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Exploring the associations between unwanted affection, stress, and anxiety

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Abstract

Although giving and receiving affection are beneficial, the benefits often depend on who is providing the affection and in what context. Some affectionate expressions may even reduce well-being. This mixed-method study examined perceptions of unwanted affection and its relationship to stress and anxiety. Participants described a memory of unwanted affection and their reactions to it. Additionally, participants reported on their stress, somatic anxiety, and cognitive anxiety. Thematic analyses revealed that expressions of unwanted affection ranged in verbal (e.g., disclosure rate, saying "I love you") or nonverbal (e.g., hugs, handholding) behaviors and participants responded by explicit rejecting the affection, reduced/stopped contact with the person, and ignoring the affection. Feelings reflecting the perceived negativity of the event were related to higher stress, somatic, and cognitive anxiety. Generally, results indicated that retrospective cognitive anxiety and stress were worse when experiencing unwanted affection from well-known partners (e.g., romantic partners) than from strangers. Conversely, the perceived negativity of the recalled unwanted affectionate event tended to worsen with lesser known partners (e.g., strangers, acquaintances).

Keywords

Affection, affection exchange theory, anxiety, stress, unwanted affection

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Sharing affection has psychological, physiological, and relational benefits (Floyd, 2019), and healthy affectionate touch is critical for human social and physiological development (Field, 2014; Floyd, 2006). Highly affectionate people report less depression and stress, higher self-esteem, happiness, and relationship success and satisfaction, compared to their less-affectionate counterparts (Floyd, 2002). Additionally, strong links have been identified between affection and physical health (Floyd et al., 2009). For example, more frequent hugging has been associated with lower susceptibility to rhinovirus (Cohen et al., 2015), and lower blood pressure and higher oxytocin for premenopausal women (Light et al., 2005).

Given these advantages, one might conclude that *all* affectionate communication is beneficial, but that is not the case. Both the person providing affection and the context in which it is offered can influence how receivers react (Floyd & Morman, 1997; Guerrero & Andersen, 1991). Consequently, some affectionate behaviors are interpreted negatively. Individuals have expectations for interpersonal exchanges (Burgoon, 1993) and personal limits for how much affection they prefer (Floyd, 2006). Because people differ in their tolerances for affection (Floyd, 2019), and because receiving affection is influenced by relationship type and context, violations of personal limits can be consequential. For instance, unwanted affectionate behavior can be interpreted as sexual harassment or sexual abuse (Floyd & Pauley, 2011). The goal of this study is to increase understanding of how unwanted affection is expressed, the responses to those expressions, and their health implications.

Unwanted affection

Floyd and Morman (1998) defined *affection* as "an internal psychological state of positive, often intimate regard for another" (p. 145). Although substantial literature indicates the benefits of affection and affectionate communication (Floyd, 2019), affection can also have negative effects (Floyd & Pauley, 2011; Gordon et al., 2005). For instance, affectionate expressions are evaluated more negatively in emotionally neutral contexts than in emotionally charged contexts (Floyd & Morman, 1997). Affectionate expressions can threaten face needs (Erbert & Floyd, 2004) and covary with compromised immunocompetence (Floyd et al., 2014). Additionally, when affection is perceived as excessive, it is associated with impaired relational satisfaction (Hesse et al., 2018).

What often discriminates beneficial from problematic affectionate behaviors is the extent to which they are perceived as welcome. Whereas welcome affection can strengthen relational bonds (van Raalte et al., 2019), unwanted or inappropriate affection can incite "confusion, frustration, and in some extreme cases, fear" (Floyd & Pauley, 2011, p. 146). Interactions forced upon a recipient, regardless of the original intent, can produce negative emotional responses (Dunn, 1999). Specifically, unwelcome affectionate advances, and even ambiguous or relatively minor physical touch (Gordon et al., 2005), can constitute sexual harassment (Kapusta, 2018). In fact, affectionate touch has been banned under zero-tolerance policies in many schools and workplaces (Timberg, 2015). Regardless of where the attention lands on a continuum of severe to minor, or from whom it comes, a person's *perceived* experience of unwanted affection is influential in determining its effects.

Counterintuitively, not all unwanted behavior produces negative outcomes (Burgoon, 1993). For example, in examples of forcible interaction (including pestering and stalking),

women reported a range of negative and positive emotional responses, depending on the context and history with the partner (Dunn, 1999). Some women who leave long-term abusive relationships report stronger resilience and emotional growth 1–5 years afterward (Anderson et al., 2012). Similarly, a small sample of adult women reported some perceived benefits from their history of child sexual abuse, such as increased knowledge of child sexual abuse and protecting other children (McMillen et al., 1995). These examples, however, present extreme violations, and much research has established the short- and long-term negative effects of experiencing such trauma (Maniglio, 2009).

