





## Sexual Communication between Adolescent Partners: A Scoping Review and Directions for Future Research

Laura Widman, Anne J. Maheux, Elizabeth Craig, Reina Evans-Paulson & Sophia Choukas-Bradley

To cite this article: Laura Widman, Anne J. Maheux, Elizabeth Craig, Reina Evans-Paulson & Sophia Choukas-Bradley (2022) Sexual Communication between Adolescent Partners: A Scoping Review and Directions for Future Research, The Journal of Sex Research, 59:8, 984-999, DOI: [10.1080/00224499.2022.2099787](https://doi.org/10.1080/00224499.2022.2099787)

To link to this article: <https://doi.org/10.1080/00224499.2022.2099787>

 [View supplementary material](#) 



 Published online: 02 Aug 2022.

 [Submit your article to this journal](#) 

 Article views: 88

 [View related articles](#) 

 [View Crossmark data](#) 

 Citing articles: 1 [View citing articles](#) 



## Sexual Communication between Adolescent Partners: A Scoping Review and Directions for Future Research

Laura Widman <sup>a</sup>, Anne J. Maheux <sup>b</sup>, Elizabeth Craig <sup>d</sup>, Reina Evans-Paulson <sup>e</sup>, and Sophia Choukas-Bradley <sup>b,c</sup>

<sup>a</sup>Department of Psychology, North Carolina State University; <sup>b</sup>Department of Psychological and Brain Sciences, University of Delaware; <sup>c</sup>Department of Psychology, University of Pittsburgh; <sup>d</sup>Department of Communication, North Carolina State University; <sup>e</sup>Innovation Research and Training

### ABSTRACT

Sexual communication between adolescent partners is an important component of sexual health and wellbeing. Over 40 years of research on adolescent sexual communication has yielded rich information, yet there remain gaps in our understanding of the communication process. The purpose of this scoping review was to synthesize the body of research on adolescent sexual communication to identify how communication has been conceptualized, how researchers have measured communication, and what theoretical frameworks have been applied across the literature. We identified 198 assessments of sexual communication across 119 quantitative studies. This work included 127,489 adolescents ( $M_{\text{age}} = 15.97$ ) from 15 countries (81.5% U.S.-based). Most studies relied on self-reports (93.4%) and surveyed only one member of a couple (97.5%). The definition of sexual communication was highly varied across the literature: in half of assessments (52.0%) sexual communication was operationalized as a behavior—the verbal or nonverbal exchange of messages about sex—whereas the remaining half of assessments captured social-cognitive aspects of communication (e.g., communication self-efficacy, fear/anxiety). There was also a tendency for investigators to create their own idiosyncratic instruments: half of studies (48.9%) used instruments created by the research team with limited or no discussion of reliability/validity. Regarding the topic of communication, a third of assessments (33.8%) focused exclusively on condom communication and another quarter (24.0%) focused on other safer-sex issues (e.g., STDs, abstinence). Notably absent were studies focused on communication surrounding consent or sexual pleasure. Also absent was a guiding conceptual model or theory that could unify this body of work. Overall, results highlight gaps and inconsistencies in how partner sexual communication has been conceptualized, measured, and theorized about in previous work. We provide several recommendations for future theory-building efforts as well as rigorous, multimethod empirical investigations of adolescent sexual communication that would further our understanding of this important aspect of adolescent sexual wellbeing.

Sexual communication within romantic and sexual partnerships is a cornerstone of sexual health and sexual experiences across the lifespan. More frequent, comfortable, and/or assertive sexual communication is linked to several positive outcomes. For example, individuals who communicate about sexual topics with their partners report greater sexual satisfaction, sexual pleasure, commitment, and relationship satisfaction (MacNeil & Byers, 2009; Mark & Jozkowski, 2013; Montesti et al., 2011; Widman et al., 2006). Additionally, for both adolescents and adults, sexual communication is linked to safer sexual behavior, such as more frequent use of condoms and contraception (for reviews, see Gause et al., 2018; Noar et al., 2014; Widman).

Sexual communication is particularly critical for adolescents. During the adolescent period, biological, psychological, and social factors contribute to the initiation of dating and sexual relationships, the development of increasingly complex personal identities, and the burgeoning ability to apply behavioral control skills during states of physiological arousal (Blakemore & Mills, 2014; Dahl et al., 2018; Steinberg, 2005). These biological and psychological changes are occurring

during the same period when adolescents are becoming increasingly independent from parents and initiating sexual relationships for the first time. These new dyadic sexual relationships require forms of interpersonal sexual communication and negotiation that adolescents may have limited experience with. This includes, for example, obtaining sexual consent by reading verbal and non-verbal cues (Muehlenhard et al., 2016), negotiating safer sex activities such as delayed intercourse or condom use while also navigating societal gender roles and gendered sexual scripts (Ramiro-Sánchez et al., 2018; Vasilenko et al., 2015), and managing complex and sometimes competing individual and interpersonal needs and goals that occur in a romantic relationship (Braithwaite & Schrodt, 2022). The learning that takes place in these early relationships can impact sexual communication, sexual satisfaction, and sexual functioning for years to come (Fortenberry, 2014; Russell et al., 2012).

Communicating in the context of these new dyadic sexual relationships is difficult for many adolescents. Explicit, effective discussions about sex require skills in sexual assertiveness and negotiation that are not frequently modeled for adolescents;

media portrayals of sexuality rarely include mention of sexual responsibility, birth control, or consent (Jozkowski et al., 2019; Strasburger, 2012), and parents are often hesitant to talk openly with their children about sex (for review, see Flores & Barroso, 2017). Further, factors related to the dyadic relationship itself, such as power imbalances (Baxter & Asbury, 2015) and individual communicators' lack of efficacy in managing complex interactions (e.g., embarrassment, anxiety; Guzmán et al., 2003) may lead adolescents to communicate less. Based on these challenges, it is perhaps not surprising that as few as half of adolescents in dating or sexual relationships report that they have ever discussed important sexual issues with their partners (Brown et al., 2020; Fix et al., 2019; Saftner et al., 2019). For example, one study using data from the National Longitudinal Study of Adolescent to Adult Health found that only 53% of girls and 45% of boys had discussed contraception or sexually transmitted diseases (STDs) with their partner before having sex for the first time (Ryan et al., 2007). It is critical that we continue to better understand these communication processes in order to promote healthier patterns of sexual communication among adolescents.

### Need for a Review of the Sexual Communication Literature

It has been over 40 years since the first studies were conducted on sexual communication between adolescent partners (Schinke et al., 1980, 1981). These 40 years have produced a vast and varied literature in terms of the conceptualizations of communication that have been used, the ways in which communication has been measured, and the theories (or lack of theories) that have been used to guide empirical work. Thus, the aim of this review was to synthesize the quantitative work in this area – a key step toward better understanding adolescent sexual communication. Specifically, we conducted a scoping review, defined as a review to map the literature in a research area and identify the key concepts, gaps, and sources of evidence that can inform future research and practice (Pham et al., 2014). In this review we focus on the role of dyadic partnerships as the primary relational context for sexual communication, given that interpersonal communication requires at least one partner and the majority of adolescents have only one sexual partner at a time (Vasilenko & Lanza, 2014). We seek to pinpoint strengths as well as gaps in past research. We also aim to provide insights into the most impactful directions for future research.

### Varied Conceptualization

The first area we will focus on in this review is the conceptualizations of sexual communication that have been used across the literature. Like all forms of communication, sexual communication is now recognized as a multidimensional construct. Thus, it is not surprising that conceptualizations vary across studies, both in psychology and communication. Conceptualization may include the operational definition of communication; the topic of communication; whether communication is conceptualized as a transmissive process (i.e., one-way from sender to receiver) and/or a transactional

process (i.e., two-way, dialogue-based); the ultimate goal of communication; whether the form of communication is verbal and/or nonverbal; and the channel through which communication occurs. These components are briefly described below and defined in Table 1.

How is sexual communication operationally defined in the context of adolescent relationships? It appears that the notable default in the sexual communication literature is to simply refer to “sexual communication” without clearly defining this term – just as we intentionally did in the introductory section of this paper. Sexual communication is a multidimensional process that can be defined in many ways – it can include the behavioral act of communication itself, as well as many cognitive components surrounding the communication act. When communication is defined as a behavior, the focus is on verbal and non-verbal acts of sending and receiving communication messages between partners (e.g., Brown et al., 2020; Hicks et al., 2013). When it is defined as a cognitive process, the focus is on one's thoughts and feelings about sexual communication, such as an adolescent's perceived self-efficacy to communicate (e.g., Basen-Engquist et al., 1999; DiClemente et al., 2014), their comfort or fear communicating (e.g., Dearthoff et al., 2010; Seth et al., 2011), or their intentions to communicate in the future (e.g., Gallupe et al., 2009). It is important to note that feeling confident communicating or intending to communicate in the future are not the same as the behavioral act of communication itself. Many health behavior theories highlight the important connections, but also distinctions, between social-cognitive process (e.g., attitudes, self-efficacy) and health behavior (e.g., Bandura, 2004; Fishbein & Ajzen, 2010). The current review will identify how frequently quantitative studies of adolescent sexual communication have directly captured communication behavior versus the cognitions surrounding this behavior.

The specific topics that adolescents discuss with their partners is also an important aspect of the sexual communication process. Sexual communication can include discussions about a variety of sexual topics, such as sexual risk (e.g., STDs, pregnancy) or protection (e.g., condoms, contraception, abstinence), but also sexual pleasure, fantasies, desire, sexual history, boundaries and consent, sexual identity, and any other aspect of sexuality. The topics that are included across the literature have important implications for what is known about adolescent sexual communication. This scoping review will pinpoint the topics that have been assessed with the most and least frequency across quantitative studies and will offer insights into the areas of communication that could be more fully explored in the future.

The conceptualization of communication as a transmissive process and/or a transactional process is an additional aspect of adolescent sexual communication in need of review. The transmissive model (rooted in the cybernetic communication tradition; for review, see Craig, 1999) describes communication as an activity where information primarily flows in one direction from sender to receiver (Shannon & Weaver, 1949). Although it is rarely explicitly stated, most adolescent sexual communication studies appear to implicitly assume this transmissive, one-way process of message sending and receiving. Studies typically assess how one person verbally sends a message,

