

Affectionate Communication, Health, and Relationships

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We have no known conflicts of interest to disclose.

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Abstract

A robust body of research attests to the mental and physical health correlates and consequences of affectionate communication. Like much research on personal relationships, however, this work may overrepresent certain portions of the population, may underrepresent others, and may not effectively account for intersections of identities. We define intersectionality as comprising the unique effects of two or more social identities interacting with each other. To assess this literature with an eye toward intersectionality and representation, the present paper reports a systematic review of 86 individual empirical studies representing 26,013 participants. The review concludes that there is no explicit or implicit attention to intersectionality in the existing research on affectionate communication and health, and that U.S. Americans, women, younger individuals, white individuals, and students are overrepresented in research samples. The review ends with future directions to encourage more inclusive research on this topic.

Keywords: Affectionate communication, health, well-being, relationships, systematic review

A good deal of research shows that affectionate communication supports physical and mental health. Much of this research has been conducted on U.S. American undergraduate students, however, raising the question of how well it generalizes to larger audiences. This paper examines the characteristics of samples in research on affectionate communication and health to ascertain how representative the samples are how they deal with intersecting identities.

Affectionate Communication, Health, and Relationships

Few communicative behaviors are more consequential for the formation, maintenance, and satisfaction level of personal relationships than the exchange of affection. The first hug, the first kiss, or the first “I love you” are often critical turning points in relational development (Owen, 1987), whereas a lack of affection is one of the most common reasons for seeking marital therapy (Doss et al., 2004) and divorce (Amato & Previti, 2003). Affectionate communication is significantly associated with satisfaction in a wide range of personal relationships, including in marriages (Punyanunt-Carter, 2004), families (Hesse et al., 2014), cohabiting romantic relationships (Floyd et al., 2009), parent-child relationships (MacDonald, 1992), sibling and sibling-in-law relationships (Floyd & Morr, 2003), caregiver relationships (Parsons et al., 1989), friendships (Floyd & Voloudakis, 1999), small-group relationships (Anderson & Martin, 1995), and even among those meeting for the first time (Floyd & Burgoon, 1999).

In addition to supporting relational health, affectionate communication also contributes to physical and mental health, as a robust empirical literature describes (for a recent meta-analysis, see Hesse et al., 2020). Its implications for wellness raise legitimate questions, however, about representation in this body of research. Do the empirical data support the claim that affectionate behavior is good for mental and physical well-being across the social spectrum, or are the experiences of only some portions of the population represented, calling into question the validity of that claim for others? This is a legitimate concern in light of observations that social science research heavily favors U.S. American samples (see Thalmayer et al., 2021). Moreover, what claims—if any—does the literature warrant for *intersectional* identities? We define intersectionality as comprising the unique effects of two or more social identities interacting with each other. This review of the empirical literature on affectionate communication and health addresses these questions.

We begin with a brief introduction to affectionate communication and an overview of its associations with physical and mental health. We then articulate specific research questions before offering positionality statements to describe our backgrounds and our roles in this inquiry.

Affectionate Communication

Floyd and Morman (1998) defined affectionate communication as “an individual’s intentional and overt enactment or expression of feelings of closeness, care, and fondness for another” (p. 145). After surveying adults about how they expressed affection in their close relationships, Floyd and Morman (1998) discerned the presence of three distinct categories of affectionate expressions, which eventually comprised their tripartite model of affectionate behavior: 1) verbal communication (e.g., saying, “I care about you”); 2) nonverbal communication (e.g., hugs or kisses); and 3) indirect/supportive affection (e.g., helping someone move or acknowledging a birthday). More recently, Floyd and colleagues (2021) investigated whether the tripartite model sufficiently accounted for individually reported acts of affectionate communication from a Census-matched probability sample of U.S. American adults. They found that although some acts of affectionate communication (e.g., hugging, kissing, expressions of love and care) were reported more frequently than others, all 13 categories of affectionate behavior derived from participants’ descriptions mapped conceptually onto the existing tripartite model. It should be noted, however, that most adults have the ability to express “affection” in the absence of the corresponding emotion, a behavior known as deceptive affection (e.g., Horan & Booth-Butterfield, 2011).

Over several decades, scholars have offered various theoretical arguments speaking to the importance of affectionate communication to the human experience. These include efforts to frame affectionate communication as fulfilling basic human needs (Schutz, 1958), facilitating our need to belong (Baumeister & Leary, 1995), or equipping individuals to navigate various stressors (Taylor et al., 2000). These and other theoretic principles have suggested the possibility that affectionate behavior may have salutary effects on physical and/or mental wellness, and scholars from various academic disciplines have explored these potential effects, as described subsequently.

How Affectionate Communication Is Associated with Health

A robust literature indicates that both the verbal (e.g., Floyd, Mikkelsen, Tafoya et al., 2007a) and nonverbal (e.g., Debrot, Stellar et al., 2021; Jakubiak & Feeney, 2018) communication of affection are associated with a variety of health and well-being outcomes. These effects include increased psychological (e.g., Debrot et al., 2013; Floyd et al., 2005), physiological (e.g., Cohen et al., 2015; Holt-

Lunstad et al., 2011) and relational¹ well-being (Floyd et al., 2009; Jakubiak & Feeney, 2019). With respect to physical wellness, research indicates that an individual's trait affection level—indexing how affectionate that individual typically is with others—is positively associated with natural killer cell toxicity (Floyd, Pauley et al., 2014) and 24-hour cortisol variation (Floyd, 2006b; Floyd & Riforgiate, 2008), and is negatively associated with resting heart rate (Floyd, Mikkelsen, Tafoya et al., 2007b) and resting blood pressure and blood glucose (Floyd, Hesse et al., 2007). Indirect/supportive affection, in particular, is further positively associated with a variety of immune markers, including immunoglobulins M and G, T-cells CD3+, CD4+, and CD8+, and the B-cell CD19+ (Floyd et al., 2018).

Among its most important health benefits is the ability of affectionate communication to ameliorate stress and support immunocompetence. For instance, inducing affectionate behavior before a stressful event inhibits physiological reactivity to that stressor (Pauley et al., 2015), whereas inducing affectionate behavior after a stressor accelerates physiological recovery (Ditzen et al., 2019; Floyd, Mikkelsen, Tafoya et al., 2007a). Cohen et al. (2015) further found that the frequency of hugging, specifically, predicted reduced susceptibility to a rhinovirus, whereas van Raalte and Floyd (2021) showed that hugging frequency predicted lower levels of two proinflammatory cytokines. Unsurprisingly, some health outcomes are enhanced when affectionate behavior is experimentally manipulated in relationships. Both laboratory and field experiments have indicated that increasing affection produces salutary physical effects, including reduced allergic symptoms (Kimata, 2003, 2006), reduced blood pressure (Grewen et al., 2003) and cardiovascular reactivity (Grewen et al., 2005), and lower blood lipid levels (Floyd et al., 2009).

Affectionate communication also shows significant associations with a variety of mental health indices. Some such research has focused on affectionate touch, specifically. Debrot et al. (2013), for instance, showed that affectionate touch shared between dating partners predicted greater positivity both in participants' own affective state and in their partners' affective state, whereas Burleson et al. (2007)

¹ Note that the present review focuses only on mental and physical (but not relational) well-being.

reported significant associations between physical touch and positive mood in a diary study of pre- and perimenopausal women. In a field experiment, Clipman (1999) demonstrated that inducing more frequent hugging produced a significant increase in general subjective wellness.