The sex composition of a relationship also influences how affectionate expressions are perceived (Gordon et al., 2005). Because women typically communicate more affection than men (Shuntich & Shapiro, 1991; Sprecher & Sedikides, 1993), affectionate communication is perceived as less appropriate for men than for women, and less appropriate for male-male dyads than for female-female or mixed-sex pairs (Floyd, 1997). Consequently, affection expressed by men, especially to other men, can be viewed as a negative expectancy violation, engendering negative perceptions of the communicators (Morman & Floyd, 1998).

Regardless of motivations, affectionate communication can be risky, disingenuous, and disadvantageous depending on the context, relational history, and communicators involved (Goodboy et al., 2012; Lee & Guerrero, 2001). By receiving affection, individuals may feel obligated to reciprocate, even if they do not wish to (Baumeister et al., 1993). Receiving affection can also create relational boundary ambiguity. For example, expressions of affection (e.g., saying "I love you") can serve as relational markers of intimacy, but if those expressions are not expected or reciprocated, the nature of the relationship may become uncertain. Affectionate expressions may also be perceived as attempts to manipulate (Horan & Booth-Butterfield, 2013).

Consequently, the interpretation of unwanted intimate expressions is complex and can depend on many factors such as relational history, situational context, personality, culture, sex composition, and type of message (Andersen, 1998; Henningsen et al., 2006). Thus far, however, most work on unwanted affectionate behaviors has focused on specific contexts and relational types. The current study uses a mixed-method approach to explore the recollections of perceived unwanted affection—beyond what previous studies have explored—as well as aspects of well-being. To identify more completely which specific affection behaviors are considered unwanted and how people react to such expressions, we ask:

RQ1: How do recipients perceive unwanted affection is expressed?
RQ2: How do receivers of unwanted affection react to such expressions?

Theoretical considerations

Several theories can aid understanding of how unwanted affectionate messages are experienced. Expectancy violation theory (EVT: Burgoon, 1993; Burgoon & Hale, 1988) explains how deviations from anticipated behaviors are interpreted on factors such as intensity and valence (Afifi & Metts, 1998). Such violations have emotional and relational effects and have been examined in several relationship types, such as close

romantic relationships (Bevan, 2003), online friendships (Bevan et al., 2014), and student host families (Rodriguez & Chornet-Roses, 2014).

Cognitive valence theory (CVT: Andersen, 1998) also considers the evaluations of behavioral changes in relationships and focuses specifically on intimacy and immediacy behaviors. Both EVT and CVT focus on *immediacy* changes in relationships, but one theory focuses specifically on *affection* and is best suited for this study. Affection exchange theory (AET; Floyd, 2006, 2019) is a comprehensive theory of affectionate communication that seeks to explain why affection is connected to relational quality and psychological and physiological well-being.

Grounded in a bio-evolutionary perspective, AET assumes that humans have innate and superordinate drives to survive and procreate (Floyd, 2006). According to the theory, affection contributes to human survival and procreation through the development of pair bonds and access to useful resources. AET's heuristic value is evidenced by an exponential growth of research on affection in the last decade (see Floyd, 2019), with a significant focus of physiological outcomes (e.g., Floyd et al., 2018). Using AET, affectionate communication has been examined across multiple relationships (e.g., Floyd & Morman, 2001; Horan & Booth-Butterfield, 2013) and with a variety of methodologies.

Two propositions of AET are relevant to this study. The fourth proposition asserts that humans differ in their needs for expressing and receiving affection (Floyd, 2006). Interpretation of received affection varies, and consequently influences health and wellness. For example, a highly touch-avoidant person (Andersen & Leibowitz, 1978) may react more strongly (Floyd & Morman, 1997) to unwanted touch than a less touch-avoidant person. Thus, the magnitude of perceived negativity of unwanted affection likely covaries with well-being.

The fifth proposition of AET asserts that exceeding one's optimal tolerance can be aversive to health through activation of the sympathetic nervous system and cognitive appraisals (Floyd, 2019, p. 34). Although self-reports of physiological well-being can provide insight, research in the last decade has increasingly employed objective health markers. For example, receiving hugs has been associated with higher oxytocin and lower blood pressure (Light et al., 2005), less-severe flu symptoms (Cohen et al., 2015), and lower cortisol (Sumioka et al., 2013).