**Table 1.** Definitions and examples of the six aspects of communication conceptualization coded in this review.

Aspect of Conceptualization	Definition	Example Items
Operational Definitions	The way communication was defined as a behavior (i.e., direct act of communicating with a partner) versus a cognition (e.g., thoughts or emotions surrounding communication, such as self-efficacy, intentions, or fear)	<p><i>Behavior:</i> "Have you talked with your partner(s) about preventing pregnancy?" (Brown et al., 2020); "During the past 60 days, how many times have you and your boyfriend or sex partner(s) talked about how to use condoms?" (Crosby et al., 2013).</p> <p><i>Self-Efficacy:</i> "How likely is it that you could talk to your steady partner about using condoms?" (Gutiérrez et al., 2000); "I feel confident in my ability to suggest using condoms with a new partner" (Jones et al., 2016).</p> <p><i>Intentions:</i> "In future, if I have sex with anyone new I will ask them about their past sexual partners" (Abraham et al., 1992); "If you were to decide to have sex, how likely would you be to talk with a partner about pregnancy?" (Scull et al., 2018).</p> <p><i>Fear:</i> "I have been worried that if I talked about using condoms with my boyfriend or sex partner he would threaten to leave me" (Milhausen et al., 2007); "Have you ever been afraid to ask a partner to use a condom because he might physically hurt you?" (Silverman et al., 2011).</p> <p><i>Comfort:</i> "How comfortable or uncomfortable would you feel talking about condoms with a sex partner?" (Overby &amp; Kegeles, 1994); "How comfortable or uncomfortable would you feel talking about what feels good to you during sex?" (Deardorff et al., 2010).</p> <p><i>Attitudes:</i> "Before deciding to have sex, I believe teens should talk to their partner about pregnancy" (Scull et al., 2018).</p> <p><i>Norms:</i> "Before deciding to have sex, most of my friends believe teens should talk with their partner about pregnancy" (Scull et al., 2018).</p>
Communication Topics	Sexual topic that was the focus of communication	<p><i>Condoms Only:</i> "I feel confident in my ability to suggest using condoms with a new partner" (Jones et al., 2016); "How likely is it that you could talk to your steady partner about using condoms?" (Gutiérrez et al., 2000).</p> <p><i>Sexual Refusal/Abstinence Only:</i> "I can say no to someone who is pressuring me to have sex" (Scull et al., 2018); "If I did not want to have sex, I would be able to say no to a partner" (Harrison et al., 2012).</p> <p><i>HIV/STDs Only:</i> "Because of AIDS, have you ever talked with your boyfriend or girlfriend about AIDS before having sexual intercourse?" (DiClemente, 1991); "Participants were also asked whether they had ever talked with a partner about AIDS before having sexual intercourse" (Shrier et al., 1999).</p> <p><i>Contraception Only:</i> "Did you discuss contraception with a partner prior to intercourse?" (Rickert et al., 1989); "My partner and I never discuss contraception" (Widman et al., 2006).</p> <p><i>Pregnancy Only:</i> "Have you talked with your partner(s) about preventing pregnancy?" (Brown et al., 2020); "If you were to decide to have sex, how likely would you be to talk with a partner about pregnancy?" (Scull et al., 2018)</p> <p><i>Sexual History Only:</i> "In the future, if I have sex with anyone new, I will ask them about their past sexual partners" (Abraham et al., 1992); "Sexual communication was assessed by asking participants if they and their sexual partners had ever discussed each others' sexual histories" (Rickman et al., 1994).</p> <p><i>Sexual Pleasure:</i><sup>a</sup> "I tell my partner what I enjoy sexually" (Tschann &amp; Adler, 1997); "The last time you had sex did you and your partner talk about how to get sexual pleasure without intercourse?" (Donald et al., 1994).</p> <p><i>General Sexual Communication:</i> "During the past 6 months, how many times have you and your sex partner discussed: (1) how to prevent pregnancy; (2) how to use condoms; (3) how to prevent the AIDS virus; (4) how to prevent STDs; and (5) your partner's sex history" (Milhausen et al., 2007).</p>
Transactional Nature of Communication	Whether communication was conceptualized as 1) a transactional, two-way process (i.e., focused on communication goals, cognitions, or behaviors of both partners); or 2) a transmissive, one-way process (i.e., focused on communication of only one partner without explicit mention of feedback) or an unclear process	<p><i>Transactional Communication:</i> "What did your partner do/say when you asked to use a rubber?" (Magura et al., 1994); "I got upset with a partner for suggesting condom use" (Tschann et al., 2010); "I could say no if someone pressured me to have sex when I did not want to" (Lardier et al., 2019).</p> <p><i>Transmissive Communication:</i> "I tell my partners what I like sexually" (Willie et al., 2018); "I know how to say 'no' to sex" (Constantine et al., 2015).</p>
Goal of Communication	Goal or anticipated function of communication: 1) information sharing (i.e., aiming to provide information to a partner); 2) information seeking (i.e., aiming to get information from a partner); or 3) persuasion (i.e., aiming to change a partner's cognitions or behaviors)	<p><i>Information Sharing:</i> "If I were to have sex with someone, I'd tell my partner what I like" (Di Noia &amp; Schinke, 2008); "I would be able to tell my partner that I would like to use a condom" (Harrison et al., 2012).</p> <p><i>Information Seeking:</i> "You asked him about the number of sexual partners he had before he had intercourse with you" (Di Noia &amp; Schinke, 2008); "How hard is it for you to ask how many sex partners he has had?" (Klein &amp; Card, 2011).</p> <p><i>Persuasion:</i> "I can get my partner to use a condom even if he/she does not want to" (Borawski et al., 2009); "How hard is it for you to demand that he could use a condom?" (Crosby et al., 2013).</p> <p><i>Unclear Goal:</i><sup>b</sup> "Have you talked with your partner(s) about preventing pregnancy?" (Brown et al., 2020); "Have you and your boyfriend ever talked about whether or not to use condoms when you have sex?" (Overby &amp; Kegeles, 1994).</p>

(Continued)

Table 1. (Continued).

Aspect of Conceptualization	Definition	Example Items
Message Form	Whether messages are communicated through 1) nonverbal cues (e.g., touch, body language, eye contact, voice intonation, and physical closeness); or 2) verbal cues (e.g., words such as “talk,” “discuss,” and “tell”)	<i>Nonverbal:</i> “I wait for my partner to touch my breasts instead of letting my partner know that’s what I want” (Auslander et al., 2007); “If a friend or someone asks you to have sex and you don’t want to, how often do you walk away?” (Lederman et al., 2008). <i>Verbal:</i> “Did you ever talk with your current or recent steady partner about whether or not to have sex?” (Constantine et al., 2015); “If a guy you were thinking about having sex with doesn’t bring up the issues of using a condom, how likely would you be to ask him to use one?” (Overby & Kegeles, 1994).
Message Channel	Channel of sexual communication: 1) in-person (face-to-face) or 2) through technology-mediated tools (e.g., phone, computer) and platforms (e.g., texting, instant messaging)	<i>In Person:</i> “The last time you had sex did you and your partner talk about: (1) avoiding pregnancy? (2) avoiding HIV infection? (c) avoiding STD infections? (4) how to get sexual pleasure without intercourse? or (5) using a condom?” (Donald et al., 1994). <i>Technology-Mediated:</i> “Participants indicated if they had ever used private technology (i.e., ‘electronically interacting with someone in a way that is not visible to the public, such as texting, Snapchat, or private Facebook messaging’) to communicate with dating partners about 6 topics: using condoms, using other forms of birth control, STIs, HIV/AIDS, risk of pregnancy, and sexual limits” (Widman, Nesi, et al., 2014). <i>Unclear Channel:</i> “I feel confident in my ability to suggest using condoms with a partner” (Willie et al., 2018); “Did you ever talk with your current or recent steady partner about whether or not to have sex?” (Constantine et al., 2015).

<sup>a</sup>No scales focused exclusively on sexual pleasure communication. These examples about pleasure come from multi-item scales that were combined to form general sexual communication scores. We include them here for illustrative purposes.

<sup>b</sup>Goal of the interaction could not be determined by the way many items were phrased. For example, it is not clear if an adolescent who “talked with their partner” was attempting to share information, gain information, and/or persuade a partner in this conversation.

<sup>c</sup>Channel of communication could not be determined by the way many items were phrased. Unless an item specified that the communication occurred during a sexual act that necessitated in person contact (e.g., “during sex”), or if it specified that the communication took place via technology (e.g., “via text message”), it was not clear where the communication occurred. For example, an adolescent could “tell” their partner about their sexual history in person, on the phone, through text, etc.

such as “I want to use a condom,” to their partner. In the transactional model of communication (rooted in the socio-psychological communication tradition; for review, see Craig, 1999), the two-way, dialogue-based nature of communication is more explicit (Knapp & Daly, 2011; Miller & Steinberg, 1975). The transactional model proposes that communication is multidirectional, where communicators simultaneously influence each other and jointly create and exchange messages to cultivate shared meaning. Although both models are useful in certain contexts, the transactional model approach to adolescent sexual communication would suggest that communication is not simply the act of sending a message (e.g., “I want to use a condom”); rather, it is a nuanced and collaborative interaction where *both* adolescent partners are communicating simultaneously by sending *and* receiving messages. One person might send the message “I want to use a condom” while their partner is reacting with enthusiasm and agreement, whereas another person might send the same message only to be met with dissatisfaction or anger. The important distinctions between these two scenarios – and likely distinct sexual health outcomes – necessitates a closer look at how researchers have considered the role of transactional partner communication processes.

Additionally, when adolescent partners communicate about sexuality, they may have one or more goals in mind. The goals-plans-actions theory highlights how communication processes can serve different functions based on a person’s goals (Dillard, 2015). For example, an adolescent might have the goal to influence a communication partner by persuading them to use a condom, get an STD test, or wait on sexual activity. Another goal could be to share information with a partner, such as sharing a sexual preference or prior experience. A third goal could be to manage uncertainty by seeking information, such as asking about a partner’s sexual history or STD status. The extent

to which researchers have investigated persuasion, information sharing, and information seeking goals in adolescent sexual communication remains unknown.

Finally, when conceptualizing communication, the verbal and nonverbal nature of communication (i.e., message form) and the channel through which communication occurs must also be considered (Knapp & Daly, 2011). Communication can encompass both verbal and non-verbal exchanges and be sent through multiple channels, such as through in-person conversation or newer technology-mediated routes (e.g., phone, text, online messaging). Given some evidence that adolescents and young adults frequently communicate about sexuality in non-verbal ways (Blunt-Vinti et al., 2019; Righi et al., 2021; Santos-Iglesias & Byers, 2020), and the growing reliance on digital technologies for adolescent peer interaction and sexual communication (Smith & Anderson, 2018; Widman et al., 2021), these ways of communicating with sexual partners are important to understand.

### Varied Measurement

The way that sexual communication is measured shapes our understanding of this process. One measurement issue is the limited number of validated assessment tools to capture adolescent partner communication. Rigorously developed and validated scales are typically more psychometrically reliable (i.e., consistent across items and time) and valid (i.e., items represent the theoretical construct intended to be measured) than researcher-created questionnaires (Clark & Watson, 1995). Standardized measures are also typically more transparent and provide opportunities for replication and comparison across research teams. A review of prior measures can aid future researchers in rigorous development of new measures or in choosing a previously published tool instead of creating yet another new assessment.



A second measurement issue worth exploring is the use of self-report assessments in the adolescent sexual communication literature. Self-report measures are pervasive across the field of psychology, despite limitations to this methodology and calls for the use of multiple methods (Haefel & Howard, 2010). For example, behavioral observation assessments are used frequently in the literature on adult communication and adolescent romantic relational processes (Gottman & Notarius, 2000; Welsh & Sculman, 2008) and provide a complementary tool to self-report data collection. Currently, the full scope of how researchers are using behavioral or other assessments to measure sexual communication among adolescents is unclear. A review can shed light on the different ways that communication has been assessed and illuminate gaps in the field.

A final measurement question is the extent to which researchers have surveyed individuals versus couples to understand the dyadic process of communication. Relational processes are influenced by the couple's interpersonal dynamics (Cook & Kenney, 2005); thus, dyadic assessments are common in research on adult sexual communication (e.g., Kohut et al., 2018; Roels et al., 2021). Identifying all the published reports of adolescent sexual communication that have used dyadic data can allow future investigators to learn from these approaches – and perhaps adopt strategies to incorporate more dyadic analysis into their future work on adolescent sexual communication.

### Varied Theory

Theories are important in that they provide a framework for understanding, explaining, and predicting behavior and to challenge and extend existing knowledge (Swanson & Chermack, 2013). There is not currently a unifying theoretical framework to guide research on adolescent sexual communication. Many adolescent sexual health interventions are grounded in health behavior theories [e.g., reasoned action model (Fishbein & Ajzen, 2010); social cognitive theory (Bandura, 2004)]. These studies often incorporate sexual communication behavior, communication intentions, or communication self-efficacy as a component of the intervention and as part of the outcome assessments (DiClemente et al., 2009; Scull et al., 2018; Sieving et al., 2011; Widman et al., 2018), but it is often unclear where communication fits into the theoretical model. A review will allow us to identify all of the diverse theories that are guiding adolescent sexual communication research and to propose future directions for theory-building efforts.

### Purpose of This Review

The purpose of this scoping review was to synthesize the quantitative research on adolescent partner sexual communication. We will specifically focus on the conceptualizations, measurement, and theories used in the adolescent sexual communication literature. We will also examine the sociodemographic characteristics of each sample (e.g., gender, age, sexual orientation, race/ethnicity) to understand the adolescent populations that have received the most research attention regarding sexual communication practices to date. This

review will allow us to identify the components of sexual communication that have been commonly assessed – or missed – in prior research and serve as a guide for future empirical work in this area. We also hope this review can serve as the first step toward building a more comprehensive theory of adolescent sexual communication.