Trait-level affectionate communication is also significantly associated with mental wellness. In a series of correlational studies, Floyd (2002) and Floyd et al. (2005) reported that individuals higher in trait expressed affection—an index of how expressive of affection one typically is with others—evidence lower levels of stress and depression symptomatology. Affectionate communicators further evidence higher levels of self-esteem, general subjective wellness, and happiness (for further examples, see Jorm et al. 2003; Maselko et al., 2010).

A recent meta-analysis demonstrated that communicating affection is significantly associated with wellness, with a weighted mean effect of $r = .23$ (Hesse et al., 2020), which is slightly stronger than the average effect size of $r = .21$ found in research across the communication discipline (Rains et al., 2018). Interestingly, Hesse and colleagues found that expressed affection is more strongly associated with health ($r = .24$) than received affection ($r = .15$), but also that shared affection (in which all involved both send and receive affectionate messages) was associated with health most strongly ($r = .28$). Regarding health outcomes, cardiovascular health was more strongly associated with affection than any other form of physical health (Hesse et al., 2020).

Why Affectionate Communication Is Associated with Health: The Theories

Multiple theories offer relevant frameworks for understanding why affectionate communication is related to health (for a comprehensive review, see Floyd, 2019). Table 1 enumerates the theories used to frame the research included in this review. We did not select these theories to describe a priori; rather, these were the theories used in the research covered by this review. In the last two decades, the most frequently employed theory for investigating affectionate communication and health has been affection exchange theory (AET: Floyd, 2006, 2019). As a neo-Darwinian theory, AET frames affectionate communication as an innate, adaptive strategy for forming and maintaining the social, romantic, and familial relationships that provide resources necessary to support survival and reproduction. Those

resources include, among others, companionship, solidarity, protection from threats, access to mating potential, and assistance with childrearing.

Five postulates comprise AET. First, the theory proposes that the need and capacity for affection are inborn rather than environmentally acquired. Second, affectionate feelings and affectionate expression can, but do not necessarily, covary. This means that one can feel affection that is not expressed, and also express affection that is not felt. Third, affectionate communication is adaptive for human viability and fertility. This is achieved by promoting significant human pair bonds, by promoting immunocompetence and regulatory physiological pathways for stress and reward, and by advertising the viability of a potential mating partner.

In its fourth postulate, AET specifies that individuals vary in their optimal tolerances for affectionate communication, which are “bounded on the lower end by *need*, or how much affectionate emotion or behavior are required, and on the upper end by *desire*, or how much affectionate emotion or behavior are wanted” (Floyd, 2019, p. 32, italics in original). Finally, in its fifth postulate, the theory provides that neither insufficient nor excessive affectionate communication is beneficial. Indeed, research has shown that receiving both *too little* affection (Floyd, 2014, 2016) and *too much* affection (Hesse et al., 2017; Hesse & Mikkelson, 2021) not only fail to support health but are actually detrimental. Hence, AET provides a comprehensive and rich framework for generating and interpreting affectionate communication research. A systematic analysis of interpersonal communication research published from 2006 to 2013 identified AET as one of the ten most frequently used theories, ranking higher in frequency (at least within that discipline) than the other theories described in this section (Braithwaite et al., 2015, p. 14).

As Table 1 details, several other theories are also represented in this literature. Jakubiak and Feeney’s (2017) *affectionate touch model* concerns physical affection more specifically. It posits that affectionate touch is associated with psychological, physical, and relational well-being in adulthood. Several pathways are hypothesized, some implicating the reduction of stress and others taking different approaches. Moreover, relational-cognitive changes and neurobiological changes are considered important mechanisms to explain the touch-wellness association. Bowlby’s (1969) *attachment theory*

proposes that human survival is linked to the formation of secure attachment bonds between infants and caregivers, and more contemporary applications of the theory implicate attachment styles that guide the formation of emotionally close bonds throughout the life course. Coan's (2008) *social baseline theory* claims that human cognitive processes assume the availability of social resources and that neural, physiological, and cognitive processes are nearly always situated within social contexts.

The *stress buffering models* of Cohen and Wills (1985) and Chen et al. (2017) posit that social support—which some studies have operationally defined to include expressions of affection—is beneficial to health in part because it buffers the individual from the effects of stressors. Those with higher levels of social support therefore have muted psychological and physiological reactions to stressful events and return to their baseline levels of arousal more quickly than those without such support.

According to Baumeister and Leary's (1995) seminal work, the *need to belong*—that is, the need to form and maintain attachment bonds enabling recurring positive interaction—is a fundamental human motivation. These authors argue that in the evolution of humans as highly social beings, positive social connections offered security, protection, and mating opportunity, whereas social isolation or ostracism were highly precarious. Consequently, natural selection has primed humans to attend to the task of forming and maintaining strong social bonds, and Floyd (2006a, 2019) has argued that affectionate communication is one of the most potent behavioral strategies for enacting such a task.

Brown and Brown's (2006) *selective investment theory* is an evolutionary theory of altruism proposing that human social bonds evolved to promote altruism among those who depend on each other for survival, including mates and offspring. Gatchel et al.'s (2007) *biopsychosocial model* is a heuristic approach to the assessment, prevention, and treatment of chronic pain that prescribes attention to the biological, psychological, emotional, cognitive, and relational dimensions of the chronic pain experience. Diamond's (2003) *biobehavioral model of romantic love* explains that romantic love and sexual desire are functionally independent and that the processes underlying romantic love and affection are not intrinsically tied to gender. The *risk regulation model* was proposed by Murray et al. (2006) to explain how individuals balance the competing goals of seeking closeness to a romantic partner and minimizing

the likelihood of rejection. The model's principal claim is that people feel confident seeking connectedness with a partner in whose positive regard and caring they have confidence.

Family communication patterns theory (Koerner & Fitzpatrick, 2002) is a social-cognitive theory suggesting that family systems are characterized by patterns of conversation orientation (the degree to which unrestrained interaction is encouraged) and conformity orientation (the degree to which homogeneity of attitudes and beliefs is encouraged). When crossed, these orientations give rise to four family communication styles: pluralistic, consensual, laissez-faire, and protective. Finkel et al.'s (2015) *suffocation model* explains that the fundamental nature of marriage in the United States has increasingly shifted toward a model in which marriage is intended to help spouses meet their personal-growth and autonomy needs. Finkel explains that marital dissatisfaction has risen as the proportion of marriages that fall short of these expectations has increased. Finally, Porges's (2011) *polyvagal theory* implicates the activity of the vagus nerve in social connection, as well as the regulation of emotion (particularly fear). This theory differentiates the activity of the ventral vagal system (supporting social engagement) and the dorsal vagal system (supporting immobilization and rest).

Many of the theories represented in Table 1 take an explicitly bioevolutionary approach to the study of affection and health. Specifically, some theories propose that communicating affection, especially in close relationships, enhances mental and physical wellness by, among other things, strengthening the body's ability to manage stress. Although additional pathways are articulated, the focus on stress is notable, given that elevated stress precipitates or intensifies numerous physical and mental detriments (e.g., Marketon & Glaser, 2008). AET, in particular, proposes that affectionate communication improves the body's stress response, buffers against heightened physiological responses to various stressors, and accelerates stress recovery more efficiently than other activities (e.g., Floyd, Hesse et al., 2007; Floyd, Mikkelsen et al., 2007; Floyd & Riforgiate, 2008). To that extent, then, the communication of affection has the potential to improve important cardiovascular, immune, and endocrine parameters that are exacerbated by stress.

