often as girls (25% vs. 13%). These findings suggest that interpersonal curiosity may, in fact, be deemed feminine and thus unmanly for boys to ask questions. Such a pattern is consistent with the research on boys and masculinity (Way, 2011).

Interpersonal Curiosity and Social and Emotional Skills and Well-Being

We examined whether the dimensions of interpersonal curiosity predicted middle school students’ social and emotional skills and well-being. Results revealed that student outcomes indeed varied across the dimensions. Given that all students in our sample received the Listening Project, it is difficult to disentangle the extent to which these outcome differences are reflective of students’ experiences with the intervention. Nevertheless, our findings are important in that they provide some of the first available evidence suggesting that dimensions of interpersonal curiosity are related to social and emotional skills and well-being in early adolescence. First, the multidimensionality of interpersonal curiosity discussed in the preceding text may have important implications for student outcomes. For example, students who reported

higher levels of “*Curiosity about You*” were more likely to report higher levels of empathy and active listening, even after controlling for the other dimensions of interpersonal curiosity and student covariates. Previous research suggests that curiosity plays a key role in social functioning (e.g., Kashdan & Roberts, 2006; Renner, 2006), with our research adding that interpersonal curiosity is also linked to social and emotional skills such as empathy and active listening.

However, after examining differential associations between this dimension of interpersonal curiosity and student outcomes by gender, we found positive effects of “*Curiosity about You*” on active listening for girls and negative effects of “*Curiosity about You*” on friendship quality for boys. The dimension of “*Curiosity about You*” appeared to matter more for girls than boys in terms of active listening, which allows them to follow their own curiosity by asking questions to explore the meaning of others’ inner and outer experiences. Although the negative effects of “*Curiosity about You*” on friendship quality for boys may seem counterintuitive, it is possible that those boys who do not feel like they have companionship, satisfaction, and intimacy with their friends yet yearn to know them are more likely to report curiosity about others (Way, 2011, 2013). Such curiosity may account for the negative association as it is the more lonely boys that are curious about their peers.

In addition, our sensitivity analyses—examining gender differences in each dimension of interpersonal curiosity for each of the four focal persons—revealed that girls are more likely to direct questions about themselves (e.g., Do you think I am a good friend?) to their closest friends than boys while boys are more likely to direct questions about others (e.g., “What are you planning to do with your life?”) to their closest friends than girls but less likely to ask questions about the relationship between themselves and their closest friends (e.g., “Why do you think we are such good friends”) than girls. Conforming to norms of masculinity that discourage any forms of emotional intimacy may lead boys to be less reflective about the relationship given its inherent vulnerability than girls who may be more comfortable with such vulnerability (J. Chu, 2014; Kimmel, 2008; Way, 2011).

“*Curiosity about You*” was not significantly associated with depressive symptoms, suggesting that interpersonal curiosity may only be directly relevant for psychological adjustment when it reflects insecurity. Prior work conducted by Litman et al. (2017) found that higher “intrapersonal curiosity” corresponded to perceptions of having less available self-knowledge, heightened sensitivity to others’ expression, a greater tendency to privately introspect, increased distress, and more concern about how to best cope with worry over self-relevant threats.

Similar to the questions for “*Curiosity about Me*,” “*Curiosity about Our Relationship*” suggests feelings of self-doubt or a need for affirmation from others, which is likely the reason why it is positively associated with depressive symptoms for girls (but not for boys). It is possible that early adolescent girls who are more curious about what others think about them are more likely to be self-reflective and overly sensitive about the nature of their relationships and thus more likely to report depressive symptoms (e.g., Nolen-Hoeksema et al., 2007). It also may be that adolescents who struggle with depressive symptoms may be more inquisitive about what others think about them as they seek to feel better about themselves (Gilligan, 1992). Additional research in these areas is necessary to determine what is at the root of these patterns.

Lastly, “*Curiosity about Your Relationships*” was positively associated with active listening and friendship quality, over and above the other dimensions of interpersonal curiosity and student covariates. It is possible that the higher levels of “*Curiosity about Your Relationships*” meant that the available information about the other person’s relationships helps students better understand the other person, conferring additional benefits for their social and emotional skills and well-being (Engel, 2015). After examining differential associations between this dimension of curiosity and student outcomes, we did not find gender to be a moderating role.