## Method

### Search Strategy

We conducted a comprehensive search of *Medline*, *PsycINFO*, *Communication Source*, and *CINHL* databases to extract relevant studies of adolescent partner sexual communication published through January 10, 2022. We used the following combination of key words, with asterisks used as “wild cards” to find any variations: (adolesc\* or teen\* or youth or “middle school” or “high school” or “secondary school”) and (“sexual communication” or “sexual discussion” or “sexual negotiation” or “sexual assertiveness” or “sex talk” or “sexual health communication” or “safe\* sex communication” or “condom negotiation” or “condom communication” or “communication about sex\*” or “sexual consent”) and (partner\* or boyfriend or girlfriend or “friends with benefits” or hookup). Additional studies of potential relevance were located by examining prior reviews and meta-analyses. We also examined the reference lists of all included articles to search for additional studies. This search produced an initial 2,033 scientific articles.

We did not specifically search for studies of sexting, defined as sending or receiving sexually explicit messages or images via digital media (Madigan et al., 2018; Mori et al., 2019). The majority of studies in this literature fail to specify if texts are being sent with romantic/sexual partners versus friends, strangers, or former partners (Klettke et al., 2014). Thus, we opted not to include this literature in the current review. Readers can find separate reviews of the literature on adolescent sexting behavior elsewhere (i.e., Madigan et al., 2018; Mori et al., 2019; Van Ouytsel et al., 2015).

### Selection Criteria

Studies were included if they were: 1) focused on middle-school and high-school age adolescents (defined as a mean participant age <19; no participant age >24; excluded exclusively college samples); 2) a quantitative study that included a measure of sexual communication with partner(s); and 3) published in an English language journal. Studies were excluded if they included duplicate data from the same participants using the same measures of sexual communication. In these instances, we selected the article with the most communication measures reported. No exclusion criteria were applied based on year of study or country of study. These selection criteria resulted in a final sample of 119 studies with 198 assessments of sexual communication between adolescent partners (see Figure S1 in Online Supplement material).

## Data Extraction

Three of the authors double coded all studies to extract the demographic and study characteristics (e.g., gender, age, sexual orientation, country). We also coded six aspects of communication conceptualization (operational definition, message topic, transactional nature of communication, communication goal, verbal/nonverbal nature of communication, message form, and channel). A definition and example of each aspect of conceptualization can be found in Table 1. Further, we coded for four aspects of communication measurement (i.e., whether the scale was previously published, number of items, self-report vs. behavioral assessment, and individual vs. dyadic data). Finally, we coded the theoretical models/frameworks that were used in each study. Discrepancies between coders were resolved through group discussion among all authors until we reached consensus.

## Results

### Sample and Study Characteristics

Table 2 provides a summary of the sample characteristics from studies included in this scoping review. A total of 127,489 participants (mean age = 15.97) were enrolled across 119 studies that assessed sexual communication among adolescent partners (see Online Supplement for complete list of studies). The earliest study was published in 1980 (Schinke et al., 1980). Ninety-seven studies (81.5%) were conducted in the United States. Studies were also conducted in 14 other countries (Australia, Belgium, Bolivia, Canada, China, Ecuador, Ghana, Haiti, Lao People's Democratic Republic, Mexico, Netherlands, South Africa, Uganda, and the United Kingdom).

Regarding participant demographics, many studies used mixed gender samples (63.0%) or focused exclusively on girls (31.9%). Only 5 studies focused exclusively on boys, and a single study focused on the communication patterns of transgender and gender-diverse youth (Brown et al., 2020). Notably absent were studies of sexual minority adolescents. Only 2 studies specifically examined the sexual communication patterns among sexual minority youth (Hart & Heimberg, 2005; Mustanski et al., 2015), whereas almost a third of studies focused exclusively on heterosexual adolescents and/or those engaging in other-gender sexual behavior. Over half of studies did not report the sexual identity of their sample. In sum, participants were relatively diverse across the 119 studies, although certain demographic groups (e.g., sexual and gender minority adolescents) and cultural contexts (e.g., outside of the U.S.) were underrepresented.

### Sexual Communication Conceptualization

Table 3 provides information about the conceptualization of sexual communication across the 198 unique assessments. Sexual communication was conceptualized in many ways. Direct communication behavior was assessed in just over half of assessments. The remaining scales captured social-cognitive aspects of sexual

communication, such as communication self-efficacy (29.8%), fear/anxiety (5.1%), and comfort/ease (4.0%). Regarding the message topic, 40.9% of scales tapped into general sexual communication topics, by either assessing multiple items that crossed topics (e.g., including items about condom communication and sexual history communication on the same scale) or using a single, general item (e.g., "communication about sex"; Wilson et al., 1994). Among studies that focused on a single communication topic, condom use communication was the most common topic assessed, with one third of scales focusing exclusively on condom communication, followed by assessments of sexual refusal/abstinence. No scales focused exclusively on adolescent communication about sexual pleasure, desire, or sexual consent.

Regarding the function of the communication messages being assessed (e.g., to seek information, share information, or persuade) – nearly half of communication assessments were unclear about the specific function. For example, an item such as, "Have you and your boyfriend ever talked about whether or not to use condoms when you have sex?" (Overby & Kegeles,

Table 2. Study and sample characteristics ( $n = 119$  studies).

	<i>n</i>	%
Gender		
Girls only	38	31.9%
Boys only	5	4.2%
Mixed gender sample	75	63.0%
Transgender and gender-diverse	1	0.8%
Age		
Mean less than 14 years old	9	7.6%
Mean 14-16 years old	56	47.1%
Mean 17-18 years old	31	26.1%
Not reported	23	19.3%
Sexually Active		
Less than 50% sexually active	34	28.6%
50-99% sexually active	17	14.3%
100% sexually active	56	47.1%
Not reported	12	10.1%
Sexual Orientation		
Heterosexual only <sup>a</sup>	38	31.9%
LGB only	2	1.7%
Mixed sexual orientation	17	14.3%
Not reported	63	52.9%
Race/Ethnicity		
>75% White	16	13.4%
>75% Black	24	20.2%
>75% Latinx	5	4.2%
Mix of races/ethnicities	56	47.1%
Not reported/other	18	15.1%
Country		
U.S.	97	81.5%
Non-U.S.	22	18.4%
Recruitment Location		
School	43	36.1%
Clinic	28	23.5%
Community	17	14.3%
Incarcerated	12	10.1%
Mixed/Other	19	20.0%

<sup>a</sup>"Heterosexual only" was either based on self-reported sexual identity of participants or coded because the researchers assumed or required opposite-sex partnership based on their measurement (e.g., asked only about opposite-sex partners; required females to have a male partner to be enrolled in the study).

1994) leaves it unclear if the purpose of the communication was to seek information about where a partner stands on condom use, share information about one's own preferences about condom use, or persuade a partner to use a condom. Of those measures that specified the function of communication, persuasion was the most common (39.1%). An exclusive focus on information sharing or information seeking were each captured in less than 5% of assessments.

Finally, less than a quarter of assessments included the presence of any transactional communication indicators (e.g., "I got upset with a partner for suggesting condom use"; Tschann et al., 2010). Less than 10% included an assessment of any non-verbal behavior (e.g., "If a friend or someone asks you to have sex and you don't want to, how often do you walk away?"; Lederman et al., 2008). Only a single study specifically assessed sexual communication through technology-mediated channels, such as text and social media messaging (Widman, Nesi, et al., 2014).

### Sexual Communication Measurement

Table 4 provides information about the measurement of sexual communication across studies. Measurement characteristics across the 119 studies suggest an overreliance on some methods relative to others. The vast majority of sexual communication assessments relied on self-reports (92.9%), with only 14 studies utilizing behavioral measures (e.g., role-play simulations; responses to written or audio vignettes). A full quarter of scales used a single item to assess sexual communication, and just under half of the communication assessments were created by the study team. Finally, nearly all assessments (97.5%) captured communication data from only one individual, rather than from both members of a dyad. Of the three studies that collected data from adolescent couples, one used a behavioral assessment to observe adolescent couples interacting (Schmid et al., 2015) and two studies collected self-report data from both partners in a dyad (Widman et al., 2006; Willie et al., 2018).

### Theory Guiding Sexual Communication Research

Across the 119 studies included in this review, the majority lacked a coherent theoretical framing. Specifically, 39.5% did not include any mention of a theory or conceptual framework guiding their research questions or analyses. In an additional 17.6% of studies, theory was mentioned but it was unclear how communication fit within the theory. In less than half of studies (42.0%) was sexual communication directly tied to a theory or conceptual model. The theory that was referenced the most times (10.1%) was social cognitive theory, with sexual communication generally included within this theoretical framework as a predictor/antecedent to other sexual behavior, such as condom use (Haley et al., 2013; Shrier et al., 1999; Sieving et al., 2011). A variety of other theories were mentioned across the papers we reviewed, such as sexual script theory (van de Bongardt & de Graaf, 2020; Widman et al., 2006); social learning theory (e.g., Lederman et al., 2008; St. Lawrence et al., 1995); minority stress theory (Brown et al., 2020; Norris et al., 2019); the theory of reasoned action and

**Table 3.** Conceptualization of sexual communication ( $n = 198$  assessments).

	<i>n</i>	%
<b>Operational Definition of Communication</b>		
Behavior	103	52.0%
Self-efficacy	59	29.8%
Intentions	11	5.6%
Fear/anxiety	10	5.1%
Comfort/ease	8	4.0%
Attitudes	1	0.5%
Norms	1	0.5%
Other/combination	5	2.5%
<b>Message Topic</b>		
Condom communication only	67	33.8%
Sexual refusal/abstinence communication only	27	13.6%
STD/HIV communication only	8	4.0%
Contraceptive communication only <sup>a</sup>	6	3.0%
Pregnancy communication only	4	2.0%
Sexual history communication only	3	1.5%
Sexual pleasure/desire communication only <sup>b</sup>	0	0%
Sexual consent communication only <sup>c</sup>	0	0%
General sexual communication	81	40.9%
<b>Transactional Nature of Communication<sup>d</sup></b>		
Presence of transactional communication indicators	39	21.2%
Absence of transactional communication indicators	145	78.8%
<b>Communication Goal<sup>d</sup></b>		
Information seeking	6	3.3%
Information sharing	8	4.3%
Persuasion	72	39.1%
Combination of seeking, sharing, persuasion, and/or unclear	12	6.5%
Unclear message function	86	46.7%
<b>Message Form<sup>d</sup></b>		
Presence of non-verbal behaviors	15	8.2%
Absence of non-verbal behaviors	169	91.8%
<b>Message Channel<sup>d</sup></b>		
In-person communication	25	13.6%
Technology-mediated communication	1	0.5%
Ambiguous message channel	156	84.8%

<sup>a</sup>Three scales asked about condoms and contraception and were included with contraception only measures.

<sup>b</sup>Seven scales included at least one item about sexual pleasure or desire; these items were combined with others on the scale and not analyzed separately. Thus, they were coded with the "general sexual communication" code.

<sup>c</sup>We could not locate a single adolescent sexual communication scale that included the word "consent."

<sup>d</sup>Among  $n = 184$  self-report assessments

planned behavior (e.g., Bryan et al., 2002; Scull et al., 2018); the theory of gender and power (e.g., Crosby et al., 2003); the message interpretation process model (Scull et al., 2014); and the extended parallel process model (Roberto et al., 2007).

### Discussion and Recommendations

This scoping review of the quantitative literature on adolescent sexual communication uncovered 198 assessments of sexual communication across 119 quantitative studies. This work spanned over 40 years and included over 125,000 adolescents from 15 countries. We focused on three broad issues in this literature related to sexual



**Table 4.** Sexual communication measurement characteristics ( $n = 198$  assessments).

	<i>n</i>	%
Data Collection Procedure		
Self-report assessment	184	92.9%
Behavioral measure	14	7.1%
Individual vs Dyadic Data Collection <sup>a</sup>		
Data collected from one individual	116	97.5%
Data collected from both members of couple	3	2.5%
Number of Items on Scale <sup>b</sup>		
Single item	46	25.0%
2–5 items	76	41.3%
6 or more items	61	32.2%
Not reported	3	1.6%
Used Established or Adapted Scale <sup>b</sup>		
Yes	94	51.1%
No	90	48.9%

<sup>a</sup>Among  $n = 119$  studies.