The potential correlational—and especially causal—links between affectionate behavior and health are provocative both theoretically and with respect to their possible clinical implications. Like all science, however, the ability to generalize from these findings is tempered by the methodologies used to study them (including the populations and samples comprising the analyses), as well as by the theoretic assumptions guiding inquiry. Of the 13 theories identified in Table 1, all but three—the risk regulation model, family communication patterns theory, and the suffocation model—are bioevolutionary in nature. This observation is relevant because a bioevolutionary perspective on the connection between social behavior and health draws specific attention to questions such as “What are the evolutionary functions of a given behavioral pattern?” and “Via which physiological processes does a social behavior influence health?” (Tooby & Cosmides, 2020). In an evolutionary framework, distal causes—such as evolved patterns of covariation with survival and reproductive success—are prioritized over proximal causes, including social identities (Buss, 2016). Given the heavy focus on bioevolutionary explanatory frameworks in this research, it is perhaps predictable that social identities such as gender identity, sexual orientation, race and ethnicity, religion, and socioeconomic status—let alone their intersections—have not been primary foci in empirical investigations.

This raises the very legitimate question of how representative these findings are, especially when social identities and their intersections are considered. Simply because bioevolutionary theories would not draw attention to constructs such as identity does not necessarily mean these constructs are immaterial; instead, they may be overlooked in this literature by the heavy use of such theories. This paper endeavors to render a justifiable pronouncement on the generalizability of findings related to affectionate behavior and health by systematically reviewing issues of representation and intersectionality in the samples reflected in this literature. Toward that end, we examine two decades’ worth of empirical research with an eye toward questions such as:

- Who is included in the research? Who is left out?
- To what extent, if any, is the intersectionality between participants’ identities examined for the unique variance it may account for in health outcomes?

- What types of questions are valued?
- From whose vantage point is the research being conducted?

We offer these in the form of formal research questions subsequently. Importantly, we do not conduct this review *assuming* that variability exists among diverse populations or as a function of proximal factors but rather with the question of whether such variability exists.

Research Questions

Understanding how affectionate communication can affect health and wellness is a worthwhile academic endeavor that has both theoretical and applied utility. As in many other literatures, however, the reliance on, and consequential overrepresentation of, some populations as opposed to others has resulted in the noticeable underrepresentation and exclusion of certain people and experiences. To what extent do the aforementioned associations between affectionate communication and health associations reflect those whose biological, geological, and cultural backgrounds differentiate them from the samples used in the research? Addressing such a question requires us first to address the question of *representation: whose experiences are represented in the research and whose are not?* To this end, we pose our first research question:

RQ1: Who is included in the research and who is left out?

When investigating representation, however, we must also be mindful of the claim of *intersectionality*, which points out that when two or more identities intersect within individuals—such as in a Black woman or in a deaf gay person—researchers cannot fully appreciate those individuals' experience simply by examining their identities in isolation. Understanding the experience of women and the experience of Black people can help researchers understand what it means to be female and what it means to be Black in a given population, but it yields little insight into what it means to be female *and* Black in that same population. Similarly, a deaf gay man may struggle for acceptance within the Deaf community because of his orientation while also struggling for acceptance with the LGBTQ+ community because of his deafness.

The intersectionality perspective of Kimberlé Crenshaw and colleagues (Cho et al., 2013; Crenshaw, 1989) draws attention to the fundamental truth that identities intersect. As Hull et al. (2020) explained, “Intersectionality attends to the ways institutional and social forces (e.g., racism, sexism, classism) interact with individual identity dimensions (e.g., race, gender, class) to afford privilege and disadvantage differently for people at different social locations” (p. 1740). As in a two-way ANOVA, wherein two variables interact to account for unique variance beyond that accounted for by summing the two main effects, the interaction of identities can make a Black woman’s identity impossible to appreciate simply by adding what is known about Black people to what is known about women.

These observations press us to go further than simply analyzing representation in the affectionate communication/health literature by investigating how *intersectionality* (of any variety or combinations of identities) is adjudicated in this literature.

RQ2: How (if at all) is the intersectionality between two or more identities adjudicated when examining the associations between affectionate behavior and wellness?

A third important focus of this paper is not just on *who* this research could be missing, but on *what* it could be missing. Just as certain populations have received more attention than others, so too have certain questions and health outcomes. As noted by Hesse et al. (2021), for example, the lack of affectionate communication studies targeting immunological and metabolic health prevented the authors from including these in the meta-analysis’s moderation analyses. The dearth of studies measuring these outcomes and similar ones can be partially attributed to requiring more funding, extensive training, and participant accessibility than self-report measures do, but an effect of this oversight is that some clinical populations who might benefit from the research are failing to benefit, because the research that could help them is not being done. To ascertain which outcomes warrant greater attention and which outcomes currently have a robust empirical literature, we pose a third research question:

RQ3: What types of questions are valued?

Finally, in addition to addressing who is included or excluded in the research, our review also assessed from whose perspective the research on affectionate communication and health is being

conducted. This can expose potential limitations to understanding diversity and intersectionality in this literature. For instance, if most authors of the research are white, then it is possible that issues affecting racial and ethnic minorities are not as fully adjudicated as they may be. Thus, we pose a final research question:

RQ4: From whose vantage point is the research being conducted?

Ultimately, our review seeks to address the populations and questions scholars have included and excluded, valued and undervalued, from an intersectional lens. We make an intentional effort to go beyond offering typical future direction caveats (e.g., the need for more non-student samples) to provide a research agenda for future researchers that is high in heuristic value.

Positionality Statements

To reflect our approach to this article, it is useful to examine the positionality of the authors. To begin, four of the five authors (names withheld) share the home discipline of communication. Their training has oriented them toward a similar understanding of social interaction. This perspective, thankfully, is informed by the second author on this piece, whose home discipline is psychology. Despite disciplinary boundaries, all authors have made it a habit to read across disciplines throughout their careers, a practice we continued while crafting this article. We are largely social scientists, an approach that does not yield the rich descriptions that we could obtain if we were to adopt alternative in-depth methods. Although we read widely and acknowledge the equality in value and significance of interpretive and critical research, our post-positivist views guide most of our research.

Kory Floyd. I am a white, educated, cisgender, able-bodied American man from an educated family. I am married to another white, educated, cisgender, able-bodied American man. As a post-positivist, I believe that an objective reality—including a social reality—exists but that it can be adjudicated only probabilistically. The experiences and biases of both researchers and consumers of research make our questions and our findings inherently value laden. Although it is impossible to conduct research in a completely unbiased, value-free manner, I believe that controlling for bias and striving for value neutrality *to the extent possible* are worthwhile goals. Indeed, to the extent that findings are

replicated by researchers approaching a topic with diverse experiences, viewpoints, and values, I believe those findings warrant greater confidence.

Anik Debrot. I am a heterosexual, cisgender, able-bodied woman, who grew up in Switzerland in an educated, upper-middle-class family. I am partnered with a white educated French man. My parents are both white, one Swiss and one Latin-American, from educated families. I have always experienced the important differences in affectionate communication between these two cultural backgrounds. I study affectionate touch, mostly as a resource for personal and relational well-being. Until now I have mainly worked with so-called WEIRD (Western Educated Industrialized Rich Democratic) participants. I expect to find that research on affectionate communication has mainly investigated WEIRD population, as is true for most psychology research (see Thalmayer et al., 2021), with a focus on couples (see Jakubiak & Feeney, 2017) who are more satisfied than average (see Park et al., 2021; Rogge et al., 2006), and has neglected financially disadvantaged and sexual minority communities. I, however, strive to be as open as possible to any finding that might arise.