Tracking physiological responses to manipulated expressions of unwanted affection would be ethically tenuous, given the psychological and physical distress that unwelcomed affectionate behaviors can induce. Thus, an alternative approach involves examining self-reports of an individual's health state. The selected outcomes for this study are stress and anxiety (Aloia & Brecht, 2017).[1] Each provides important insight into an aspect of an individual's psychological and physiological well-being.

Stress occurs when people perceive they lack the coping mechanisms to respond to the stressors in their environment (Cohen et al., 1983; Lazarus, 1966), which can include challenging interactions, major life events, or daily hassles (Folkman et al., 1986). When such negative psychological evaluations (Cohen et al., 2016) occur, the sympathetic nervous system is activated (Everly & Lating, 2013). Stress has been connected to many physiological ailments, such as weakened immunocompetence (Dhabhar, 2014), increased blood pressure (Zakowski et al., 1992), and several diseases (for a review, see Cohen et al., 2007).

Anxiety is characterized by chronic worrying (Barlow et al., 1986) and has both cognitive and somatic dimensions. The cognitive dimension reflects "symptoms that are associated more directly with thought processes, including worry, intrusive thoughts, and lack of concentration" (Ree et al., 2008, p. 314). The somatic dimension reflects physiological symptoms such as increased heart rate, tense or weak muscles, dizziness, or fast and shallow breathing (Ree et al., 2008; Sainsbury & Gibson, 1954).

Most research finds a beneficial effect of affection on stress and anxiety. For example, retrospective reports of affection from parents have been connected to lower anxiety scores in adults (Jorm et al., 2003), and receiving supportive and verbal affection from a partner has been linked to lower cortisol reactivity to stressors (Floyd et al., 2007). Conversely, being deprived of affection is associated with higher stress and anxiety scores (Floyd, 2014). Importantly, these forms of affection are often studied within established relationships, meaning they likely also conform to participants' ranges of optimal tolerance. The focus of this study, however, is the stress and anxiety of unwanted affection received in *any* relationship.

As collecting biomarkers relevant to retrospectively recalled instances of unwanted affection is unfeasible, and because anxiety and stress have been linked to physiological reactions (Cacioppo et al., 2000; Ree et al., 2008), self-report measures of anxiety and stress are employed. Because individuals vary in their tolerances for affection (Floyd, 2019), and the perceived severity of unwanted affection has many potential influences (Henningsen et al., 2006), we predict:

H1: Perceived negativity of a recalled unwanted affection event is associated with greater stress and anxiety.

Interpretations of affectionate expressions depend on the relationship and context in which they occur (Floyd & Morman, 1997). For example, an intimate kiss would be interpreted differently if received from a romantic partner than from a stranger. However, receiving unwanted affection even from a romantic partner might lead to questions about how well the partner understands one's personal affection tolerances. In an extreme case, unwanted affection in the form of sexual assault from a family member can cause intense distress. In contrast, receiving unwanted affection from a stranger (e.g., inappropriate touching or being called a pet name) can also be distressing.

Given the range of interpretation dependent on context and relationship, it is reasonable to predict that relationship type will account for some variance in the perceived negativity of an unwanted affectionate expression as well as the subsequent stress and anxiety outcomes. Thus, we propose:

H2: Perceived event negativity, stress, and anxiety differ by relationship type.

Method

Participants and procedures

Following institutional review board approval, an online questionnaire was sent to communication undergraduate students at a large university in the southwestern United

States. Extra credit was provided at the discretion of the instructor. A total of 772 students initially participated in the study, but 233 participants were removed because they left a majority (75%+) of their survey responses blank and 7 participants were removed because their responses were uninterpretable.[2] This left an effective sample size of 532. Participants averaged 19.35 years in age ($SD = 1.58$ years) and were relatively equally divided between men ($n = 274$) and women ($n = 253$), with five not reporting their sex.[3] Participants were mainly heterosexual ($n = 495$), followed by bisexual ($n = 15$), homosexual ($n = 13$), and pansexual ($n = 6$); three participants did not report their sexual orientation. The majority of participants indicated Caucasian ethnicity ($n = 344$), followed by Asian ($n = 56$), Hispanic/Latino ($n = 68$), African American ($n = 20$), mixed ($n = 23$), and the remainder indicated they were "other," "Native American," "Pacific Islander," "Arabic," "Middle Eastern," or did not report their ethnicity. Finally, participants were freshman ($n = 314$), sophomores ($n = 100$), juniors ($n = 75$), or seniors ($n = 38$), with one graduate student and four failing to report their school year.