<sup>b</sup>Among  $n = 184$  self-report assessments.

communication conceptualization, measurement, and theory that offer numerous paths for future research. Each of these is expanded upon below, along with some broader strengths and limitations of this literature.

### Sexual Communication Conceptualization

**Operational Definitions.** One of the clearest findings from this review is the highly varied definitions of sexual communication that exist across the literature. About half the time, adolescent sexual communication has been operationalized and assessed as a behavior – that is, the verbal or nonverbal exchange of messages about sex – whereas the remaining half of assessments captured social-cognitive aspects of sexual communication, such as communication self-efficacy, fear, or comfort, that are not directly communication behavior in and of themselves. The way that communication is conceptualized can have important implications for our understanding of how communication impacts sexual outcomes. For example, effect sizes between sexual communication and condom use are larger when communication behavior is assessed compared to communication fear, comfort, or intentions (for meta-analysis, see Widman, Noar et al., 2014). While each of these communication-related constructs may be important to an overall understanding of the communication process, sometimes the operationalization of the construct was not clear until the method section of a paper. Authors frequently referred to “sexual communication” throughout the introductions to their papers, and it was only in the method section that it became clear that it was, for example, sexual communication intentions or comfort that were being assessed. Sexual experience in and of itself can be defined as a form of sexual communication, with messages communicated verbally and/or nonverbally about boundaries, pleasure, enjoyment, safety, and consent occurring as the sexual interaction unfolds. Going forward, we encourage authors to be mindful of the specific construct under consideration and include operational definitions at the outset of their work.

**Communication Topics.** A second aspect of conceptualization we uncovered in this review was the rather limited scope of the sexual communication topics being assessed. Throughout the past four decades of research on adolescent sexual communication, there has been a heavy emphasis on sexual risk-reduction. Over one third of all assessments focused exclusively on condom communication, and an additional quarter of assessments focused exclusively on other safer-sex issues, such as STDs, pregnancy, and abstinence. Few studies considered equally important and highly related aspects of sexuality, such as pleasure, desire, and consent (for examples of studies that included at least one item about sexual pleasure or desire, see van de Bongardt & de Graaf, 2020; Widman et al., 2006). Further, there is a paucity of research on adolescents’ discussions with partners about topics such as one’s sexual or gender identity, media portrayals of sex, or peers’ sexual activity. These sexuality topics, and likely how adolescents communicate about them with partners, are key components of adolescents’ sexual lives, with implications for their physical health as well as their identity development, interpersonal skills, and positive sexual experiences. Prior work highlights the normative and even beneficial aspects of adolescent sexuality, noting that research focusing solely on risk reduction can miss how sexuality has the potential to promote adolescents’ well-being (Harden, 2014; Russell, 2005). An important direction for future research will be to broaden the conceptualization of sexual communication to include these additional topics.

**Transmissive and Transactional Processes.** Adolescents are simultaneously senders and receivers of messages during sexual communication, a transactional process that requires attention, emotion regulation, skill, and coordination among both partners (Spitzberg & Cupach, 2011). The adolescent sexual communication literature has rarely assessed this two-way, dialogue-based process. In the present review, most studies assessed communication as a one-way process. Some examples of typical, one-way communication items were, “I know how to say ‘no’ to sex,” (Constantine et al., 2015) and “I tell my partners what I like sexually” (Willie et al., 2018). These assessments fail to capture how the partner responded or whether partners understood each other. Less than one quarter of assessments included some indication of the back-and-forth nature of communication. Some of these assessed the participants’ responses to a partner (e.g., “I could say no if someone pressured me to have sex when I did not want to”; Lardier et al., 2019), whereas others referenced the partner’s response to the participant (e.g., “What did your partner do/say when you asked to use a rubber?”; Magura et al., 1994). Notably, only one measure directly assessed listening behavior: “My partner really listened when we talked about these things” (Donenberg et al., 2018). None of the assessments focused on sexual communication as a conversation. Although it is often easier to quantify and measure the sending of simple one-way messages, much is lost when we stop our measurements at this point. Moving forward, measures that explicitly address contextually bound, bidirectional interactions could help researchers better understand the transactional communication process. Behavioral role-plays or

observational assessments inherently capture transactional communication and can be a fruitful area for future work (Blumberg et al., 1997; Medina et al., 2016). Although observational methods have other limitations, such as imperfect external validity and high resource requirements for in-lab studies, these tools can complement survey research by capturing adolescents' real-time communication skill in response to a partner's feedback or pressure. Dyadic data can also address these questions from discourse and relationship-centric theoretical frameworks (Braithwaite & Schrodtt, 2022), where both partners' messages, feedback, and sense-making are included in data collection and analysis.

**Communication Goals.** Partners may have a number of goals that can influence the way a communication message is crafted and delivered (Berger & Palomares, 2011). Messages can be used to seek and manage information (Afifi & Robbins, 2015; Petronio, 2013), to share information in order to build or maintain relationships (Stafford, 2015), and/or to persuade or influence partners (Dillard, 2015). In our review of the literature, each of these three message functions emerged: information seeking (e.g., "You asked him about the number of sexual partners he had before he had intercourse with you"; Di Noia & Schinke, 2008), information sharing (e.g., "I can tell my partner my feelings about what I want/do not want to do sexually"; Anderson et al., 1997), and persuasion (e.g., "How hard is it for you to demand that he could use a condom?"; Crosby et al., 2013). Most measures with a single clear message function were about persuasion, possibly reflecting the literature's emphasis on safe sex via one-way assertion of preferences and negotiation. Less than 5% of studies focused exclusively on information sharing or information seeking. Further, nearly half of all measures were unclear in the message function – that is, they did not clearly delineate a goal or purpose of the communication assessed. For example, items such as "How comfortable or uncomfortable would you feel talking about condoms with a sex partner?" (Overby & Kegeles, 1994) do not clarify if the participant is asking about a partner's preferences regarding condoms, sharing their own preferences about using condoms, or trying to persuade a partner to use *or not use* a condom. This ambiguity makes inferences about adolescents' responses to such items challenging. Future research could more clearly assess message function in adolescent sexual communication and identify when adolescents have competing goals, what priorities are assessed, and what behaviors are enacted.

**Message Form.** Messages can be communicated through verbal and/or nonverbal forms. Nonverbal communication has rarely been assessed in the adolescent sexual communication literature: only a handful of the measures we located included an indication of nonverbal behavior. Among the measures that did capture nonverbal communication, half were capturing *fear* of a partner's reaction ("... fear a partner would hit, push, or kick you;" Milhausen et al., 2007), rather than the partner's reaction itself. Nonverbal behavior is an extremely important and common way that sexual matters are communicated – through acts such as touch, body language, eye contact, voice intonation, and physical closeness or distance

(Vannier & O'Sullivan, 2011). These aspects of communication are not easily captured on self-report surveys, and yet they form the basis of communication and *miscommunication* within many sexual encounters (Vannier & O'Sullivan, 2011). There is a pressing need for additional research on how adolescents learn and employ nonverbal sexual communication. Some work on nonverbal communication has been conducted on sexual consent communication among young adults (see the Nonverbal Signals of Interest subscale on the Consent to Sex scale by Jozkowski & Peterson, 2014), though no studies have used these measures with adolescents. Beyond sexual consent, additional nonverbal sexual communication scales could be developed to better understand adolescent communication processes across a range of topics (e.g., creating a nonverbal condom negotiation scale for adolescents). Research would also benefit from additional observational studies of adolescent couples engaging in discussions about sexuality, coded for nonverbal processes. While such observational methodology is relatively common among adult couples (e.g., Bois et al., 2016; Rehman et al., 2017; Roels et al., 2021), we only found one observational study of adolescent couple sexual communication (Schmid et al., 2015).

**Message Channel.** Another aspect of communication conceptualization is the message channel through which one communicates: in person versus through a technology-mediated channel. More than two thirds of sexual communication assessments do not specify the channel of communication. Especially with the proliferation of new modes of communication through technology (e.g., texting, video calling, online messaging), we cannot know exactly which channel adolescents are using to communicate if an item simply asks whether they "discussed" or "talked about" a certain topic with their partner. This phrasing may capture forms of communication that occurred both in-person and through technology. Adolescents may underreport communication that occurred through digital channels if they assume researchers' questions about "talking" with a partner refer only to in-person communication. The only study to directly examine technology-based sexual communication among adolescents found that rates of consistent condom use were over three times higher among adolescents who used technology to discuss condoms and birth control with their partner compared to those who did not discuss these topics (Widman, Nesi, et al., 2014). Being more intentional about asking exactly *when, how, and through which channels* adolescents talked with sexual partners will likely lead to more precise estimates of the impact of such communication on sexual and relationship functioning. Researchers could also better integrate studies on message channel and nonverbal communication. For example, some technology-mediated spaces have reduced nonverbal cues (e.g., eye contact, tone, physical proximity; Nesi et al., 2018), so the chances for ambiguous messages and misinterpretation of intent could be heightened. Future work can elucidate how adolescents cultivate messages about sex while using technology-mediated spaces.

## Sexual Communication Measurement

Beyond the conceptual issues highlighted above, this review uncovered several important aspects of communication measurement that require attention and offer many exciting directions for future inquiry. Notably, there was a heavy reliance on just one type of communication assessment: self-report instruments. This makes sense from a practical standpoint: self-report studies are often quicker, easier, and cheaper to conduct than behavioral studies, especially behavioral studies that involve lab-based assessments and recording equipment. Despite these benefits, self-reports may be limited by responding biases (e.g., socially desirable responding; misremembering; extreme responding; Paulhus & Vazire, 2007). Behavioral studies can offer a complementary approach to paint a fuller picture of adolescents' sexual communication processes – especially their communication skills that may be difficult to accurately report (e.g., nonverbal communication, listening skills). In prior work, behavioral assessments have included role-play simulations with research confederates (Blumberg et al., 1997; Gilchrist & Schinke, 1983; Hovell et al., 2001; Medina et al., 2016; Schinke et al., 1981; Schinke et al., 1980; St. Lawrence et al., 1995); responses to audio-recorded or written vignettes (Gutiérrez et al., 2000; Kamke et al., 2020; Kipke et al., 1993; Morrison et al., 2000; Widman et al., 2018); and one study that involved a lab-based observation of couples directly communicating about sex (Schmid et al., 2015). These behavioral measures may come with their own limitations, such as embarrassment or limited realism with role-plays and vignettes. If participants feel pressure to perform in socially desirable ways, these methods also may capture adolescents' communication skill but be ill-equipped to determine adolescents' actual desire or intention to engage in communication with an actual partner. When used in tandem with self-reports, behavioral assessments may help researchers obtain a fuller picture of the sexual communication process and even better understand the validity of self-reports, such as if adolescents' self-reported communication self-efficacy or assertiveness maps onto their effective communication when discussing sex with another person. For a complete review and discussion of the behavioral measures used among adolescents, see Maheux et al. (2022).

Another key aspect of measurement that surfaced was the heavy tendency for investigators to create their own idiosyncratic instruments. Although we identified a few validated assessment tools in this area, including the Condom Use Self-Efficacy Scale (Brafford & Beck, 1991), the Sexual Risk Behavior Beliefs and Self-Efficacy Scales (Basen-Engquist et al., 1999), and the Partner Communication Scale (Milhausen et al., 2007), these were not used with great frequency. Instead, half of studies used assessments that were created by the research team for their own project. There was limited reliability or validity information presented for most of these assessments. Instead, many of these assessments relied on researchers' intuitions about face validity, which can be subject to bias (Carpenter, 2018; Wiederman, 2012). Some scales included vague wording that could be open to interpretation, thereby introducing error into the measurement process. For example, a researcher might intend for an item such as "I could ask a partner to use a condom" (Shrier et al., 1999) to capture

a message goal, such as the use of communication to persuade a partner to use a condom. This item could instead be capturing adolescents' self-efficacy (i.e., an adolescent agreeing that yes, they *could* ask about condoms, even if they have no intention to do so), in which case the item would not capture adolescents' use of condom persuasion, as intended. Moreover, a full quarter of studies used single items to assess communication, which limits content and predictive validity (Diamantopoulos et al., 2012). An exciting direction for research on adolescent sexual communication will be to develop and validate additional psychometrically-sound assessment tools that are clear in their conceptualization of sexual communication and capture additional, distinct components of the sexual communication process. Because so many measures of adolescent sexual communication are included as part of larger studies (e.g., as one component of a broader sexual health intervention evaluation), it may be preferable to keep new assessments relatively brief. Scale developers could create multidimensional scales with shorter subscales that can be used for specific evaluation purposes.