Sean Horan. I study affection using a social scientific approach, often focusing on the (dis)connection between *feeling* affection and affectionate (*non*)*expression*. To that end, I have undertaken studies designed to obtain quantitative and qualitative data. Much of my work is framed in or tests the arguments of affection exchange theory. Still, I make it a habit to read research in related disciplines, and I have served as associate editor for one of IARR's journals, further enforcing my appreciation of interdisciplinary scholarship. Moving beyond my position as a professor, my position in society warrants description. I am a second-generation American, the grandchild of poor Irish immigrants and the son of parents who grew up poor in the Bronx borough of New York City. My entry into college made me a first-generation college student. I am a White male member of the New York City metropolitan area, partnered with an Afro-Latino man. Albeit unconsciously, I acknowledge that these experiences influence how I approach the study of affectionate communication.

Colin Hesse. As a co-author on a review of the literature on affectionate communication, I must acknowledge the position that I bring to this review. I am a post-positivist scholar who seeks to uncover

truth through the scientific method and observational research. I also identify as a heterosexual white male, meaning that the majority of my personal experiences regarding affectionate communication would be considered through that lens. My background and beliefs are influenced through my personal history of growing up in a Christian environment in a conservative area of Washington state. I must acknowledge my lack of specific personal knowledge of affectionate communication in a host of cultural contexts and disadvantaged communities, including Black, Latino/x, and Queer spaces. I trust and hope that my co-authors have ably assisted in bringing other voices and perspectives into this review, being sure not to privilege one relationship type over another in terms of reviewing the general benefits of affectionate communication.

Nate Woo. As a post-positivist who received his master's and doctoral mentorship from two post-positivist communication theorists, I value and prioritize the scientific method, theory, and evidence-based research to uncover and better understand the truths that exist in our world. I am a fourth-generation Asian American of Japanese and Chinese descent who has firsthand experience communicating affection in an Asian American family environment as an only child. My identity as an able-bodied, atheist, heterosexual male who grew up in a progressive area of California has also influenced my perspective on how affection is exchanged and the contexts under which communicating affection is acceptable. My fiancée was born and raised in South Korea, and over the past five years I have learned more about different cultural expectations of affectionate communication firsthand from my relationship with her. Ultimately, I recognize that my views and their implications for affectionate communication and health might differ drastically from others who have fundamentally different perspectives.

Method

Sample of Studies

We employed a variety of strategies to obtain relevant research for inclusion in this review. Our goal was to identify papers examining health-related correlates or consequences of affectionate behavior. We framed our search using Floyd and Morman's (1998) definition of affectionate communication as one's "enactment or expression of feelings of closeness, care, and fondness for another" (p. 145); thus, the

focus was on studies examining the *expression* of affection, rather than simply the experience of having affectionate feelings. We defined health broadly to include outcomes related to mental wellness (e.g., depression or anxiety), physical well-being, and physiological indicators of health (e.g., heart rate variability or oxytocinergic reactivity to stressors).

First, computerized database searches of Google Scholar and PsycINFO were conducted in January and February 2021 to generate a pool of potential articles. These searches employed the following search terms: *affection, affectionate behavior, affectionate communication, health, mental health, physical health, well-being, touch, and wellness*. Second, we searched ProQuest Dissertations & Theses Global (formerly Dissertation Abstracts International) using the same search terms. Third, we posted to listservs for the National Communication Association, Society for Personality and Social Psychology, and the International Association for the Study of Affective Touch a call for unpublished manuscripts, conventions papers, and/or data sets. Fourth, we reviewed the bibliography of a recently published academic text on affectionate communication (Floyd, 2019). Fifth, we searched online convention programs from the National Communication Association, the International Communication Association, regional communication associations, and the International Association for Relationship Research. Sixth, we e-mailed authors of identified studies that did not provide sufficient information for coding to request additional data or details.

These processes resulted in an initial pool of 78 research papers focusing on health-related correlates or outcomes of affectionate communication, after duplicates were removed. These papers were then screened according to selection criteria described subsequently.

Selection Criteria

To be included in the analysis, studies had to meet four criteria:

1. The study reported data from human subjects.
2. The study measured both affectionate behavior and at least one mental and/or physical health parameter.
3. The study was not a meta-analysis.

4. The analyses were not re-analyses of previously published data (although *original* analyses conducted on pre-existing data were allowed).

This review process produced the present sample of 69 papers comprising 86 individual empirical studies representing 26,013 participants. A PDF of each study was obtained for coding. A PRISMA flow diagram (Moher et al., 2009) depicting the full selection process appears in Figure 1.

Coding

Studies were grouped by year of publication or presentation and each study was coded for the following: a) total sample size; b) low and high ages of participants; c) average age of participants; d) percentage of *N* who identified as female; e) percentage of *N* who identified as white; f) whether the sample comprised students, non-students, or both; g) whether the sample comprised Americans, non-Americans, or both; h) countries other than the United States represented in the sample, if any; i) measurement and/or manipulation of affectionate communication; and j) health outcomes assessed.

The following coding parameters were enforced:

1. For longitudinal (multi-wave) studies, the final-wave *N* and demographics were coded.
2. “Studies” were based on unique samples. When a given article reported more than one sample, these were coded as separate studies. When two or more studies used the same sample, these were coded as one study.
3. Samples from pilot studies were not coded.
4. Samples described as comprising students could be students of any age group, not just college students.

Two authors independently coded these variables for 20% of the sample to establish interrater reliability. Reliability estimates, based on Krippendorff’s alpha, appear in Table 2. Discrepancies were resolved via discussion, and then the remainder of the sample was coded. A list of the studies included in the review appears in Table 3.

Results

RQ1: Who Is Included in the Research and Who Is Left Out?

The focus of the first research question was to ascertain whose experiences are represented, and whose are either overrepresented or underrepresented, in the research on affectionate behavior and health. To address representation, we explored the sample sizes and the characteristics (age, gender, race, student status, nationality) of the samples represented in this literature.

Sample Sizes

Sample sizes ranged from 16 to 4,934 participants, with an average of 306.04 participants ($SD = 639.27$). The median sample size was 109, however, suggesting that the average was skewed by a small number of studies with vary large samples. The interquartile range of the sample sizes was calculated ($IQR = 243$) and used to identify major outliers. Any N exceeding 656 was identified as a major outlier. There were six such studies in the sample, with sample sizes ranging from 859 to 4,934. When these studies were temporarily suppressed, the average sample size was 167.58 ($SD = 157.19$), which is likely a more accurate representation of samples in the literature on affectionate communication and health. With outliers removed, the median sample size was 100 but the modal N was 30. The distribution was positively skewed (skewness = 1.12) and platykurtotic (kurtosis = .13).

Demographic Characteristics

Table 4 describes the demographic characteristics of the full sample of 26,013 participants.

Age. From sample descriptions, coders identified the minimum age, maximum age, and average age of participants when reported. Minimum age was reported in 68.6% ($n = 59$) of studies. As Table 3 reports, minimum ages ranged from 17 to 60 years, with an average of 19.92 years. The median (19) and the mode (18) were similar to the mean. The distribution was highly positively skewed (skewness = 6.07) and leptokurtotic (kurtosis = 40.21). Maximum age was reported in 67.4% ($n = 58$) of studies and ranged from 25 to 91 years, with an average of 49.47 years. The median (48.5) was similar to the mean, but the modal maximum age was 25. The distribution was non-skewed (skewness = .47) and platykurtotic (kurtosis = -.66).

Average age was reported in 84.9% ($n = 73$) of studies and ranged from 19 to 72 years, with an average of 28.91 years. The median (26.97) was similar to the mean, but the modal average age was 21.

The distribution was positively skewed (skewness = 2.32) and leptokurtotic (kurtosis = 7.10). When only those studies with entirely U.S. American samples were considered ($n = 56$), the average age ranged from 19 to 57 years, with an average of 26.72 years ($SD = 7.59$). The median age for exclusively U.S. American samples was 23.80 years, substantially younger than the median age of the U.S. population of 38.4 years (Statista, 2021). This result indicates that younger participants are being oversampled in studies on affectionate communication and health that use exclusively U.S. American samples.