Participants reported on interactions with a friend ($n = 158$), an acquaintance ($n = 107$), a current romantic partner ($n = 60$), a family member ($n = 56$), an ex-romantic partner ($n = 51$), a stranger ($n = 31$), or a classmate/coworker ($n = 32$), and 37 did not report the nature of the relationship. The recalled event occurred, on average, 5.22 months previously ($SD = 12.09$ months).

Instrumentation

Event description. Participants were provided a definition of affection (Floyd & Morman, 1998) and were told that the study examined expressions of unwanted affection. Participants were instructed to recall a recent time when they received unwanted affection and to keep that situation in mind when answering the open-ended questions.

Participants were first asked "Who was involved? (e.g., romantic partner, family member, stranger, coworker, etc.)"; "Where did this happen? (e.g., at home, at school, at the mall . . .)"; and, "Approximately how long ago did this happen?" To address our research questions, participants were asked "What did this person say or do to make you feel uncomfortable? Please describe this in as much detail as possible"; "How did you react? What did you say and/or do?"[4]

Anxiety. The state-trait inventory for cognitive and somatic anxiety scale (STICSA: Ree et al., 2008) assessed participants' anxiety during the event they recalled. The STICSA included 21 items rated on a scale from 1 (*strongly disagree*) to 5 (*strongly agree*). Of the 21 items, 10 items reflect a cognitive anxiety score and 11 items reflect a somatic anxiety score. Both sub-scales were reliable (cognitive: $\alpha = .90$; somatic: $\alpha = .93$). See Table 1 for means, standard deviations, and intercorrelations for all study variables.

Stress. The perceived stress scale (PSS: Cohen et al., 1983) assessed how often participants experienced negative stress during the event they described. The PSS included 10 items rated on a scale from 1 (*never*) to 5 (*very often*). The scale was reliable, $\alpha = 77$.

Table 1. Descriptive statistics and correlations for study variables.

Measure	1	2	3	4	*M*	*SD*	α
Event Negativity	—	.28	.33	.34	4.17	1.61	.79
Somatic Anxiety		—	.68	.58	1.93	.89	.93
Cognitive Anxiety			—	.64	2.28	1.09	.90
(1), (2), (3), (4) Stress				—	2.47	.92	.77

Note. All correlations are significant at the .001 level (one-tailed).

Event negativity. Three items were developed to measure the perceived negativity of the recalled unwanted affection event. The items were measured on a scale from 1 (*strongly disagree*) to 7 (*strongly agree*) and included "I felt very stressed," "I felt extremely uncomfortable," and "I had a lot of negative feelings." Because the first item was worded in such a way that overlaps with the stress scale, it was dropped from the measure.[5] The scale was reliable, $\alpha = .79$.

Thematic analysis description

Given the large sample size for the open-ended responses, three researchers worked on the coding process. To begin, two researchers independently read 246 responses to generate an initial set of reoccurring themes in the open-ended data (Saldana, 2015).[6] The initial priority was to begin "winnowing themes to a manageable few" (Ryan & Bernard, 2003, p. 85). Salient repetition was indicative of a theme and idiosyncratic responses were originally located in either an unclassified or other category (Saldana, 2015).

After the initial set of reoccurring themes were established, three researchers (the original two coders and a third person) met to discuss the coding procedures. In this meeting, a broad preliminary codebook was established (Tracy, 2012). Using the preliminary codebook, the three researchers independently coded the first 200 responses of two of the three open-ended questions. Specifically, the first researcher coded the first 200 responses of questions 1 and 2; the second researcher coded the first 200 responses of questions 2 and 3; and the third researcher coded the first 200 responses of questions 1 and 3. Percentage agreements for the categories were calculated and it became clear that the preliminary codebook was too broad and sub-themes were identified.

The three researchers reconvened to establish more precise codes and agreed upon a master codebook. Because of time availability of the researchers, the first two researchers (who generated the initial set of reoccurring themes) re-coded the first 200 responses for all three RQs. Kappa coefficients (Cohen, 1960) were respectable for the first (.72–.82) and second (.72–.86) open-ended questions. Finally, the remaining open-ended responses were split evenly between two researchers.

Results

Thematic analysis

The first research question asked how unwanted affection was expressed. To answer this, participants described what occurred during their recalled unwanted affection event.