A final aspect of measurement that surfaced in this review was the reliance on reports of sexual communication from only one member of the adolescent couple. Sexual communication exists in the context of a dyad – i.e., two people (and in some situations, more than two people) who are negotiating sexual situations to create shared understanding. Despite the dyadic nature of communication, most measures have not directly assessed the role of the partner. Only about a quarter of sexual communication measures included in this review captured any transactional processes (e.g., partner responses, listening), and only three studies included data from both members of a dyad (Schmid et al., 2015; Widman et al., 2006; Willie et al., 2018). This finding highlights the significant need to link theory with measurement in sexual communication research. Conceptualizing important questions about the nature of the relationship, message construction, and transactional communication processes can follow from interactional communication theories. Testing these theories will then necessitate the gathering of data from both members of a couple and allow for a deeper examination of the dyadic context. Collecting data from adolescent couples can be challenging. For example, researchers must schedule research times that work for both members of the couple, deal with the transitory nature of adolescent relationships (e.g., couples may break up before making it to their research appointment), attend to ethical issues (e.g., getting parental consent and/or assent from both members of the couple), as well as find funding for research that could potentially be politically charged and not seen as valuable (e.g., "You want teens to talk about sex and you want to record them doing it?!"). Despite the challenges of working with adolescents, the payoffs for deepening our understanding of this vital aspect of adolescent sexual health and wellbeing should not be overlooked.

## Sexual Communication Theory

With regard to sexual communication theory, the clearest takeaway from this review was the lack of a guiding theoretical framework across the literature. Such a guiding framework



could allow researchers to understand, explain, and/or predict sexual communication more fully. A guiding theoretical framework also can encourage coordination across fields and research teams, facilitating a more systematic approach to understanding these processes and ideal avenues for intervention. Finally, a guiding framework can help organize our understanding of the different components of sexual communication and how they relate to health outcomes. In this scoping review, we found nearly half of studies did not reference any theory at all. In other studies, theory was mentioned but it was unclear how communication fit within that theory. Among the remaining studies, no one theory was consistently used, and we did not locate a single study that specifically referred to contemporary communication theory. There are many possible contemporary communication theories with roots in social psychology that could be applied by interdisciplinary research teams to frame future studies. Though it is outside of the scope of the current paper to provide a comprehensive review of theories not yet considered in the adolescent sexual communication literature, there are many interpersonal communication theories that could be considered for future work. These include message production theories (e.g., Goals-Plans-Action Theory of Message Production, Planning Theory of Communication), uncertainty management theories (e.g., Problematic Integration Theory, Uncertainty Management Theory), interaction centered theories (e.g., Communication Theory of Identity, Expectancy Violations Theory, Relational Dialectics Theory), and relationship-centered theories (e.g., Affection Exchange Theory, Communication Privacy Management Theory) (for a discussion of all of these, see Berger, 2005).

Further, within the field of communication, there are seven broad traditions that characterize the ways of defining communication and the problems associated with communication (i.e., rhetorical, semiotic, phenomenological, sociocultural, critical, cybernetic, and sociopsychological; for comprehensive review, see Craig, 1999). The focus in this review has been on two of these traditions: a) the transmissive communication approach, which comes from the cybernetic tradition where communication is theorized as informational processing; and b) the transactional communication approach, which comes from the sociopsychological tradition where communication is theorized as expressive, interactional, and persuasive (Craig, 1999). Future scholars may wish to explore the clusters of theories that fall within the remaining five traditions that we have not captured in the current review. For example, a scholar employing a critical tradition might focus on how dominant ideologies surrounding gender roles and sexual identity can constrain and/or liberate sexual communication among adolescents. Or, among rhetorical traditions, a scholar might use theories that allow them to see how public and political discourses are integrated into personal discourses among adolescents. In other words, the study of sexual communication could be extended by a solid foundation in both traditional social science theories represented in psychology, as well as the humanistic and social science theories represented in other areas of communication research.

## Limitations and Additional Directions

There are several potential limitations with the current review that should be considered. First, the research on adolescent sexual communication has been limited by rather narrow sampling. The majority of studies have been conducted in the U.S. or other Western countries, leaving large gaps in our understanding of sexual communication among adolescents in other parts of the world. Further, one third of studies focused exclusively on adolescents who identified as heterosexual and/or engaged in other-sex behavior. Most of these studies were focused on experiences of condom use during penile-vaginal intercourse, which necessitated samples of adolescents having vaginal sex. Adolescent sexual repertoires are highly varied; adolescents having vaginal sex are often also engaging in other forms of sexual activity, and many adolescents are not having vaginal sex at all. Thus, a large population of adolescents with sexual and romantic experiences worthy of exploration are missed when sex is defined narrowly. Additionally, only five studies specifically focused on adolescent boys and only one on gender minority youth. More research is needed on the patterns and processes of sexual communication among more diverse samples of youth. Furthermore, although we excluded college-only samples and those with any participant over 24 or a mean age of 19 or greater, it is important to note that some of the studies included a subset of participants aged 19–24. Key developmental differences characterize the period of emerging adulthood (roughly ages 18–24), such as greater intimacy in many romantic and sexual relationships (Halpern & Kaestle, 2014). It is unlikely that our overall pattern of results was impacted substantially by the inclusion of these participants since our focus was on aspects of conceptualization and measurement; however, a closer examination of the similarities and differences in sexual communication patterns between adolescents and emerging adults is a valuable area for future scholarship.

Another broad limitation in the sexual communication literature involves the use of investigator-created measures. These measures are plentiful and many studies do not provide all items verbatim, instead providing only one example item or a broad summary of items. Because of this, we may have missed aspects of communication that were captured in an assessment, but could not be coded for the review. This lack of complete reporting, which was likely necessary in older publications based on journal page limits, makes it difficult to replicate research results and fully understand which components of the communication process were captured in any given study. The lack of complete reporting could also, at least in part, explain why there have been so many investigator-created measures for each new study, since gaining access to full scales from previously published work has been difficult. With the push toward open science, we encourage sexual communication researchers to utilize the online supplemental materials allowed by many journals and/or the open science framework ([osf.io](https://osf.io)) to post their complete measures.

Additionally, although we aimed to be comprehensive in our literature search, we may have missed articles. Across the literature, we found it was common for sexual communication to be included with a host of psychosocial predictors or



outcome variables. In cases where sexual communication was not the primary focus of investigation, our search terms may have missed studies. Indeed, we found a number of studies through reference lists or prior reviews that had not been identified in our initial search. An important avenue for future work is to clearly distinguish sexual communication as an interpersonal process related to but distinct from other sexual health behaviors.

A final aspect of communication we did not directly address in this review involves the timing of sexual discussions in relation to a potential sexual event. Communication about any given topic can be a single event or an ongoing dialogue. It can happen before, during, and/or after sexual interactions. Going forward, we recommend that researchers are specific about *when* certain sexual conversations have occurred, as this may lead to better prediction about how communication impacts sexual decision making. As new assessment tools are created, the timing of sexual communication can be integrated into the question prompts. Another promising direction would be to use daily diary assessments or other intensive longitudinal designs to ascertain the temporal processes of sexual communication in adolescent relationships.

## Conclusion

The past 40 years of research has laid a solid foundation for understanding adolescent sexual communication, particularly when it comes to how adolescents share information and negotiate around condom use. Communication is a complicated and dynamic process, and too seldom has the adolescent sexual communication literature fully captured this. We need more comprehensive, psychometrically-sound measurement of this dynamic process. We need better clarity in the operational definitions of communication being assessed in each study. We need more observational studies of adolescent couples and reports from both members of couples. We need extended communication measures that ask about communication from one partner *in the context* of communication from the other partner. We need clarity in the channels of communication being used. We need additional theory-building and theory-sharing efforts among disciplines to provide better theoretical grounding for studies going forward. We hope this review will serve as a catalyst for additional research in each of these important areas.

We also understand that building up a more comprehensive understanding of adolescent sexual communication will take a collective effort. No one study can answer all questions. Research priorities must be assigned in each case. With so many potential gaps to fill, it may not be entirely clear which aspect(s) of communication one should address in any given study and which aspects to inevitably ignore. The answer may come down to the expected effect size between communication and other variables of interest. For some outcomes, recruiting dyads and focusing on the transactional nature of communication may prove most fruitful. In other circumstances, it may be valuable to tease out the unique effects of each topic of communication or each channel of communication on a given outcome. With greater clarity and focus on each aspect of

communication, it will be possible to arrive at stronger conclusions about which aspects are most important to adolescent sexual and relationship functioning.

Finally, we are encouraged to see a growing emphasis on enhancing adolescents' sexual communication skills in many recently developed sexual health programs (e.g., Medina et al., 2016; Mustanski et al., 2015; Widman et al., 2020). Communication is an important skill across the life course. In adult relationships, sexual communication can lead to greater sexual satisfaction, sexual pleasure, and overall relationship satisfaction (Mark & Jozkowski, 2013; Montesti et al., 2011). We are not born as competent sexual communicators; these are skills that need to be learned and honed across time and relationships. There are many unanswered questions regarding the best ways to teach and reinforce these skills. We are optimistic that the next few decades of research on adolescent sexual communication will bring us closer to answering these important questions.

## Disclosure Statement

No potential conflict of interest was reported by the authors.

## Funding

This material is based upon work supported by the National Science Foundation Graduate Research Fellowship under Grant No. 1940700 awarded to Anne J. Maheux. Any opinion, findings, and conclusions or recommendations expressed in this material are those of the authors and do not necessarily reflect the views of the National Science Foundation.