Gender. Gender was coded as a function of the percentage of the sample identified as female. Gender was reported in 96.5% of studies ($n = 83$). As Table 3 indicates, the percentage female ranged from 39 to 100%, with an average of 61.05% ($SD = 17.99$; median = 50; mode = 50). The distribution was positively skewed (skewness = 1.31) and platykurtotic (kurtosis = .45).

When only those studies with entirely U.S. American samples were considered, the average percentage female was quite similar to that of the full sample, at 60.67% ($SD = 17.02$). Relative to the adult population of the United States (U.S. Census Bureau, 2020), in which approximately 50.8% of individuals identify as female, this result indicates that women are being oversampled in studies on affectionate communication and health that use exclusively U.S. American samples.

Race. Race was coded as a function of the percentage of the sample identified as white. Race was reported in 62.7% of studies ($n = 54$). As Table 3 reports, the percentage white ranged from 6 to 93%, with an average of 68.49% ($SD = 16.88$; median = 72.85; mode = 65). The distribution was negative skewed (skewness = -1.22) and mesokurtotic (kurtosis = 2.33).

When only those studies with entirely U.S. American samples were considered, the average percentage white was quite similar to that of the full sample, at 69.21% ($SD = 15.04$). In the United States, 60.1% of the population identifies as white and not Hispanic or Latinx (U.S. Census Bureau,

2019), suggesting that white participants are being oversampled in studies on affectionate communication and health that use exclusively U.S. American samples.²

Student Status

Most individual studies (82 of 86) reported whether their samples comprised students, non-students, or both. Slightly than half ($n = 46$, 56.1%) comprised non-students, whereas 23 studies (28.0%) used student samples and 13 studies (15.8%) had both students and non-students in their samples. When exclusively U.S. American studies were considered, fewer studies (45.5%) comprised non-student samples and more studies (38.2%) comprised exclusively student samples, with the percentage of samples including both students and non-students remaining similar to that of the full study at 16.4%. By comparison to the full literature on affectionate communication and health, therefore, studies recruiting entirely within the United States appear to be oversampling students.

Nationality

Two thirds of the samples (65.1%) were recruited exclusively from the United States. Multiple other studies were represented in the samples, although with substantially less frequency: Angola, Argentina, Australia, Brazil, Bulgaria, Canada, Chile, China, Columbia, Costa Rica, Egypt, Germany, India, Ireland, Israel, Japan, Mexico, Netherlands, Portugal, Romania, South Korea, Sweden, Switzerland, Trinidad and Tobago, United Arab Emirates, United Kingdom, Venezuela, and Vietnam. Given that the United States comprises approximately 4% of the world's population (Andrew, 2020), research on affectionate communication and health is substantially oversampling U.S. American participants.

Recruitment Procedure

Following a reviewer suggestion, we examined which studies recruited their samples via Amazon's Mechanical Turk (MTurk) and whether such studies offered more representative samples than studies using other recruitment procedures. Among the entire sample of studies, 14.5% employed MTurk

² As a caveat to this conclusion, few studies in this review (if any) specified the percentage of participants who identified *both* as white *and* as non-Hispanic and non-Latinx. In virtually every study reporting on participant race, only a number or percentage of participants identifying as white was reported.

and 85.5% did not. To assess representativeness, we specifically examined those studies using exclusively U.S. American samples. Among such studies, 12.5% used MTurk and 87.5% did not.

When we compared MTurk and non-MTurk studies using U.S. American samples, we found that the average age of MTurk samples was 32.12 years ($SD = 5.23$), compared to 25.86 years ($SD = 7.69$) for non-MTurk samples. This difference was statistically significant, Welch's $t(10.53) = -2.74, p = .02$ (two-tailed), $d = .96$. Although the average of the MTurk samples is still lower than the median age of the U.S. population (38.4 years; Statista, 2021), it is much closer to the median U.S. population age than is the average age of the non-MTurk samples.

The MTurk and non-MTurk samples did not significantly differ with respect to the distribution of gender or race. MTurk samples were, on average, 62.54% female ($SD = 24.10$), compared with 60.40% ($SD = 16.06$) for non-MTurk samples. Similarly, MTurk samples were, on average 68.33% white ($SD = 17.19$), compared with 69.34% ($SD = 14.93$) for non-MTurk samples. Neither difference was statistically significant, per two-tailed t -tests. We would therefore conclude that, for studies using exclusively U.S. American participants, MTurk-recruited samples were more representative of the U.S. population in age but not in gender or race.

Recruitment Year

Following a reviewer suggestion, we also compared the representativeness of the exclusively U.S. American samples based on whether the paper was published in the first half (2002-2012) or second half (2013 or later) of the sampling frame. The average age of participants was virtually identical in older ($M = 26.42, SD = 6.83$) and younger ($M = 26.92, SD = 8.18$) studies. This difference was not statistically significant, and both means are substantially younger than the median age of the U.S. American population. With respect to gender, the percentage of participants that were female was higher in older studies ($M = 63.29, SD = 20.10$) than in younger studies ($M = 58.49, SD = 13.93$). This difference was not statistically significant, and both figures over-represent female participants (relative to the U.S. American population), although such over-representation is less pronounced in younger studies. Finally, with respect to race, the percentage of participants that were white was higher in older studies ($M = 76.53, SD$

= 10.38) than in younger studies ($M = 64.42$, $SD = 15.82$), Welch's $t(45.99) = 3.20$, $p = .002$ (two-tailed), $d = .87$. Both figures over-represent white participants (relative to the U.S. American population), although such over-representation is less pronounced in younger studies.

RQ2: How Is Intersectionality Adjudicated?

The literature on affectionate behavior and health has been conducted almost exclusively from a scientific/post-positivistic perspective. None of the 69 papers or 86 individual studies surveyed takes an *explicitly* intersectionalist perspective. To determine whether any of the research in this literature could speak to intersectionalist priorities, however, we undertook a three-part systematic review.

First, using a text-search feature, we searched the complete text of all 69 papers for the terms *intersectional*, *intersectionality*, and *intersectionalist*. The search identified not a single instance of any of these terms in the 69 papers selected for inclusion in this review. Because attorney Kimberlé Crenshaw is credited with having coined the term *intersectionality* (Coaston, 2019), we similarly searched the complete text of all 69 papers for citations to her name, and no such citations were found.

Second, as part of our approach to addressing the third research question (see below), we extracted all hypotheses and research questions from the 86 individual studies selected for analysis. Among the 213 individual hypotheses or questions posed, not a single hypothesis or question was posed regarding intersectionality.

Third, regardless of whether predictions or questions of intersectionality were posed *a priori*, it is also possible that the association between affectionate communication and health is subject to statistical interaction effects, such that variance in the magnitude or direction of that association is uniquely accounted for by the interaction of, say, gender and ethnicity, or ethnicity and age. To adjudicate this possibility, we examined the results sections of all 86 individual studies to catalog significant interaction effects between two or more demographic variables on the nature of the association between affectionate behavior and health. As we examined each significant interaction, our focus was on 1) whether the independent variables in the interaction were two or more identity-related variables (such as age, sex, gender, sexual orientation, race, or ethnicity) or were experimental manipulations or other non-identity-

related variables (e.g., sex interaction with experimental condition), and 2) whether the dependent variable was purely an affection measure (e.g., how affectionate the person is), purely a health measure (e.g., how high a person's blood pressure is), or the *association* between affectionate behavior and health. As indications of intersectionality, our intention was to identify interactions between identity-related variables on the association between affectionate behavior and health. We paid attention only to interaction effects that were significant at a $< .05$ alpha level.