Limitations and Future Directions

This study is limited in several ways. First, this study is correlational in interpretation and we cannot infer causality from the current study design. Using a self-reported measure for both predictor and outcome variables can lead to inflated relationships due to the omission of factors driving student outcomes. For example, the levels of interpersonal curiosity may vary by mood and by the current status of one’s relationships. Second, although the new measure we used to identify dimensions of interpersonal curiosity answers some important research questions, it remains limited. Our measure does not reflect social dynamics such as the quality of relationships between the participants and the focal persons or relationship dynamics that could help explain some of our findings. Future research is needed to unpack these mechanisms by looking at the content of the questions generated by adolescent boys and girls, power dynamics, as well as the participants’ perception of the dynamic relationships with the focal persons. Also, in order to demonstrate the content and discriminant validity of the measure, future research is needed that incorporates the existing measures of interpersonal curiosity, such as the Five-Dimensional Curiosity Scale Revised (5DCR; Kashdan et al., 2020),

Intrapersonal Curiosity Scale (Litman et al., 2017), and Interpersonal Curiosity Scale (Litman & Pezzo, 2007). Furthermore, estimating construct validity using factor analysis in a different sample is recommended to determine how applicable these findings are to samples outside of our study sample. Third, although our study is the first to examine middle school students' interpersonal curiosity in the United States, it was not designed to represent any definitive population of interest. Although we provided the racial composition of schools in the present study to help readers contextualize information about the study sample, there was not a further exploration of race/ethnicity, including different multiracial groups, or a larger range of gender identities because this was not the focus of the study.

The findings from the present study offered new insights into the multidimensional nature of interpersonal curiosity and its association with social and emotional skills and well-being in early adolescence. It suggests that the exclusive focus on intellectual curiosity in the study of curiosity and the absence of the topic of interpersonal curiosity in the study and practice of SEL has overlooked an important component of human experience and well-being. Future studies should not only examine the experience of interpersonal curiosity and how dimensions of it may change over time, but also how such curiosity and its dimensions vary by context and culture, with those that value human connection more than self-obsessed cultures such as the U.S. may be more likely to foster such curiosity.

Author Contributions

The authors confirm contribution to the paper as follows: **Jinjo Han:** Conceptualization, Formal analysis, Investigation, Data curation, Writing-original draft and editing, Visualization, and Project administration. **Niobe Way:** Conceptualization, Methodology, Writing-reviewing and editing, Supervision, and Funding acquisition. **Hirokazu Yoshikawa:** Conceptualization, Resources, Writing-reviewing and editing, and Supervision; **Crystal Clarke:** Conceptualization, Data curation, and Writing-initial draft.

Declaration of Conflicting Interests

The author(s) declared no potential conflicts of interest with respect to the research, authorship, and/or publication of this article.

Funding

The author(s) disclosed receipt of the following financial support for the research, authorship, and/or publication of this article: This research was funded by a Lyle Spencer Research Award from the Spencer Foundation.

ORCID iD

Jinjoo Han  <https://orcid.org/0000-0003-3249-0916>

Supplemental Material

Supplemental material for this article is available online.

Notes

1. Three student characteristics (i.e., age, gender, and race/ethnicity) were selected as student covariates because of extensive research suggesting that these variables are associated with the social and psychological well-being of adolescents (Benner et al., 2018; P. S. Chu et al., 2010).
2. In this way, a numeric value was created to indicate the number of questions in each code category for each of the four focal persons. For example, a score of 1 for the code “Curiosity about You” in relationship with closest friends indicates that one out of two questions generated for closest friend were about that closest friend.

References

- Aiken, L. S., & West, S. G. (1991). *Multiple regression: Testing and interpreting interactions*. SAGE Publications, Inc.
- Baron, R. M., & Kenny, D. A. (1986). The moderator-mediator variable distinction in social psychological research: Conceptual, strategic, and statistical considerations. *Journal of Personality and Social Psychology*, *51*(6), 1173–1182.
- Benner, A. D., Wang, Y., Shen, Y., Boyle, A. E., Polk, R., & Cheng, Y.-P. (2018). Racial/ethnic discrimination and well-being during adolescence: A meta-analytic review. *American Psychologist*, *73*(7), 855–883. <https://doi.org/10.1037/amp0000204>
- Berlyne, D. E., & Frommer, F. D. (1966). Some determinants of the incidence and content of children’s questions. *Child Development*, *37*(1), 177–189.
- Bodie, G. D. (2011). The active-empathic listening scale (AELS): Conceptualization and evidence of validity within the interpersonal domain. *Communication Quarterly*, *59*(3), 277–295.
- Bronfenbrenner, U. (1986). Ecology of the family as a context for human development: Research perspectives. *Developmental Psychology*, *22*(6), 723–742.
- Byrne, B. M., & Shavelson, R. J. (1996). On the structure of social self-concept for pre-, early, and late adolescents: A test of the Shavelson, Hubner, and Stanton (1976) model. *Journal of Personality and Social Psychology*, *70*(3), 599–613.
- Chaplin, T. M., & Aldao, A. (2013). Gender differences in emotion expression in children: A meta-analytic review. *Psychological Bulletin*, *139*(4), 735–765.
- Chouinard, M. M., Harris, P. L., & Maratsos, M. P. (2007). Children’s questions: A mechanism for cognitive development. *Monographs of the Society for Research in Child Development*, *72*(1), 1–129.