## ORCID

Laura Widman  <http://orcid.org/0000-0001-8117-5467>  
 Anne J. Maheux  <http://orcid.org/0000-0003-1308-5798>  
 Elizabeth Craig  <http://orcid.org/0000-0002-0305-7972>  
 Reina Evans-Paulson  <http://orcid.org/0000-0001-7397-6969>  
 Sophia Choukas-Bradley  <http://orcid.org/0000-0002-9973-8747>

## References

- Abraham, C., Sheeran, P., Spears, R., & Abrams, D. (1992). Health beliefs and promotion of HIV-preventive intentions among teenagers: A Scottish perspective. *Health Psychology, 11*(6), 363–370. <https://doi.org/10.1037/0278-6133.11.6.363>
- Affifi, W. A., & Robbins, S. (2015). Theory of motivated information management: Struggles with uncertainty and its outcomes. In D. Braithwaite & P. Schrodt (Eds.), *Engaging theories in interpersonal communication: Multiple perspectives* (2nd ed., pp. 143–156). Sage.
- Anderson, V., Reis, J., & Stephens, Y. (1997). Male and female adolescents' perceived interpersonal communication skills according to history of sexual coercion. *Adolescence, 32*(126), 419–427. <https://www.proquest.com/docview/195938308?pq-origsite=gscholar&fromopenview=true>
- Auslander, B. A., Perfect, M. M., Succop, P. A., & Rosenthal, S. L. (2007). Perceptions of sexual assertiveness among adolescent girls: Initiation, refusal, and use of protective behaviors. *Journal of Pediatric and Adolescent Gynecology, 20*(3), 157–162. <https://doi.org/10.1016/j.jpag.2007.03.093>
- Bandura, A. (2004). Health promotion by social cognitive means. *Health Education and Behavior, 31*(2), 143–164. <https://doi.org/10.1177/1090198104263660>

- Basen-Engquist, K., Mässe, L. C., Coyle, K., Kirby, D., Parcel, G. S., Banspach, S., & Nodora, J. (1999). Validity of scales measuring the psychosocial determinants of HIV/STD-related risk behavior in adolescents. *Health Education Research, 14*(1), 25–38. <https://doi.org/10.1093/her/14.1.25>
- Baxter, L. A., & Asbury, B. (2015). Critical approaches to interpersonal communication; Charting a future. In D. O. Braithwaite & P. Schrodt (Eds.), *Engaging theories in interpersonal communication: Multiple perspectives* (2nd ed., pp. 189–202). Sage.
- Berger, C. R. (2005). Interpersonal communication: Theoretical perspectives, future prospects. *Journal of Communication, 55*(3), 415–447. <https://doi.org/10.1111/j.1460-2466.2005.tb02680.x>
- Berger, C. R., & Palomares, N. (2011). Knowledge structures and social interaction. In M. L. Knapp & J. A. Daly (Eds.), *The SAGE handbook of interpersonal communication* (4th ed., pp. 169–200). Sage.
- Blakemore, S. J., & Mills, K. L. (2014). Is adolescence a sensitive period for sociocultural processing? *Annual Review of Psychology, 65*(1), 187–207. <https://doi.org/10.1146/annurev-psych-010213-115202>
- Blumberg, E. J., Hovell, M. F., Werner, C. A., Kelley, N. J., Sipan, C. L., Burkham, S. M., & Hofstetter, C. R. (1997). Evaluating AIDS-related social skills in Anglo and Latino adolescents: Focus on assessment. *Behavior Modification, 21*(3), 281–307. <https://doi.org/10.1177/01454455970213002>
- Blunt-Vinti, H., Jozkowski, K. N., & Hunt, M. (2019). Show or tell? Does verbal and/or nonverbal sexual communication matter for sexual satisfaction? *Journal of Sex & Marital Therapy, 45*(3), 206–217. <https://doi.org/10.1080/0092623X.2018.1501446>
- Bois, K., Bergeron, S., Rosen, N., Mayrand, M.-H., Brassard, A., & Sadikaj, G. (2016). Intimacy, sexual satisfaction, and sexual distress in vulvodynia couples: An observational study. *Health Psychology, 35*(6), 531–540. <https://doi.org/10.1037/hea0000289>
- Borawski, E. A., Trapl, E. S., Adams-Tufts, K., Hayman, L. L., Goodwin, M. A., & Lovegreen, L. D. (2009). Taking Be Proud! Be Responsible! to the suburbs: A replication study. *Perspectives on Sexual & Reproductive Health, 41*(1), 12–22. <https://doi.org/10.1363/4101209>
- Brafford, L. J., & Beck, K. H. (1991). Development and validation of a condom self-efficacy scale for college students. *Journal of American College Health, 39*(5), 219–225. <https://doi.org/10.1080/07448481.1991.9936238>
- Braithwaite, D. O., & Schrodt, P. (2022). *Engaging theories in interpersonal communication: Multiple perspectives*. Sage.
- Brown, C., Eisenberg, M. E., McMorris, B. J., & Sieving, R. E. (2020). Parents matter: Associations between parent connectedness and sexual health indicators among transgender and gender-diverse adolescents. *Perspectives on Sexual and Reproductive Health, 52*(4), 265–273. <https://doi.org/10.1363/psrh.12168>
- Bryan, A., Fisher, J. D., & Fisher, W. A. (2002). Tests of the mediational role of preparatory safer sexual behavior in the context of the theory of planned behavior. *Health Psychology, 21*(1), 71–80. <https://doi.org/10.1037/0278-6133.21.1.71>
- Carpenter, S. (2018). Ten steps in scale development and reporting: A guide for researchers. *Communication Methods and Measures, 12*(1), 25–44. <https://doi.org/10.1080/19312458.2017.1396583>
- Clark, L. A., & Watson, D. (1995). Constructing validity: Basic issues in objective scale development. *Psychological Assessment, 7*(3), 309–319. <https://doi.org/10.1037/14805-012>
- Constantine, N. A., Jerman, P., Berglas, N. F., Angulo-Olaiz, F., Chou, C.-P., & Rohrbach, L. A. (2015). Short-term effects of a rights-based sexuality education curriculum for high-school students: A cluster-randomized trial. *BMC Public Health, 15*(1), 293. <https://doi.org/10.1186/s12889-015-1625-5>
- Cook, W. L., & Kenney, D. A. (2005). The actor-partner interdependence model: A model of bidirectional effects in developmental studies. *International Journal of Behavioral Development, 29*(2), 101–109. <https://doi.org/10.1080/01650250444000405>
- Craig, R. T. (1999). Communication theory as a field. *Communication Theory, 9*(2), 119–161. <https://doi.org/10.1111/j.1468-2885.1999.tb00355.x>
- Crosby, R. A., DiClemente, R. J., Wingood, G. M., Rose, E., Lang, D., Crosby, R. A., DiClemente, R. J., Wingood, G. M., Rose, E., & Lang, D. (2003). Correlates of continued risky sex among pregnant African American teens: Implications for STD prevention. *Sexually Transmitted Diseases, 30*(1), 57–63. <https://doi.org/10.1097/00007435-200301000-00012>
- Crosby, R. A., DiClemente, R. J., Salazar, L. F., Wingood, G. M., McDermott-Sales, J., Young, A. M., & Rose, E. (2013). Predictors of consistent condom use among young African American women. *AIDS & Behavior, 17*(3), 865–871. <https://doi.org/10.1007/s10461-011-9998-7>
- Dahl, R. E., Allen, N., Wilbrecht, L., & Suleiman, A. B. (2018). Importance of investing in adolescence from a developmental science perspective. *Nature, 554*(7693), 441–450. <https://doi.org/10.1038/nature25770>
- Deardorff, J., Tschann, J. M., Flores, E., & Ozer, E. J. (2010). Sexual values and risky sexual behaviors among Latino youths. *Perspectives on Sexual and Reproductive Health, 42*(1), 23–32. <https://doi.org/10.1363/4202310>
- Di Noia, J., & Schinke, S. P. (2008). HIV risk-related attitudes, interpersonal influences, and intentions among at-risk urban, early adolescent girls. *American Journal of Health Behavior, 32*(5), 497–507. <https://doi.org/10.5555/ajhb.2008.32.5.497>
- Diamantopoulos, A., Sarstedt, M., Fuchs, C., Wilczynski, P., & Kaiser, S. (2012). Guidelines for choosing between multi-item and single-item scales for construct measurement: A predictive validity perspective. *Journal of the Academy of Marketing Science, 40*(3), 434–449. <https://doi.org/10.1007/s11747-011-0300-3>
- DiClemente, R. J. (1991). Predictors of HIV-preventive sexual behavior in a high-risk adolescent population: The influence of perceived peer norms and sexual communication on incarcerated adolescents' consistent use of condoms. *Journal of Adolescent Health, 12*(5), 385–390. [https://doi.org/10.1016/0197-0070\(91\)90052-N](https://doi.org/10.1016/0197-0070(91)90052-N)
- DiClemente, R. J., Wingood, G. M., Rose, E. S., Sales, J. M., Long, D. L., Caliendo, A. M., Hardin, J. W., & Crosby, R. (2009). Efficacy of sexually transmitted disease/human immunodeficiency virus sexual risk-reduction intervention for African American adolescent females seeking sexual health services: A randomized controlled trial. *Archives of Pediatric and Adolescent Medicine, 163*(12), 1112–1121. <https://doi.org/10.1001/archpediatrics.2009.205>
- DiClemente, R. J., Davis, T. L., Swartzendruber, A., Fasula, A. M., Boyce, L., Gelaude, D., Gray, S. C., Hardin, J., Rose, E., Carry, M., Sales, J. M., Brown, J. L., & Staples-Horne, M. (2014). Efficacy of an HIV/STI sexual risk-reduction intervention for African American adolescent girls in juvenile detention centers: A randomized controlled trial. *Women & Health, 54*(8), 726–749. <https://doi.org/10.1080/03630242.2014.932893>
- Dillard, J. P. (2015). Goals-plans-action theory of message production: Making influence messages. In D. Braithwaite & P. Schrodt (Eds.), *Engaging theories in interpersonal communication: Multiple perspectives* (2nd ed., pp. 63–74). Sage.
- Donald, M., Lucke, J., Dunne, M., O'Toole, B., & Raphael, B. (1994). Determinants of condom use by Australian secondary school students. *Journal of Adolescent Health, 15*(6), 503–510. [https://doi.org/10.1016/1054-139X\(94\)90499-S](https://doi.org/10.1016/1054-139X(94)90499-S)
- Donenberg, G., Emerson, E., Mackesy-Amity, M. E., & Fletcher, F. (2018). Sexual risk among African American girls seeking psychiatric care: A social-personal framework. *Journal of Consulting and Clinical Psychology, 86*(1), 24–38. <https://doi.org/10.1037/ccp0000270>
- Fishbein, M., & Ajzen, I. (2010). *Predicting and changing behavior: The reasoned action approach*. Taylor & Francis.
- Fix, R. L., Letourneau, E. J., Mauro, P. M., McCart, M. R., & Sheidow, A. J. (2019). Factors promoting and impeding HIV testing among adolescents in juvenile drug court. *AIDS Care, 31*(2), 177–180. <https://doi.org/10.1080/09540121.2018.1546818>
- Flores, D., & Barroso, J. (2017). 21st century parent-child sex communication in the United States: A process review. *Journal of Sex Research, 54*(4–5), 532–548. <https://doi.org/10.1080/00224499.2016.1267693>