The 86 individual studies reported a combined total of 50 significant interaction effects. We were particularly interested in identifying significant interaction effects in which the independent variables were two or more identity-related variables and the dependent variable was a measure of the association between affectionate behavior and health. For instance, if an interaction effect found that hugging and stress recovery were more strongly correlated for Black gay people than for Black people in general or for gay people in general, this would offer at least some empirical support for the idea that, with respect to affectionate behavior and health, the intersection of identities accounts for unique variance.

Ultimately, we found no such evidence. Of the 50 interaction effects identified, not a single interaction effect featured two or more identity-related variables (age, sex, SES, gender, sexual orientation, race, or ethnicity) as independent variables. Although many health-related outcomes were featured as dependent variables (including heart rate, blood pressure, cortisol reactivity, and oxytocinergic activity, as well as depression and anxiety), no interaction featured the magnitude of the association between affectionate behavior and health as its dependent variable.³

RQ3: What Types of Questions Are Valued?

The focus of the third research question was to explore which questions about affectionate communication and health are being asked and to identify questions that have thus far been overlooked in

³ As an anonymous reviewer pointed out, it is possible that some relevant interaction effects were analyzed but not reported due to a lack of significance. When one considers that no intersectionality-oriented interaction effects were hypothesized, however, it seems reasonable to assume that such interactions were simply not tested.

the research on affectionate behavior and health. To address that question, we conducted a thematic analysis of the hypotheses and research questions represented in this literature.

Three authors culled the hypotheses and research questions from the 86 studies in the data set. These 86 studies posed 136 individual hypotheses and 77 individual research questions.⁴ A thematic analysis conducted by three authors revealed three principal categories of hypotheses and research questions. First, some predictions and questions related to *the correlation between affectionate communication and physical health indices*, including resting blood pressure, physical pain, or immunocompetence. Alen et al. (2019), for example, hypothesized that affection received from parents during childhood would predict higher resting heart rate variability for midlife adults, whereas Floyd, Hesse et al. (2007) predicted an inverse association between trait expressed affection and blood glucose (in the form of glycated hemoglobin, or HbA_{1c}).

A second, and related, category of predictions and questions related to *the correlation between affectionate communication and mental health indices*, such as anxiety, depressive symptoms, and general subjective wellness. For instance, Bernhold (2020) hypothesized that affectionate communication received from grandparents predicted lower stress, depression, and loneliness for adults, and Burleson et al. (2007) asked whether physical affection would correlate with stress and mood for middle-aged women.

The third category went beyond correlation to address *effects of affectionate behavior on physical or mental health*. Hypotheses and questions in this group may have addressed similar physical and mental health indices as those in the first two groups, yet the focus was on whether enacting affectionate communication would effect change in these indices. Ditzen et al. (2007) explored, for instance, whether physical affection between romantic partners would influence cortisol, oxytocin, and cardiovascular

⁴ When a given hypothesis predicted an effect or association on multiple outcomes (as in H1a, H2b, etc.), each proposed effect or association was counted as a separate hypothesis. We took the same approach to counting research questions.

reactions to stressors, whereas Floyd et al. (2009) hypothesized that increasing nonverbal affection in romantic relationships would have an inhibitory effect on blood lipid levels.

RQ4: From Whose Vantage Point Is the Research Being Conducted?

To address this question, we conducted an informal analysis of racial representation among study authors. The papers in our sample had a total of 42 unique first authors. Based on our personal knowledge of these authors and/or on their photographic representation on their university websites or social media (e.g., LinkedIn), we informally categorized each author as primarily white or non-white. This categorization was admittedly subjective, as it was based on our own assessment rather than on authors' self-identification. Our subjective analysis identified 32 (78.6%) authors as white and 9 (21.4%) as non-white, whereas one was unknown (no photographs were found). Although we examined first authors only, we discovered that over three-quarters were white, which may exacerbate the potential problems associated with the overrepresentation of white participants.

Discussion

This review was motivated by the goal of identifying how representative (or non-representative) research on affectionate communication and health has been thus far, and how (if at all) the research speaks to issues of intersecting identities.

Representation in Research on Affectionate Communication and Health

To describe the literature on affection and health, we noted patterns across samples and studies. Principally, our review of affection studies reveals an overrepresentation of certain types of samples. Overreliance on particular demographic groups is problematic, generally, as it limits description of lived experiences and generalizability. Specific to affection, we see an overrepresentation of exclusively U.S. samples, and when exclusively U.S. samples are considered, we find an overrepresentation of younger white female students, relative to the U.S. population. Let us contextualize these limitations first with reference to race and the concept of WEIRD samples.

White and WEIRD

Studies of affectionate communication and health have primarily reported findings from samples that are majority white. In particular, among the two-thirds of studies that included exclusively U.S. American participants, white participants were oversampled relative to the U.S. population. This naturally limits understanding and generalizability as studies overrepresent the lived experiences of white individuals. In their article discussing #CommunicationSoWhite, Chakravartty et al. (2018) concluded by noting that “knowledge production that reinforces Whiteness as its undisputed, unexamined frame is incapable of asking what we might learn from the experiences of those who have been, for decades if not centuries, dispossessed of their lands, policed, bombed, detained, indebted, and rendered illegal” (p. 262). In line with this reasoning, an overrepresentation of white samples limits our understanding of affection as it has the potential to reinforce “whiteness as its undisputed, unexamined frame.” Assumptively, this was never an intention of such work, although unconscious biases toward one’s own lived experiences have the potential to influence framing of questions and writing.

Concern for the whiteness of the samples is compounded when considering the whiteness of the authors in this research program. As reported, our analysis suggested that over three-quarters of first authors of the papers in this review are white. Although they may well represent other forms of diversity—including in sexual orientation, ability status, religion, or socioeconomic status—they may nonetheless bring a predominantly white-centric focus to the study of affectionate communication patterns and their associations with well-being. To the extent that many of the theorists represented in Table 1 also identify as white, it is likely that such a focus is also perpetuated by the theories used to frame research on affectionate communication and health.

In addition to samples that are predominately white, other demographics tend to be problematically consistent. Consider a recent editorial essay for the *Southern Journal of Communication* in which Bates (2021) was critical of communication research being WEIRD. Bates (2021), Henrich et al. (2010), Afifi and Cornejo (2020), and others have noted concerns with the overreliance on samples that are Western, educated, industrialized, rich, and democratic, the most important of which is that WEIRD samples “are not representative of most human beings” (Bates, 2021, p. 1). We believe the description of

WEIRD applies to much affection research, which consequently does not represent the lived experiences of much of the world.

The overuse of white WEIRD samples limits understanding of how affectionate communication, and the association between affectionate communication and health, vary across countries and cultures. As one exception, Mansson and Sigurðardóttir (2017) reported that U.S. Americans enacted more affectionate behavior than participants from other countries (Iceland, Denmark, and Poland; see also Mansson et al., 2016; Mansson & Sigurðardóttir, 2019). That said, their affection scales were created based on research conducted in the United States, legitimately raising the question of what role measurement played in their findings. Accordingly, then, future research of affection in non-Western and non-white samples is highly encouraged.

In addition to noting that samples are white and WEIRD, we noted additional important patterns that warrant discussion.