Unsurprisingly, responses to this question were coded into a *nonverbal* category that described unwanted affection related to haptic, proxemics, oculesic, and chronemics behaviors. Responses were also coded into a *verbal* category that covered personal disclosure violations, too frequent contact, the use of pet names, and saying "I love you." The remaining responses that were not clearly identified as either verbal or nonverbal were tagged as *undifferentiated expressions* and covered responses such as being given gifts, insincere/deceptive expressions, romantic intent, affection tolerance, and public displays of affection. For the full thematic categories, exemplars, and quantitative information on the open-ended questions, refer to Table 2.

In response to the second research question, participants described how they reacted to the unwanted affection event. Responses were coded into three major categories: *explicit rejection, reduced/stopped contact*, and *ignored the affection*.

Hypothesis tests

Before testing the hypotheses, a confirmatory factory analysis (CFA) for all quantitative measures in the study was conducted through AMOS in SPSS. Several indices evaluated model fit. These indices included comparative fit index (CFI) wherein values >.95 indicate excellent fit (Hu & Bentler, 1999); parsimony adjusted CFI wherein >.8 indicates excellent fit (James et al., 1982); χ^2/df wherein values <3.0 indicate excellent fit (Schumaker & Lomax, 2004); standardized root mean square residual (SRMR) wherein values <.08 indicate excellent fit (Hu & Bentler, 1999); the root mean square error of approximate (RMSEA) wherein values <.06 indicate excellent fit (Browne & Cudek, 1993; Hu & Bentler, 1999); and the Hoelter's value wherein >200 indicates excellent fit (Hoelter, 1983; Hu & Bentler, 1999).

Fit for the first measurement model was poor-moderate, CFI = .81; PCFI = .75; χ^2/df = 4.76; SRMR = .07; RMSEA = .08; Hoelter = 124 (.05) and 129 (.01).[7] Fit for the second measurement model was moderate, CFI = .93; PCFI = .80; χ^2/df = 3.68; SRMR = .05; RMSEA = .07; Hoelter = 172 (.05) and 184 (.01).[8] Fit for the third and final model was excellent, CFI = .94; PCFI = .81; χ^2/df = 3.07; SRMR = .05; RMSEA = .06; Hoelter = 206 (.05) and 221 (.01).[9]

The first hypothesis predicted that negatively perceived recollections of unwanted affection are associated with worse stress and anxiety scores. To test this prediction, a one-tailed Pearson correlation test was conducted.[10] The mean score for event negativity was significantly and positively associated with cognitive anxiety, $r(346) = .33$, $p = .001$, somatic anxiety, $r(345) = .28$, $p = .001$, and stress, $r(346) = .35$, $p = .001$ (see Table 1). The first hypothesis is supported.

The second hypothesis predicted that perceived event negativity, stress, and anxiety differs by relationship type. Although the time-lapse between the unwanted affection event and the recall description is relatively similar to past research (Horan & Dillow, 2009), the standard deviation for the recall is fairly large (about 12 months). Thus, the average score for how long ago in months the event occurred was tested as a potential control variable. How long ago the event occurred in months was significantly correlated with event negativity, $r(345) = .13$, $p = .02$, and with somatic anxiety, $r(527) = .13$, $p = .004$, but not with cognitive anxiety, $r(526) = .08$, $p = .07$, or stress, $r(529) = .09$, $p = .05$.

Table 2. Thematic categories.

Codes	Exemplars	Frequency, *n* (%)
Q1. What did this person say or do to make you feel uncomfortable?		
Nonverbal		296 (55)
Haptics	"She kept on touching my arm and hugging which made me uncomfortable."	
Proxemics/Oculesics	"Dancing too close and making too much eye contact, obnoxiously frequent glancing over at me."	
Chronemics	"He wanted to hang out ALL the time."	
Verbal		244 (45)
Personal Disclosure Violations	"This person disclosed very private information to me . . . ."	
Frequency of Contact	"Too frequent texts of affection or just to check in."	
Pet Names	" . . . called me a sexy little thing."	
Saying "I love you"	"He told me he loved me after only two weeks of dating."	
Undifferentiated Expressions		124 (23)
Romantic Intent	"It wasn't anything she said or did, but it was that she was/is very interested in me but the feeling was not mutual."	
Public Displays of Affection	"They were conducting too much PDA in public."	
Gifts	"Bought me a bunch of gifts after me and my girlfriend broke up."	
Insincere/Deceptive-Expressions	"They were over excited with everything I did to the point where it almost seemed fake."	
Affection Tolerance	"Smothered me."	
Q2. How did you react? What did you say and/or do?		
Explicit Rejection	"I told her to please stop."	203 (38)
Reduced/Stop Contact	"I leaned away from the touch and started to distance myself from the person."	156 (29)
Ignored Affection	"I pretended it did not bother me."	160 (30)

Note. The sample size was $n = 532$. Frequency of categories may sum to a score higher than the sample size as some participants were coded into several categories. The second open-ended question had $n = 29$ (5%) responses that could not be coded into one of the thematic categories.