- Fortenberry, J. D. (2014). Sexual learning, sexual experience, and healthy adolescent sex. In E. S. Lefkowitz & S. A. Vasilenko (Eds.), *Positive and negative outcomes of sexual behaviors: New directions for child and adolescent development* (Wiley), (pp. 71–86).
- Gallupe, O., Boyce, W. F., & Fergus, S. (2009). Non-use of condoms at last intercourse among Canadian youth: Influence of sexual partners and social expectations. *Canadian Journal of Human Sexuality, 18*(1–2), 27–34. [link.gale.com/apps/doc/A205857969/AONE?u=anon~2706861e&sid=googleScholar&xid=d6cf7ff0](https://doi.org/10.1007/s10865-018-9916-9).
- Gause, N. K., Brown, J. L., Welge, J., & Northern, N. (2018). Meta-analyses of HIV prevention interventions targeting improved partner communication: Effects on partner communication and condom use frequency outcomes. *Journal of Behavioral Medicine, 41*(4), 423–440. <https://doi.org/10.1007/s10865-018-9916-9>
- Gilchrist, L. D., & Schinke, S. P. (1983). Coping with contraception: Cognitive and behavioral methods with adolescents. *Cognitive Therapy and Research, 7*(5), 379–388. <https://doi.org/10.1007/BF01187166>
- Gottman, J. M., & Notarius, C. I. (2000). Decade review: Observing marital interaction. *Journal of Marriage and Family, 62*(4), 927–947. <https://doi.org/10.1111/j.1741-3737.2000.00927.x>
- Gutiérrez, L., Oh, H. J., & Gillmore, M. R. (2000). Toward an understanding of (Em)Power(Ment) for HIV/AIDS prevention with adolescent women. *Sex Roles, 42*(7/8), 581–611. <https://doi.org/10.1023/A:1007047306063>
- Guzmán, B. L., Schlehofer-Sutton, M. M., & Villanueva, C. M. (2003). Let's talk about sex: How comfortable discussions about sex impact teen sexual behavior. *Journal of Health Communication, 8*(6), 583–598. <https://doi.org/10.1080/1716100416>
- Haefel, G. J., & Howard, G. S. (2010). Self-report: Psychology's four-letter word. *American Journal of Psychology, 123*(2), 181–188. <https://doi.org/10.5406/amerjpsyc.123.2.0181>
- Haley, T., Puskar, K., Terhorst, L., Terry, M. A., & Charron-Prochownik, D. (2013). Condom use among sexually active rural high school adolescents personal, environmental, and behavioral predictors. *Journal of School Nursing, 29*(3), 212–224. <https://doi.org/10.1177/1059840512461282>
- Halpern, C. T., & Kaestle, C. E. (2014). Sexuality in emerging adulthood. Tolman, D. L., Diamond, L. M., Bauermeister, J. A., George, W. H., Pfaus, J. G., Ward, L. M. (Eds.). In *APA handbook of sexuality and psychology, Vol. 1: Person-based approaches* (pp. 487–522). American Psychological Association.
- Harden, K. P. (2014). A sex-positive framework for research on adolescent sexuality. *Perspectives on Psychological Science, 9*(5), 455–469. <https://doi.org/10.1177/1745691614535934>
- Harrison, A., Smit, J., Hoffman, S., Nzama, T., Leu, C. S., Mantell, J., Stein, Z., & Exner, T. (2012). Gender, peer and partner influences on adolescent HIV risk in rural South Africa. *Sexual Health, 9*(2), 178–186. <https://doi.org/10.1071/SH10150>
- Hart, T. A., & Heimberg, R. G. (2005). Social anxiety as a risk factor for unprotected intercourse among gay and bisexual male youth. *AIDS & Behavior, 9*(4), 505–512. <https://doi.org/10.1007/s10461-005-9021-2>
- Hicks, M. S., McRee, A.-L., & Eisenberg, M. E. (2013). Teens talking with their partners about sex: The role of parent communication. *American Journal of Sexuality Education, 8*(1–2), 1–17. <https://doi.org/10.1080/15546128.2013.790219>
- Hovell, M. F., Blumberg, E. J., Liles, S., Powell, L., Morrison, T. C., Duran, G., Sipan, C. L., Burkham, S., & Kelley, N. (2001). Training AIDS and anger prevention social skills in at-risk adolescents. *Journal of Counseling & Development, 79*(3), 347–355. <https://doi.org/10.1002/j.1556-6676.2001.tb01980.x>
- Jones, K. A., Cornelius, M. D., Silverman, J. G., Tancredi, D. J., Decker, M. R., Haggerty, C. L., De Genna, N. M., & Miller, E. (2016). Abusive experiences and young women's sexual health outcomes: Is condom negotiation self-efficacy a mediator? *Perspectives on Sexual and Reproductive Health, 48*(2), 57–64. <https://doi.org/10.1363/48e8616>
- Jozkowski, K. N., & Peterson, Z. D. (2014). Assessing the validity and reliability of the perceptions of the consent to sex scale. *Journal of Sex Research, 51*(6), 632–645. <https://doi.org/10.1080/00224499.2012.757282>
- Jozkowski, K. N., Marcantonio, T., Rhoads, K. E., Canan, S. N., Hunt, M. E., & Willis, M. (2019). A content analysis of sexual consent and refusal communication in mainstream films. *Journal of Sex Research, 56*(6), 754–765. <https://doi.org/10.1080/00224499.2019.1595503>
- Kamke, K., Widman, L., & Desmarais, S. L. (2020). Evaluation of an online sexual health program among adolescent girls with emotional and behavioral difficulties. *Journal of Child and Family Studies, 29*(4), 1044–1054. <https://doi.org/10.1007/s10826-019-01685-1>
- Kipke, M. D., Boyer, C., & Hein, K. (1993). An evaluation of an AIDS risk reduction education and skills training (ARREST) program. *Journal of Adolescent Health, 14*(7), 533–539. [https://doi.org/10.1016/1054-139X\(93\)90136-D](https://doi.org/10.1016/1054-139X(93)90136-D)
- Klein, C., & Card, J. J. (2011). Preliminary efficacy of a computer-delivered HIV prevention intervention for African American teenage females. *AIDS Education & Prevention, 23*(6), 564–576. <https://doi.org/10.1521/aeap.2011.23.6.564>
- Klettke, B., Hallford, D. J., & Mellor, D. J. (2014). Sexting prevalence and correlates: A systematic literature review. *Clinical Psychology Review, 34* (1), 44–53. <https://doi.org/10.1016/j.cpr.2013.10.007>
- Knapp, M. L., & Daly, J. A. (2011). Background and current trends in the study of interpersonal communication. In M. L. Knapp & L. A. Daly (Eds.), *The SAGE handbook of interpersonal communication* (4th ed., pp. 3–22). Sage.
- Kohut, T., Balzarini, R. N., Fisher, W. A., & Campbell, L. (2018). Pornography's associations with open sexual communication and relationship closeness vary as a function of dyadic patterns of pornography use within heterosexual relationships. *Journal of Social and Personal Relationships, 35*(4), 655–676. <https://doi.org/10.1177/0265407517743096>
- Lardier, D. T., Opara, I., Herrera, A., Henry, M., Garcia-Reid, P., & Reid, R. J. (2019). Sexual negotiation skills and risky behavior on sexual partnerships, HIV knowledge, and risk perception among urban youth of color: A latent class analysis. *Journal of HIV/AIDS & Social Services, 18*(3), 248–264. <https://doi.org/10.1080/15381501.2019.1632237>
- Lederman, R. P., Chan, W., & Roberts-Gray, C. (2008). Parent-adolescent Relationship Education (PARE): Program delivery to reduce risks for adolescent pregnancy and STDs. *Behavioral Medicine, 33*(4), 137–144. <https://doi.org/10.3200/BMED.33.4.137-144>
- MacNeil, S., & Byers, E. S. (2009). Role of sexual self-disclosure in the sexual satisfaction of long-term heterosexual couples. *Journal of Sex Research, 46*(1), 3–14. <https://doi.org/10.1080/00224490802398399>
- Madigan, S., Ly, A., Rash, C., Van Ouytsel, J., & Temple, J. R. (2018). Prevalence of multiple forms of sexting behavior among youth: A systematic review and meta-analysis. *JAMA Pediatrics, 172*(4), 327–335. <https://doi.org/10.1001/jamapediatrics.2017.5314>
- Magura, S., Shapiro, J. L., & Kang, S. Y. (1994). Condom use among criminally-involved adolescents. *AIDS Care, 6*(5), 595–603. <https://doi.org/10.1080/09540129408258673>
- Maheux, A. J., Widman, L., Hurst, J. L., Craig, E., Evans-Paulson, R., & Choukas-Bradley, S. (2022). Behavioral measures to assess adolescent sexual communication with partners: A scoping review and call for further studies. *Journal of Sex Research. https://doi.org/10.1080/00224499.2022.2103072*
- Mark, K. P., & Jozkowski, K. N. (2013). The mediating role of sexual and nonsexual communication between relationship and sexual satisfaction in a sample of college-age heterosexual couples. *Journal of Sex & Marital Therapy, 39*(5), 410–427. <https://doi.org/10.1080/0092623X.2011.644652>
- Medina, R. S., Enriquez Negrete, D. J., & Robles Montijo, S. S. (2016). Evaluation of an intervention program to promote sexual health among Mexican adolescents in conflict with the law. *Acta Colombiana de Psicología, 19*(2), 269–280. doi:10.14718/ACP.2016.19.2.11



- Milhausen, R. R., Sales, J. M., Wingood, G. M., Diclemente, R. J., Salazar, L. F., & Crosby, R. A. (2007). Validation of a partner sexual communication scale for use in HIV/AIDS prevention interventions. *Journal of HIV/AIDS Prevention in Children & Youth*, 8(1), 11–33. [https://doi.org/10.1300/J499v08n01\\_02](https://doi.org/10.1300/J499v08n01_02)
- Miller, G. R., & Steinberg, M. (1975). *Between people*. Science Research Associates.
- Montesti, J., Fauber, R. L., Gordon, E. A., & Heimberg, R. G. (2011). The specific importance of communicating about sex to couples' sexual and overall relationship satisfaction. *Journal of Social & Personal Relationships*, 28(5), 591–609. <https://doi.org/10.1177/0265407510386833>
- Mori, C., Temple, J. R., Browne, D., & Madigan, S. (2019). Association of sexting with sexual behaviors and mental health among adolescents: A systematic review and meta-analysis. *JAMA Pediatrics*, 173(8), 770–779. <https://doi.org/10.1001/jamapediatrics.2019.1658>
- Morrison, D. M., Oxford, M. L., Gillmore, M. R., Richey, C. A., & Balassone, M. L. (2000). Negotiating condom use: Partner type and gender effects. *Journal of HIV/AIDS Prevention & Education for Adolescents & Children*, 3(4), 29–47. [https://doi.org/10.1300/J129v03n04\\_03](https://doi.org/10.1300/J129v03n04_03)
- Muehlenhard, C. L., Humphreys, T. P., Jozkowski, K. N., & Peterson, Z. D. (2016). The complexities of sexual consent among college students: A conceptual and empirical review. *Journal of Sex Research*, 53(4–5), 457–487. <https://doi.org/10.1080/00224499.2016.1146651>
- Mustanski, B., Greene, G. J., Ryan, D., & Whitton, S. W. (2015). Feasibility, acceptability, and initial efficacy of an online sexual health promotion program for LGBT youth: The Queer Sex Ed intervention. *The Journal of Sex Research*, 52(2), 220–230. <https://doi.org/10.1080/00224499.2013.867924>
- Nesi, J., Choukas-Bradley, S., & Prinstein, M. J. (2018). Transformation of adolescent peer relations in the social media context: Part 1—A theoretical framework and application to dyadic peer relationships. *Clinical Child and Family Psychology Review*, 21(3), 267–294. <https://doi.org/10.1007/s10567-018-0261-x>
- Norris, A. L., Brown, L. K., DiClemente, R. J., Valois, R. F., Romer, D., Venable, P. A., & Carey, M. P. (2019). African-American sexual minority adolescents and sexual health disparities: An exploratory cross-sectional study. *Journal of the National Medical Association*, 111(3), 302–309. <https://doi.org/10.1016/j.jnma.2018.11.001>
- Overby, K. J., & Kegeles, S. M. (1994). The impact of AIDS on an urban population of high-risk female minority adolescents: Implications for intervention. *Journal of Adolescent Health*, 15(3), 216–227. [https://doi.org/10.1016/1054-139X\(94\)90507-X](https://doi.org/10.1016/1054-139X(94)90507-X)
- Paulhus, D. L., & Vazire, S. (2007). The self-report method. In R. W. Robins, R. C. Fraley, & R. F. Krueger (Eds.), *Handbook of research methods in personality psychology*, (Guilford Press), (pp. 224–239).
- Petronio, S. (2013). Brief status report on communication privacy management theory. *Journal of Family Communication*, 13(1), 6–14. <https://doi.org/10.1080/15267431.2013.743426>
- Pham, M. T., Rajić, A., Greig, J. D., Sargeant, J. M., Papadopoulos, A., & McEwen, S. A. (2014). A scoping review of scoping reviews: Advancing the approach and enhancing the consistency. *Research Synthesis Methods*, 5(4), 371–385. <https://doi.org/10.1002/jrsm.1123>
- Ramiro-Sánchez, T., Ramiro, M. T., Bermúdez, M. P., & Buela-Casal, G. (2018). Sexism and sexual risk behavior in adolescents: Gender differences. *International Journal of Clinical and Health Psychology*, 18(3), 245–253. <https://doi.org/10.1016/j.ijchp.2018.04.002>
- Rehman, U. S., Lizdek, I., Fallis, E. E., Sutherland, S., & Goodnight, J. A. (2017). How is sexual communication different from nonsexual communication? A moment-by-moment analysis of discussions between romantic partners. *Archives of Sexual Behavior*, 46(8), 2339–2352. <https://doi.org/10.1007/s10508-017-1006-5>
- Rickert, V. I., Jay, S., Gottlieb, A., & Bridges, C. (1989). Adolescents and AIDS: Female's attitudes and behaviors toward condom purchase and use. *Journal of Adolescent Health Care*, 10(4), 313–316. [https://doi.org/10.1016/0197-0070\(89\)90064-8](https://doi.org/10.1016/0197-0070(89)90064-8)
- Rickman, R. L., Lodico, M., DiClemente, R. J., Morris, R., Baker, C., & Huscroft, S. (1994). Sexual communication is associated with condom use by sexually active incarcerated adolescents. *Journal of Adolescent Health*, 15(5), 383–388. [https://doi.org/10.1016/1054-139X\(94\)90261-5](https://doi.org/10.1016/1054-139X(94)90261-5)
- Righi, M. K., Bogen, K. W., Kuo, C., & Orchowski, L. M. (2021). A qualitative analysis of beliefs about sexual consent among high school students. *Journal of Interpersonal Violence*, 36(15–16), NP8290–NP8316. <https://doi.org/10.1177/0886260519842855>
- Roberto, A. J., Zimmerman, R. S., Carlyle, K. E., Abner, E. L., Cupp, P. K., & Hansen, G. L. (2007). The effects of a computer-based pregnancy, STD, and HIV prevention intervention: A nine-school trial. *Health Communication*, 21(2), 115–124. <https://doi.org/10.1080/10410230701306990>
- Roels, R., Rehman, U. S., Carter, C. S., Nazarloo, H. P., & Janssen, E. (2021). The link between oxytocin plasma levels and observed communication behaviors during sexual and nonsexual couple discussions: An exploratory study. *Psychoneuroendocrinology*, 129, 105265. <https://doi.org/10.1016/j.psychneuen.2021.105265>
- Russell, S. T. (2005). Conceptualizing positive adolescent sexuality development. *Sexuality Research and Social Policy*, 2(3), 4–12. <https://doi.org/10.1525/srsp.2005.2.3.4>
- Russell, S. T., Van Campen, K. S., & Muraco, J. A. (2012). Sexuality development in adolescence. *Sex for Life*, 70–87. <https://doi.org/10.18574/nyu/9780814772522.003.0003>
- Ryan, S., Franzetta, K., Manlove, J., & Holcombe, E. (2007). Adolescents' discussions about contraception or STDs with partners before first sex. *Perspectives on Sexual and Reproductive Health*, 39(3), 149–157. <https://doi.org/10.1363/3914907>
- Saftner, M. A., Pruitt, K. S., & McRee, A.-L. (2019). Conversation, condoms, and contraception: How does communication with sexual partners affect safer sexual behaviors among American Indian youth? *Journal of School Nursing*, 37(2), 109–116. <https://doi.org/10.1177/1059840519849097>
- Santos-Iglesias, P., & Byers, E. S. (2020). Development and initial validation of the verbal and nonverbal sexual communication questionnaire in Canada and Spain. *Sexual and Relationship Therapy*, 35(1), 60–76. <https://doi.org/10.1080/14681994.2018.1442569>
- Schinke, S. P., Gilchrist, L. D., & Blythe, B. J. (1980). Role of communication in the prevention of teenage pregnancy. *Health & Social Work*, 5(3), 54–59. <https://doi.org/10.1093/hsw/5.3.54>
- Schinke, S. P., Blythe, B. J., & Gilchrist, L. D. (1981). Cognitive-behavioral prevention of adolescent pregnancy. *Journal of Counseling Psychology*, 28(5), 451. <https://doi.org/10.1037/0022-0167.28.5.451>
- Schmid, A., Leonard, N. R., Ritchie, A. S., & Gwadz, M. V. (2015). Assertive communication in condom negotiation: Insights from late adolescent couples' subjective ratings of self and partner. *Journal of Adolescent Health*, 57(1), 94–99. <https://doi.org/10.1016/j.jadohealth.2015.03.005>
- Scull, T. M., Malik, C. V., & Kupersmidt, J. B. (2014). A media literacy education approach to teaching adolescents comprehensive sexual health education. *The Journal of Media Literacy Education*, 6(1), 1–14. <https://doi.org/10.23860/jmle-6-1-1>
- Scull, T. M., Kupersmidt, J. B., Malik, C. V., & Morgan-Lopez, A. A. (2018). Using media literacy education for adolescent sexual health promotion in middle school: Randomized control trial of media aware. *Journal of Health Communication*, 23(12), 1051–1063. <https://doi.org/10.1080/10810730.2018.1548669>
- Seth, P., Patel, S. N., Sales, J. M., DiClemente, R. J., Wingood, G. M., & Rose, E. S. (2011). The impact of depressive symptomatology on risky sexual behavior and sexual communication among African American female adolescents. *Psychology, Health & Medicine*, 16(3), 346–356. <https://doi.org/10.1080/13548506.2011.554562>
- Shannon, C. W., & Weaver, W. (1949). *The mathematical theory of communication*. University of Illinois Press.
- Shrier, L. A., Goodman, E., & Emans, J. (1999). Partner condom use among adolescent girls with sexually transmitted diseases. *Journal of Adolescent Health*, 24(5), 357–361. [https://doi.org/10.1016/S1054-139X\(98\)00133-5](https://doi.org/10.1016/S1054-139X(98)00133-5)