Lifespan, Gender, and Health

The previous discussion has focused on concerns about individuals across cultures and countries, but additional concerns about this research remain. First, how does affectionate communication operate across the lifespan? Approximately two-thirds of the samples examined in this systematic review reported an average participant age in the 20s. How do young children learn appropriate norms for affectionate communication and how might that influence their wellness? What about individuals who are unmarried, without children, widowed, divorced, or socially isolated? We cannot assume that affectionate communication operates similarly across age groups and, consequently, future studies are encouraged to help us better understand affection's implications for health across the lifespan.

Second, at least when considering the studies in our systematic review that used exclusively U.S. American samples, women were overrepresented. This is perhaps a function of the number of studies that used college students as participants, given that nearly 60% of U.S. college students are female (Erudera College News, 2021), and 63% of bachelor's degrees in the social sciences—where many affectionate communication scholars identify—go to women (American Academy of Arts & Sciences, 2021).

Nonetheless, the overrepresentation of women in affectionate communication and health research can skew results, given that women routinely report being more affectionate than men (Floyd, 2019) and given that variance in the trait-like tendency to express affection is nearly 50% heritable for women but approximately 0% heritable for men (Floyd et al., 2020). The latter observation, in particular, is relevant for the affection-health connection, insofar as the greater heritability of trait affection for women may reflect evolved health advantages to affectionate behavior for women that are not as characteristic of men, such as the ability of affection to ameliorate stress (Taylor et al., 2000).

Third, affection studies have typically not asked samples about psychological and physical health conditions that might influence the initiation, reception, and/or avoidance of affectionate behaviors, particularly touch. For instance, physical health conditions such as fibromyalgia or severe burns may make the exchange of touch painful, and sexually transmitted infections may present challenges when navigating physical intimacy and sexual touch. In addition, mental challenges such as social anxiety disorder or autism spectrum disorder may influence how receptive people are to affectionate behavior, particularly from those they do not know well. Notably, although all studies in this systematic review were explicitly about health, only Kimata (2003, 2006) and Rancourt et al. (2016) recruited participants with specified health impairments. It is therefore difficult to know whether findings identified with healthy participants would generalize to clinical populations, further limiting the generalizability of this body of research.

Representation in Questions and Hypotheses

As might be expected, most hypotheses and research questions asked how affectionate behavior is either associated with or causally related to one or more measures of physical or mental well-being. As Floyd (2019) pointed out, such a focus has been fruitful for identifying which physical and mental health outcomes show reliable associations with affectionate behavior and which do not.

Equally as informative, however, are the types of questions *not* being asked about affectionate communication and health. Save for van Raalte et al. (2020), for example, virtually no research has examined the health effects of affectionate behavior that is unwanted or unwelcome, even though

affection exchange theory is clear that affectionate expressions can be stress-inducing when they fall outside an individual's range of tolerance (see Floyd, 2006a). Similarly, little research (if any) has asked whether the salutary effects of affectionate communication depend on the type or quality of the personal relationships in which it is exchanged. Is a hug from a romantic partner or close relative more health supportive than an identical hug from a casual friend or acquaintance, for example? Few studies have explored whether individual or situational variables moderate or mediate the affection-stress association, and no studies in this systematic review asked how affectionate behavior is health-supportive for people with chronically elevated stress, such as those who are incarcerated or exposed to violence. Finally, no research in this systematic review addresses the physical or mental health correlates of affectionate communication for people with physical or mental disabilities.

The representativeness of both samples and questions in studies about social behavior and health has potential implications for understanding and addressing health disparities. That certain populations have limited access to health information or health care services, relative to other populations, is well documented (e.g., Lasser et al., 2006). If such populations, and/or their primary health concerns, are also under-represented in empirical research, this under-representation has the potential to exacerbate already-existing disparities.

Intersectionality in Research on Affectionate Communication and Health

Despite looking explicitly for evidence of intersectionalist thought, we unfortunately found none. As noted, the empirical research on affectionate communication in general—and on the association between affectionate behavior and health—reflected a markedly post-positivistic/social scientific epistemology. Interpretive or critical studies of affectionate communication—or even studies employing qualitative or rhetorical methods—are virtually unobserved (for an exception, see Mansson, 2012).

In the absence of any explicit theorizing, reasoning, or hypothesizing grounded in intersectionality, we examined empirical findings to see whether any inferences could be deduced about the affection-health relationship varying as a function of intersecting identities. Specifically, we searched for interaction effects between two or more identity-related variables (e.g., age, sexual orientation, racial

background) that would indicate that the direction and/or magnitude of the affection-health association varied when two identity characteristics were considered at once. (A hypothetical interaction might show, for example, that trait-level affection is more strongly correlated with stress reactivity for Hispanic men than for Hispanic women, non-Hispanic men, or non-Hispanic women.) Out of 50 significant interaction effects, however, not a single interaction featured a combination of identity characteristics as independent variables and the strength or direction of the affection-health connection as the dependent variable.

The intersectionalist perspective is therefore not reflected, either explicitly or implicitly, in the existing research on affectionate communication and health, yet we must avoid concluding that affection scholars omit this perspective because they consider it unimportant or uninformative. A more likely explanation is that the theories currently used to frame the research on affectionate communication and health do not naturally raise questions about the effects of social identities. As we noted above, most of the theories used in this research are bioevolutionary in nature, and a bioevolutionary theory does not naturally draw attention to the effects of social identities. Rather, the focus is on more distal causal factors and on specific physiological pathways through which a behavior contributes to wellness. These assumptions do not preclude the possibility that social identities, or their intersections, account for variance; they simply do not naturally lead to questions of this nature.

The argument could be made, then, that a systematic review focused on intersectionality is unnecessary or out of place because the theories framing this body of research do not raise questions about it. In fact, we would contend the opposite. The bioevolutionary nature of affectionate communication theories—although generative in its ability to identify pathways through which affectionate behavior supports health—has perhaps introduced a blind spot in the literature that has prevented the influence of social identities—those of participants and even those of researchers—from being adjudicated. This is problematic both from the perspective of social justice and also from the perspective of discovery. If social identities and their intersections do account for variance in the association between affectionate behavior and health, for instance, that variance is potentially being “left on the table” because the theories framing this research do not draw attention to it.

At the same time, we must also exercise caution not to assume that identities *always* intersect to influence the affection-health connection. To return to a previous example, it is entirely possible that a deaf gay man experiences challenges with acceptance into the Deaf community because of his sexuality and acceptance into the gay community because of his deafness. As intersectionality would point out, then, his challenges are fully captured neither by his sexuality nor by his deafness, but only by their interaction. That argument does not automatically imply, however, that the association between affectionate communication and health is likewise different for someone who is both gay and deaf than for those who belong to one community but not the other. That is ultimately an empirical question, and although the existing literature on the affection-health connection offers no empirical support for that notion, neither does it provide contradictory evidence. It is therefore best described as agnostic toward the idea that identities intersect in ways that uniquely influence the association between affectionate behavior and health.

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Table 1*Theories Tested in Research Included in Review*

Rank	Theory/Model	Frequency
1.	Affection exchange theory (Floyd, 2006a)	26
2.	Affectionate touch model (Jakubiak & Feeney, 2017)	5
3.	Attachment theory (Bowlby, 1969)	4
4.	Social baseline theory (Coan, 2008)	3
5.	Stress buffering hypothesis (Cohen & Wills, 1985)/developmental stress buffering model (Chen et al., 2017)	2
6.	Need to belong (Baumeister & Leary, 1995)	1
7.	Selective investment theory (Brown & Brown, 2006)	1
8.	Biopsychosocial model (Gatchel et al., 2007)	1
9.	Biobehavioral model of romantic love (Diamond, 2003)	1
10.	Risk regulation model (Murray et al., 2006)	1
11.	Family communication patterns theory (Koerner & Fitzpatrick, 2002)	1
12.	Suffocation model (Finkel et al., 2015)	1
13.	Polyvagal theory (Porges, 2011)	1

Note. Not all studies included in this review were explicitly theory-based.