- Chu, J. (2014). *When boys become boys: Development, relationships, and masculinity*. New York University Press.
- Chu, J. Y. (2005). Adolescent boys' friendships and peer group culture. *New Directions for Child and Adolescent Development*, 2005(107), 7–22.
- Chu, P. S., Saucier, D. A., & Hafner, E. (2010). Meta-analysis of the relationships between social support and well-being in children and adolescents. *Journal of Social and Clinical Psychology*, 29(6), 624–645. <https://doi.org/10.1521/jscp.2010.29.6.624>
- Collaborative for Academic, Social, and Emotional Learning [CASEL]. (2020). CASEL'S SEL framework: What are the core competence areas and where are they promoted? <https://casel.org/casel-sel-framework-11-2020/>
- Collins, W. A., & Steinberg, L. (2006). Adolescent development in interpersonal context. In W. Damon & N. Eisenberg (Eds.), *Handbook of child psychology* (Vol. 4, pp. 1003–1067). Wiley.
- Davis, M. H. (1980). A multidimensional approach to individual differences in empathy. *JSAS Catalog of Selected Documents in Psychology*, 10, 85.
- Deterding, N. M., & Waters, M. C. (2021). Flexible coding of In-depth interviews: A twenty-first-century approach. *Sociological Methods & Research*, 50(2), 708–739.
- Dunbar, R. I. M. (2004). Gossip in evolutionary perspective. *Review of General Psychology*, 8(2), 100–110. <https://doi.org/10.1037/1089-2680.8.2.100>
- National Institute of Child Health and Human Development Early Child Care, Research Network, Duncan, G. J. (2003). Modeling the impacts of child care quality on children's preschool cognitive development. *Child Development*, 74(5), 1454–1475.
- Dunn, J. (1988). *The beginnings of social understanding*. Harvard University Press.
- Eccles, J. S., Wigfield, A., & Schiefele, U. (1998). Motivation to succeed. In W. Damon & N. Eisenberg (Eds.), *Handbook of child psychology: Social, emotional, and personality development* (pp. 1017–1095). John Wiley & Sons, Inc.
- Engel, S. (2015). *The hungry mind: The origins of curiosity in childhood*. Harvard University Press.
- Erath, S. A., Flanagan, K. S., & Bierman, K. L. (2007). Social anxiety and peer relations in early adolescence: behavioral and cognitive factors. *Journal of Abnormal Child Psychology*, 35(3), 405–416. <https://doi.org/10.1007/s10802-007-9099-2>
- Ford, W. S. Z., Wolvin, A. D., & Chung, S. (2000). Students' self-perceived listening competencies in the basic speech communication course. *International Journal of Listening*, 14(1), 1–13. <https://doi.org/10.1080/10904018.2000.10499032>
- Furman, W., & Buhrmester, D. (1985). Children's perceptions of the personal relationships in their social networks. *Developmental Psychology*, 21(6), 1016–1024.
- Galambos, N. L. (2004). *Gender and gender role development in adolescence* (pp. 233–262). John Wiley & Sons Inc.
- Gilligan, C. (1982). *In a different voice: Psychological theory and women's development*. Harvard University Press.
- Gilligan, C. (1992). Women's psychological development. In E. Wright (Ed.), *Feminism and psychoanalysis: A critical dictionary* (pp. 453–457). Basil Blackwell.