- Sieving, R. E., McMorris, B. J., Beckman, K. J., Pettingell, S. L., Secor-Turner, M., Kugler, K., Garwick, A. W., Resnick, M. D., & Bearinger, L. H. (2011). Prime time: 12-month sexual health outcomes of a clinic-based intervention to prevent pregnancy risk behaviors. *Journal of Adolescent Health, 49*(2), 172–179. <http://doi.org/10.1016/j.jadohealth.2010.12.002>
- Silverman, J. G., McCauley, H. L., Decker, M. R., Miller, E., Reed, E., & Raj, A. (2011). Coercive forms of sexual risk and associated violence perpetrated by male partners of female adolescents. *Perspectives on Sexual & Reproductive Health, 43*(1), 60–65. <https://doi.org/10.1363/4306011>
- Smith, A., & Anderson, M. (2018). *Social media use in 2018*. <https://www.pewresearch.org/internet/2018/03/01/social-media-use-in-2018/>
- Spitzberg, B. H., & Cupach, W. R. (2011). Interpersonal skills. In M. L. Knapp & J. A. Daly (Eds.), *The SAGE handbook of interpersonal communication* (4th ed., pp. 481–526). Sage.
- St. Lawrence, J. S., Brasfield, T. L., Shirley, A., Jefferson, K. W., Alleyne, E., & O'Bannon, R. E. (1995). Cognitive-behavioral intervention to reduce African American adolescents' risk for HIV infection. *Journal of Consulting and Clinical Psychology, 63*(2), 221–237. <https://doi.org/10.1037/0022-006X.63.2.221>
- Stafford, L. (2015). Social exchange theories: Calculating the rewards and costs of personal relationships. In D. Braithwaite & P. Schrodtt (Eds.), *Engaging theories in interpersonal communication: Multiple perspectives* (2nd ed., pp. 403–416). Sage.
- Steinberg, L. (2005). Cognitive and affective development in adolescence. *Trends in Cognitive Science, 9*(2), 69–74. <https://doi.org/10.1016/j.tics.2004.12.005>
- Strasburger, V. C. (2012). Adolescents, sex, and the media. *Adolescent Medicine: State of the Art Reviews, 23*(1), 15. <https://pubmed.ncbi.nlm.nih.gov/22764553/>
- Swanson, R. A., & Chermack, T. J. (2013). *Theory building in applied disciplines*. Berrett-Koehler Publishers.
- Tschann, J. M., & Adler, N. E. (1997). Sexual self-acceptance, communication with partner, and contraceptive use among adolescent females: A longitudinal study. *Journal of Research on Adolescence, 7*(4), 413–430. [https://doi.org/10.1207/s15327795jra0704\\_4](https://doi.org/10.1207/s15327795jra0704_4)
- Tschann, J. M., Flores, E., de Groat, C. L., Deardorff, J., & Wibbelsman, C. J. (2010). Condom negotiation strategies and actual condom use among Latino youth. *Journal of Adolescent Health, 47*(3), 254–262. <https://doi.org/10.1016/j.jadohealth.2010.01.018>
- van de Bongardt, D., & de Graaf, H. (2020). Youth's socio-sexual competences with romantic and casual sexual partners. *Journal of Sex Research, 57*(9), 1166–1179. <https://doi.org/10.1080/00224499.2020.1743226>
- Van Ouytsel, J., Walrave, M., Ponnet, K., & Heirman, W. (2015). The association between adolescent sexting, psychosocial difficulties, and risk behavior: Integrative review. *Journal of School Nursing, 31*(1), 54–69. <https://doi.org/10.1177/1059840514541964>
- Vannier, S. A., & O'Sullivan, L. (2011). Communicating interest in sex: Verbal and nonverbal initiation of sexual activity in young adults' romantic dating relationships. *Archives of Sexual Behavior, 40*(5), 961–969. <https://doi.org/10.1007/s10508-010-9663-7>
- Vasilenko, S. A., & Lanza, S. T. (2014). Predictors of multiple sexual partners from adolescence through young adulthood. *Journal of Adolescent Health, 55*(4), 491–497. <https://doi.org/10.1016/j.jadohealth.2013.12.025>
- Vasilenko, S. A., Kreager, D. A., & Lefkowitz, E. S. (2015). Gender, contraceptive attitudes, and condom use in adolescent romantic relationships: A dyadic approach. *Journal of Research on Adolescence, 25*(1), 51–62. <https://doi.org/10.1111/jora.12091>
- Welsh, D. P., & Sculman, S. (2008). Directly observed interaction within adolescent romantic relationships: What have we learned? *Journal of Adolescence, 31*(6), 877–891. <https://doi.org/10.1016/j.adolescence.2008.10.001>
- Widman, L., Welsh, D. P., McNulty, J. K., & Little, K. C. (2006). Sexual communication and contraceptive use in adolescent dating couples. *Journal of Adolescent Health, 39*(6), 893–899. <http://doi.org/10.1016/j.jadohealth.2006.06.003>
- Widman, L., Noar, S. M., Choukas-Bradley, S., & Francis, D. B. (2014). Adolescent sexual health communication and condom use: A meta-analysis. *Health Psychology, 33*(10), 1113–1124. <https://doi.org/10.1037/hea0000112>
- Widman, L., Nesi, J., Choukas-Bradley, S., & Prinstein, M. J. (2014). Safe sext: Adolescents' use of technology to communicate about sexual health with dating partners. *Journal of Adolescent Health, 54*(5), 612–614. <https://doi.org/10.1016/j.jadohealth.2013.12.009>
- Widman, L., Golin, C. E., Kamke, K., Burnette, J. L., & Prinstein, M. J. (2018). Sexual assertiveness skills and sexual decision-making in adolescent girls: Randomized controlled trial of an online program. *American Journal of Public Health, 108*(1), 96–102. <https://doi.org/10.2105/AJPH.2017.304106>
- Widman, L., Kamke, K., Evans, R., Stewart, J. L., Choukas-Bradley, S., & Golin, C. E. (2020). Feasibility, acceptability, and preliminary efficacy of a brief online sexual health program for adolescents. *Journal of Sex Research, 57*(2), 145–154. <https://doi.org/10.1080/00224499.2019.1630800>
- Widman, L., Javidi, H., Maheux, A. J., Evans, R., Nesi, J., & Choukas-Bradley, S. (2021). Sexual communication in the digital age: Adolescent sexual communication with parents and friends about sexting, pornography, and starting relationships online. *Sexuality & Culture, 25*(6), 2092–2109. <https://doi.org/10.1007/s12119-021-09866-1>
- Wiederman, M. W. (2012). Reliability and validity of measurement. In M. W. Wiederman & E. J. Whitely (Eds.), *Handbook for conducting research on human sexuality*. Earlbaum.
- Willie, T. C., Callands, T. A., & Kershaw, T. S. (2018). Intimate partner violence, sexual autonomy and postpartum STD prevention among young couples: A mediation analysis. *Perspectives on Sexual and Reproductive Health, 50*(1), 25–32. <https://doi.org/10.1363/psrh.12050>
- Wilson, M. D., Kastrinakis, M., D'Angelo, L. J., & Getson, P. (1994). Attitudes, knowledge, and behavior regarding condom use in urban Black adolescent males. *Adolescence, 29*(113), 13–26. <https://pubmed.ncbi.nlm.nih.gov/8036971/>