Tests on the outcome variables were conducted using a series of analysis of covariance (ANCOVA) with relationship type as the fixed factor; event negativity, cognitive anxiety, somatic anxiety, and stress as the dependent variables; and how long ago the event occurred as a covariate. Following only significant ANCOVA results, Tukey-HSD post hoc tests were performed.

Controlling for how long ago the event occurred, the ANCOVAs revealed a significant main effect of relationship type on event negativity, $F(6, 329) = 4.32$, $p < .001$, partial $\eta^2 = .07$; cognitive anxiety, $F(6, 490) = 3.45$, $p = .002$, partial $\eta^2 = .04$; and stress, $F(6, 493) = 3.23$, $p = .004$, partial $\eta^2 = .04$. There was no significant main effect of relationship type on somatic anxiety, $F(6, 491) = 2.01$, $p = .06$, partial $\eta^2 = .02$.

Table 3. Mean values of study outcomes by relationship type.

Relationship type	Event negativity	Cognitive anxiety	Stress
Stranger	4.38_{ab}	1.85_{a}	2.19_{a}
Work Colleague/Classmate	4.56_{b}	1.96_{ab}	2.48_{ab}
Family Member	2.10_{a}	2.06_{ab}	2.47_{ab}
Acquaintance	4.49_{b}	2.27_{abc}	2.31_{a}
Friend	4.01_{ab}	2.31_{abc}	2.44_{ab}
Current Romantic Partner	4.02_{ab}	2.53_{bc}	2.69_{ab}
Ex-Romantic Partner	4.79_{b}	2.71_{c}	2.88_{b}

Note. Within columns, means lacking a common subscript differed significantly ($p < .05$).

Post-hoc analyses (see Table 3) revealed that event negativity, cognitive anxiety, and stress scores were the highest for those reporting on an ex romantic partner. In general, the post-hoc results indicated that the cognitive anxiety and stress outcomes were more severe with well-known partners. Specifically, cognitive anxiety and stress scores were significantly worse for those reporting on an ex romantic partner as compared to a stranger (the lowest cognitive anxiety and stress scores). In contrast, the event negativity means across relationship types tend to worsen with lesser known partners (i.e., strangers, acquaintance, and work colleagues/classmates).

Discussion

Despite overwhelming evidence that it benefits health (Cohen et al., 2015), affectionate communication also has a dark side (Floyd & Pauley, 2011). To explore potential disadvantages of unwanted affection, the current study catalogued expressions of unwanted affection across relationship types and examined their associations with stress and anxiety.

Our first research question asked which affectionate expressions are unwanted. Participants implicated three nonverbal behaviors (haptics, proxemics/oculesics, chronemics), four verbal expressions (disclosures, frequency of contact, use of pet names, and saying "I love you"), and five undifferentiated expressions (unrequited romantic interest, PDAs, gifts, insincere/deceptive affection, and affection tolerance cues). More than half the participants described nonverbal interactions, which are generally perceived as more spontaneous or unintentional than verbal behaviors. Such expressions may have been perceived as negative expectancy violations (Burgoon & Walther, 1990), and consequently deemed undesirable.

Some research has already identified negative consequences of unwelcomed touch (e.g., Burgoon & Walther, 1990; Floyd, 1999). For example, touching another's face or waist are seen as flirtatious and inappropriate in the workplace (Lee & Guerrero, 2001). Similarly, hugs are evaluated more negatively depending on their form, duration, and participants (Floyd, 1999). In the current study, however, asking participants to fully describe the unwanted affection event allowed for a richer understanding of other, and sometimes overlapping, nonverbal cues. Toward that end, participants also described

unwanted nonverbal expressions of eye contact (Tipples et al., 2013), proximity (Filipe & Sommer, 2017), and chronemics (Kalman & Rafaeli, 2010).

Other participants focused on what was said during the unwanted affectionate event. For instance, some described instances of receiving personal disclosures too quickly. Social penetration theory (Altman & Taylor, 1973) explains that as relationships develop, personal disclosure becomes more intimate. For some participants in our study, however, personal disclosure occurred too quickly, resulting in the disclosure being evaluated as unwanted (Laurenceau et al., 1998). These results underscore the fact that when unwanted affectionate behavior occurs, it is not exclusively haptic in nature. Whereas touch is sometimes equated with affectionate behavior (Gulledge et al., 2003), these findings illustrate that unwanted affection can occur in multiple nonverbal ways, some of which are haptic and others of which are not.