- Giske, T., & Artinian, B. (2007). A personal experience of working with classical grounded theory: From beginner to experienced grounded theorist. *International Journal of Qualitative Methods*, 6(4), 67–80. <https://doi.org/10.1177/160940690700600405>
- Glaser, B., & Strauss, A. L. (1967). *Discovery of grounded theory: Strategies for qualitative research*. Taylor and Francis.
- Gurning, B., & Siregar, A. (2017). The effect of teaching strategies and curiosity on students' achievement in Reading Comprehension. *English Language Teaching*, 10(11), 191–198.
- Halpern, J. (2001). *From detached concern to empathy: humanizing medical practice*. Oxford University Press.
- Hrdy, S. B. (2009). *Mothers and others: The evolutionary origins of mutual understanding*. Harvard University Press.
- Kaczmarek, L. D., Bączkowski, B., Enko, J., Baran, B., & Theuns, P. (2014). Subjective well-being as a mediator for curiosity and depression. *Polish Psychological Bulletin*, 45(2), 200–204.
- Kashdan, T. B., Disabato, D. J., Goodman, F. R., Doorley, J. D., & McKnight, P. E. (2020). Understanding psychological flexibility: A multimethod exploration of pursuing valued goals despite the presence of distress. *Psychological Assessment*, 32(9), 829–850.
- Kashdan, T. B., McKnight, P. E., Fincham, F. D., & Rose, P. (2011). When curiosity breeds intimacy: Taking advantage of intimacy opportunities and transforming boring conversations. *Journal of Personality*, 79(6), 1369–1402. <https://doi.org/10.1111/j.1467-6494.2010.00697.x>
- Kashdan, T. B., & Roberts, J. E. (2006). Affective outcomes in superficial and intimate interactions: Roles of social anxiety and curiosity. *Journal of Research in Personality*, 40(2), 140–167. <https://doi.org/10.1016/j.jrp.2004.10.005>
- Kimmel, M. S. (2008). *Guyland: The perilous world where boys become men*. Harper.
- Kovacs, M. (1992). *Children's Depression Inventory (CDI): technical manual update*. Multi-Health Systems.
- Landis, J. R., & Koch, G. G. (1977). The measurement of observer agreement for categorical data. *Biometrics*, 33(1), 159–174.
- Levitt, M. J., Guacci-Franco, N., & Levitt, J. L. (1993). Convoys of social support in childhood and early adolescence: Structure and function. *Developmental Psychology*, 29(5), 811–818. <https://doi.org/10.1037/0012-1649.29.5.811>
- Lieberman, M. D. (2013). *Social: Why our brains are wired to connect*. OUP Oxford.
- Litman, J. A. (2008). Interest and deprivation factors of epistemic curiosity. *Personality and Individual Differences*, 44(7), 1585–1595. <https://doi.org/10.1016/j.paid.2008.01.014>
- Litman, J. A., & Pezzo, M. V. (2007). Dimensionality of interpersonal curiosity. *Personality and Individual Differences*, 43(6), 1448–1459. <https://doi.org/10.1016/j.paid.2007.04.021>
- Litman, J. A., Robinson, O. C., & Demetre, J. D. (2017). Intrapersonal curiosity: Inquisitiveness about the inner self. *Self and Identity*, 16(2), 231–250. <https://doi.org/10.1080/15298868.2016.1255250>