Table 2*Intercoder Reliability Estimates, Based on Krippendorff's Alpha, for Coded Characteristics*

Characteristic	Alpha
Total sample size	.98
Low age	.99
High age	.87
Average age	.94
Percentage female	.75
Percentage white	.89
Students/non-students	.97
Percentage U.S. American	.89
Countries other than U.S.	1.00
Measurement of affectionate communication	.95
Health outcomes	.97

Table 3*Studies Included in the Systematic Review*

Study	<i>N</i>	Health Outcome(s)
1 Alen et al. (2019)	1255	Heart rate variability, self-reported health
2 Aloia & Brecht (2017)	217	Psychological well-being
3 Bernhold (2020)	401	Depressive symptoms, stress, loneliness
4 Brown et al. (2009)	160	Progesterone
5 Burleson et al. (2007)	58	Affect, stress
6 Cohen et al. (2015)	406	Common cold symptoms
7 Debrot, Schoebi et al. (2013)	204	Affect
8 Debrot, Meuwly et al. (2017) Study 1	335	Life satisfaction, positive affect
9 Debrot, Meuwly et al. (2017) Study 2	148	Life satisfaction, positive affect
10 Debrot, Meuwly et al. (2017) Study 3	212	Life satisfaction, positive affect
11 Debrot, Stellar et al. (2020) Study 1	1604	Subjective well-being
12 Debrot, Stellar et al. (2020) Study 2	132	Subjective well-being, positive affect

13	Debrot, Stellar et al. (2020) Study 3	196	Positive affect
14	Debrot, Klumb et al. (2021)	140	Affect, inter-beat interval, heart rate variability
15	Debrot & Pomini (2019)	331	Depressive symptoms
16	Ditzen, Neumann et al. (2007)	67	Stress reactivity
17	Ditzen, Hoppmann et al. (2008)	102	Stress hormones, sleep, pain
18	Dumont (2019)	134	Life satisfaction
19	Feldman et al. (2010)	53	Cortisol reactivity, vagal tone
20	Figueiredo, Field et al. (2008)	43	Anxiety, depressive symptoms
21	Figueiredo, Canário et al. (2018)	258	Anxiety, depressive symptoms
22	Floyd (2002)	109	Mental well-being
23	Floyd (2006)	20	Cortisol diurnal rhythm
24	Floyd (2016) Study 1	572	Sleep quality, pain
25	Floyd (2016) Study 2	399	Sleep quality, pain
26	Floyd (2016) Study 3	397	Sleep quality, pain
27	Floyd, Boren et al. (2009)	52	Blood lipids
28	Floyd, Hess et al. (2005) Study 2	64	Mental well-being
29	Floyd, Hess et al. (2005) Study 3	48	Mental well-being
30	Floyd, Hesse et al. (2007) Study 1	48	Heart rate, blood pressure

31	Floyd, Hesse et al. (2007) Study 2	30	Glycated hemoglobin
32	Floyd, Hesse et al. (2014)	52	Epstein Barr virus antibodies
33	Floyd, Mikkelson, Hesse et al. (2007) Study 1	34	Blood lipids
34	Floyd, Mikkelson, Hesse et al. (2007) Study 2	30	Blood lipids
35	Floyd, Mikkelson, Tafoya et al. (2007a)	30	Cortisol reactivity
36	Floyd, Mikkelson, Tafoya et al. (2007b)	30	Heart rate, cortisol reactivity
37	Floyd, Pauley et al. (2010)	100	Oxytocin reactivity
38	Floyd, Pauley et al. (2014)	39	Heart rate, immunoglobulins, NK cell toxicity
39	Floyd, Pauley et al. (2018)	39	Immunoglobulins, lymphocytes, NK cells
40	Floyd & Riforgiate (2008)	40	Cortisol, DHEA-S
41	Goldstein et al. (2016) Study 1	46	Pain
42	Goldstein et al. (2016) Study 2	40	Pain
43	Gonzaga et al. (2006)	26	Oxytocin reactivity
44	Grewen, Anderson et al. (2003)	183	Heart rate, blood pressure
45	Grewen, Girdler et al. (2005)	76	Oxytocin, norepinephrine, cortisol, blood pressure
46	Hesse & Floyd (2008)	349	Stress, depressive symptoms
47	Hesse et al. (2017)	263	Self-esteem, life satisfaction
48	Hesse & Mikkelson (2021) Study 1	276	Self-esteem, stress, depressive symptoms, general health

49	Hesse & Mikkelson (2021) Study 3	269	Life satisfaction, happiness, loneliness
50	Holt-Lundstad, Birmingham et al. (2008)	68	Oxytocin, alpha amylase, cortisol
51	Holt-Lundstad, Birmingham et al. (2011)	68	Oxytocin
52	Horan & Booth-Butterfield (2011)	99	Heart rate, blood pressure
53	Jakubiak & Feeney (2016) Study 1	95	Pain
54	Jakubiak & Feeney (2016) Study 2	139	Pain
55	Jakubiak & Feeney (2018)	420	Stress, self-esteem
56	Jakubiak & Feeney (2019) Study 1	280	Stress
57	Jakubiak & Feeney (2019) Study 2a	501	Stress
58	Jakubiak & Feeney (2019) Study 2b	479	Stress
59	Jorm et al. (2003)	4934	Anxiety, depressive symptoms
60	Kimata (2003)	90	Allergic reactions
61	Kimata (2006)	48	Allergic reactions
62	Koshar (2018)	155	Anxiety, stress, depressive symptoms
63	Light et al. (2005)	59	Blood pressure, heart rate
64	Liu et al. (2021)	64	Stress
65	Luerssen et al. (2017) Study 1	118	Progesterone
66	Luerssen et al. (2017) Study 2	100	Positive affect

67	Mansson (2013)	214	Stress, depressive symptoms, loneliness
68	Mansson (2014)	104	Stress, loneliness, general mental health
69	Maselko et al. (2010)	482	Anxiety
70	Master et al. (2009)	25	Pain
71	Matsunaga et al. (2009)	16	Serum proteins
72	Pauley et al. (2014)	60	Cortisol, blood pressure, heart rate
73	Polcari et al. (2014)	2518	Psychiatric symptoms
74	Rancourt et al. (2016)	286	Negative affect
75	Remon-Ore (2020)	509	Stress, anxiety, depressive symptoms, life satisfaction
76	Schrodt et al. (2007)	567	Stress, self-esteem, general mental health
77	Sumioka et al. (2013)	18	Cortisol
78	Teixeira e Silva et al. (2020)	291	Stress
79	Tissieres (2021) Study 1	1604	Affect, life satisfaction
80	Tissieres (2021) Study 2	859	Affect, life satisfaction
81	Triscoli et al. (2017) Study 1	40	Heart rate
82	Triscoli et al. (2017) Study 2	20	Heart rate
83	van Raalte & Floyd (2020)	20	Proinflammatory cytokines
84	van Raalte et al. (2020)	532	Stress, anxiety

85	von Mohr et al. (2018)	32	Pain
86	Zepeda-Goncen & Sánchez-Aragón (2020)	388	Healthy behavior

Table 4*Sample Demographic Characteristics (N = 26,013)*

Characteristic	Min	Max	<i>M</i>	<i>SD</i>
Low age	17	60	19.92	5.84
High age	25	91	49.47	16.42
Average age	19	72	28.91	9.65
Percentage white	6	93	68.49	16.88
Percentage female	39	100	61.05	17.99

Figure 1

PRISMA Flow Diagram of Selection Process