Moreover, participants' narratives included descriptions of unwanted public displays of affection and receiving insincere or deception affection. Deceptive affectionate messages (Horan & Booth-Butterfield, 2011) have been established as both a potentially beneficial (Horan & Booth-Butterfield, 2013) and potentially harmful (Bennett & Denes, 2019) form of affection. Other descriptions directly support AET's fourth proposition regarding the predicted variance in tolerance for affection (Floyd, 2006, 2019); for example, some reported: "I'm not an affectionate person" or the affection they received was "too much."

The second research question asked how participants reacted to expressions of unwanted affection. Common sense suggests that receiving unwelcomed affection prompts individuals to ask the communicator to stop and/or to avoid future interaction with that person, and some participants reported these reactions. Others, however, reported simply ignoring the affectionate behavior and allowing it to continue. The latter response is potentially concerning, insofar as it may encourage additional unwelcomed expressions, compounding recipients' distress. Analogously, ignoring sexual harassment is generally ineffective at curbing it (see Gruber & Smith, 1995), yet barriers impede more proactive responses, including the fear of not being believed, concerns over confidentiality, and a perception that nothing will be done (e.g., Mengeling et al., 2014; Sable et al., 2006). Important goals for future research, therefore, include understanding why unwelcome affection is ignored rather than stopped and what effect that decision has on the communicator's future behaviors.

Finally, this study illuminates stress and anxiety implications of unwanted affection. The first hypothesis predicted that negativity of recalled unwanted affection is associated with worse stress and anxiety scores. Indeed, perceived negativity of the unwanted affectionate event was associated with worse stress, cognitive anxiety, and somatic anxiety, all of which are notable given the range of pathologies exacerbated by stress and anxiety (see, e.g. Sterling & Eyer, 1981). That is, not only are stress and anxiety important aspects of health in their own right, but they may also mediate associations between unwanted affection and problems such as cardiovascular disease, hypertension, sleep dysfunction, depression, and other stress- and anxiety-related disorders, a possibility that can be adjudicated in future research. The second hypothesis predicted that negativity, stress, and anxiety differ by relationship type. This prediction was supported,

save for somatic anxiety, and scores on the latter variable still ranged from a low of 1.69 with colleagues to a high of 2.19 with a romantic partner.

Limitations and opportunities for future research

Although the results of this study provide important insight into a comprehensive understanding of unwanted affection, certain limitations are worth considering. First, this study asked participants to describe an event that occurred, on average, approximately 5 months prior. We acknowledge, therefore, that recall and memory biases should therefore be considered when interpreting the findings, given their potential to influence the accuracy of recalled details and the affective tone of those details (Bowen et al., 2018; Glazier & Alden, 2017).

Second, this study was limited to self-report measures of stress and anxiety. Recent studies examining the impact of affection on physiological measures have used objective physiological biomarkers in saliva (Floyd & Riforgiate, 2008) and blood (Floyd et al., 2014). Future research may augment this approach by collecting reports of health-related behaviors (such as sleep, diet, or exercise habits) and reports of objective health indices (such as body mass index or resting cardiac rate).

Although it would be ethically precarious to expose participants to unwanted affectionate behaviors as part of an experimental manipulation, in order to measure objective physiological reactions, other methodological options may improve external validity in future research. For instance, a future study might track naturally occurring affectionate behaviors, and responses to them, through an experience-sampling paradigm. For example, Luginbuehl and Schoebi (2019) required participants to record their emotions and interactions with a romantic partner four times a day for four weeks. Prompted attention to, and reports of, affectionate behavior, cognitive and affective state, and somatic state could be elicited via a smartphone app or wearable device, and the collection of biomarkers in saliva at prompted moments could follow. Although this type of study would not necessarily establish causal associations between unwanted affection and health, it could bolster the external validity of the present findings by using a prospective design that is not reliant on recall.

Implications and conclusions

This study is one of the first to explore the fifth proposition of AET, which predicts physiological distress when affection tolerances are exceeded (Floyd, 2019). Participants' narratives reflect varying levels of affection tolerance. Additionally, this analysis examined the physiological correlates of unwanted affection through a self-reported somatic anxiety measure. Those participants who reported a severely negative event also reported high somatic anxiety, indicative of activation in the body's sympathetic nervous system. Although much research has documented physiological benefits of affection (e.g., Floyd et al., 2007, 2010), the results of this study suggest that not all affection expressions are advantageous. Importantly, it is possible that participants experienced and recalled stress and anxiety during the event but may not experience ongoing and health-compromising anxiety or stress after the fact. The opposite may also

be true in that participants may not have experienced stress and anxiety during the event, but may have recalled, or are currently experiencing, anxiety or stress after the fact; these scenarios warrant future attention.