- Maccoby, E. E. (2000). Perspectives on gender development. *International Journal of Behavioral Development, 24*(4), 398–406. <https://doi.org/10.1080/016502500750037946>
- Main, A., Walle, E. A., Kho, C., & Halpern, J. (2017). The interpersonal functions of empathy: A relational perspective. *Emotion Review, 9*(4), 358–366.
- Mashburn, A. J., Pianta, R. C., Hamre, B. K., Downer, J. T., Barbarin, O. A., Bryant, D., Burchinal, M., Early, D. M., & Howes, C. (2008). Measures of classroom quality in prekindergarten and children's development of academic, language, and social skills. *Child Development, 79*(3), 732–749. <https://doi.org/10.1111/j.1467-8624.2008.01154.x>
- McEvoy, P., Baker, D., Plant, R., Hylton, K., & Mansell, W. (2013). Empathic curiosity: Resolving goal conflicts that generate emotional distress. *Journal of Psychiatric and Mental Health Nursing, 20*(3), 273–278. <https://doi.org/10.1111/j.1365-2850.2012.01926.x>
- Miller, P. J., Mintz, J., Hoogstra, L., Fung, H., & Potts, R. (1992). The narrated self: Young Children's construction of self in relation to others in conversational stories of personal experience. *Merrill-Palmer Quarterly, 38*(1), 45–67.
- Murphy, K. (2019). *You're not listening: what you're missing and why it matters* (1st ed.). Harvill Secker.
- Nolen-Hoeksema, S., Stice, E., Wade, E., & Bohon, C. (2007). Reciprocal relations between rumination and bulimic, substance abuse, and depressive symptoms in female adolescents. *Journal of Abnormal Psychology, 116*(1), 198–207. <https://doi.org/10.1037/0021-843X.116.1.198>
- O'Neill, D. K., Main, R. M., & Ziemski, R. A. (2009). I like Barney': Preschoolers' spontaneous conversational initiations with peers. *First Language, 29*(4), 401–425.
- Payton, J. W., Wardlaw, D. M., Graczyk, P. A., Bloodworth, M. R., Tompsett, C. J., & Weissberg, R. P. (2000). Social and emotional learning: A framework for promoting mental health and reducing risk behavior in children and youth. *Journal of School Health, 70*(5), 179–185. <https://doi.org/10.1111/j.1746-1561.2000.tb06468.x>
- Renner, B. (2006). Curiosity about people: The development of a social curiosity measure in adults. *Journal of Personality Assessment, 87*(3), 305–316.
- Rodrigue, J. R., Olson, K. R., & Markley, R. P. (1987). Induced mood and curiosity. *Cognitive Therapy and Research, 11*(1), 101–106. <https://doi.org/10.1007/bf01183135>
- Rogers, C. R., & Farson, R. E. (1987). *Active listening. Excerpt from communicating in business today*. DC Heath & Company.
- Rueger, S. Y., Malecki, C. K., & Demaray, M. K. (2010). Relationship between multiple sources of perceived social support and psychological and academic adjustment in early adolescence: Comparisons across gender. *Journal of Youth and Adolescence, 39*, 47–61.

- Singer, J. L., & Antrobus, J. S. (1963). A factor-analytic study of daydreaming and conceptually-related cognitive and personality variables. *Perceptual and Motor Skills, 17*(1), 187–209. <https://doi.org/10.2466/pms.1963.17.1.187>
- Taberner, K., & Siggins, K. T. (2015). *The power of curiosity: how to have real conversations that create collaboration, innovation and understanding*. Morgan James Publishing.
- von Hippel, P. T. (2020). How many imputations do you need? A two-stage calculation using a quadratic rule. *Sociological Methods & Research, 49*(3), 699–718.
- Way, N., & Chu. (2004). Intimacy, desire, and distrust in the friendships of adolescent boys. In N. Way (Ed.), *Adolescent boys: Exploring diverse cultures of boyhood* (pp. 167–196). New York University Press.
- Way, N. (2011). *Deep secrets : Boys' friendships and the crisis of connection*. Harvard University Press.
- Way, N. (2013). Boys' friendships during adolescence: Intimacy, desire, and loss. *Journal of Research on Adolescence, 23*(2), 201–213. <https://doi.org/10.1111/jora.12047>
- Way, N., Ali, A., Gilligan, C. & Noguera, P. (Eds.) (2018). *The crisis of connection: Roots, consequences, and solutions*. New York University Press.
- Weil, L. G., Fleming, S. M., Dumontheil, I., Kilford, E. J., Weil, R. S., Rees, G., Dolan, R. J., & Blakemore, S. J. (2013). The development of metacognitive ability in adolescence. *Consciousness and Cognition, 22*(1), 264–271.

Author Biographies

Jinjoo Han is a Senior Research Scientist of the Project for the Advancement of Our Common Humanity at New York University. Her research focuses on the role of proximal social processes and school-based intervention programs promoting positive development of children and youth, with a particular focus on social and emotional development and how listening with curiosity influences developmental trajectories.

Niobe Way is Professor of Developmental Psychology at New York University. Her work focuses on the intersections of culture, context, and human development, with a particular focus on social and emotional development and how cultural ideologies influence developmental trajectories.

Hirokazu Yoshikawa is the Courtney Sale Ross Professor of Globalization and Education at New York University. His work focuses on the effects of public policies, particularly those related to parental employment, poverty, and early childhood care and education, on children of diverse ethnic and immigrant backgrounds.

Crystal Clarke is a former Director of the Project for the Advancement of Our Common Humanity at New York University. Her research explores how racial/ethnic identity orchestrates perceptions young men hold of the police. She has a particular interest in understanding human connection.