The finding that event negativity, cognitive anxiety, and stress scores were highest for those reporting on an ex romantic partner is notable insofar as it appears to challenge the typical pattern of relational de-escalation—dubbed the *reversal hypothesis* by Baxter (1983)—in which de-escalation is characterized by a linear return to "stranger status."[11] A potential explanation for this apparent contradiction is that the reversal accompanying de-escalation manifests primarily in outward behavior—with ex-partners communicating more and more like strangers—while negative cognitions and affective states nonetheless linger.

In understanding the negative effects of stress and anxiety on one's well-being (Bacon et al., 2004; Ramirez et al., 1996), practitioners may prescribe tactics for communicating discomfort so as to avoid further perpetuation of stress. This might be notably salient for college students where discussions about one's affection tolerance might be a gateway to discussing mutual consent. By developing a cultural social script surrounding how comfortable one is with affection could act as a first line of defense against non-consensual sex and thus help avoid against psychology and physiological harm. Additionally, developing an open dialogue with others about how much or how little affection one wants to receive could potentially reduce the occurrences of unwanted sexual advances, even in romantic relationships (Impett & Peplau, 2002).

Finally, future work on unwanted affection may benefit from exploring theoretic explanations for the phenomenon other than that provided by AET. For instance, Heise's (1979) affect control theory offers that communicators seek consistency between their cultural understanding of a situation and their transient impressions of that situation. Discrepancies between more stable cultural sentiments and more transient impressions of a given situation result in what the theory calls deflection, which communicators seek to minimize. It is conceivable that unwanted affection could be conceptualized as a behavior causing such deflection, insofar as it may represent a discrepancy between the communication behavior itself and the definition of the relationship in which it occurs. As Floyd (2019) pointed out, AET's focus on bio-evolutionary explanations for behavior leaves many cultural explanations unadjudicated, and theories such as affect control theory may be fruitful for illuminating a wider range of influences on affectionate communication.

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Open research statement

As part of IARR's encouragement of open research practices, the author(s) have provided the following information: This research was not pre-registered. The data used in the research are available. The data can be obtained by emailing lisa.vanraalte@shsu.edu. The materials used in the research are available. The materials can be obtained by emailing lisa.vanraalte@shsu.edu.

Notes

1. Participants also completed a measure of affect (or mood), but due to concerns over tautology issues with the event negativity scale, it was removed. Data are available from author.
2. It is possible that the nature of the questions may have lead students to recall a nonconsensual event or traumatic episode that they did not feel comfortable discussing. Additionally, in compliance with the institutional board recommendations, no questions in the survey required a forced response. Therefore, many participants left a majority of the questions blank and proceeded to the extra credit page. These participants did not provide enough information to make their responses meaningful in the data and were removed from the analyses. Participants who did not use standard American English provided unreadable responses and were also removed from the sample.
3. Women ($M = 4.24$, $SD = 1.60$) reported a significantly higher event negativity score than men ($M = 3.83$, $SD = 1.54$), $t(343) = -4.08$, $p = .000$. There were no other sex differences with the remaining study outcomes.
4. A third open-ended question included in the survey, but not reported in the current study for manuscript length concerns, asked participants to describe how the unwanted affection affected the relationship. Results included no change to the relationship, relational termination, relational weakening, and relational improvement.
5. We thank the reviewers for their concerns regarding the confounding issues with the event negativity scale and the health measures of the study.
6. The first round of 246 responses were included for the initial coding as there was a natural lull in response rates. A second round of data collection occurred at the point.
7. To receive modification indices, the dataset must have no missing data. Thus, data were imputed with regression through AMOS. The model is available upon request from the first author.
8. After consulting the modification indices, items that loaded poorly on their latent variables were removed. Specifically, five items in the stress scale, two items in the somatic anxiety scale, and six items in the cognitive anxiety scale were removed from the model. A figure depicting this model is available upon request.
9. After consulting the modification indices, two covariations were drawn between error values for items e14/e17 and 219/e20. A figure depicting this model is available upon request.
10. Only the items in the final CFA measurement model were used to create composite scores of the study variables for all tests of the hypotheses.
11. We thank an anonymous reviewer for this observation.

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