

Pillow Talk: Exploring Disclosures After Sexual Activity

Amanda Denes

Drawing on physiological research, this study explores disclosures after sexual activity, or “pillow talk.” Oxytocin, better known as the “bonding hormone,” has been associated with physical affection and intimacy. While the hormone was originally studied for its role in childbirth, recent work has started to explore oxytocin’s other effects, such as decreasing stress, decreasing perceptions of social threat, increasing bonding, and increasing the ability to read emotional cues. Together with the literature on affection exchange theory (Floyd, Judd, & Hesse, 2008), several hypotheses regarding characteristics of disclosures after sexual activity were tested. This study found that disclosing positive feelings for one’s partner after sexual activity is positively associated with trust, relationship satisfaction, and closeness. Additionally, women who experienced orgasm disclosed significantly more than both men who orgasmed and women who did not reach orgasm. Lastly, individuals in monogamous/committed relationships engaged in more disclosures after sexual activity and experienced more positive outcomes from such disclosures than individuals in casual/open relationships.

Keywords: Affection Exchange Theory; Disclosure; Oxytocin; Physiology; Sex and Communication

A body of literature exists regarding the ways that stress can lead to disclosure (e.g., Stiles, 1987; Stiles, Shuster, & Harrigan, 1992). Much of this work from the Fever Model (Stiles) explores how anxiety is produced when individuals keep important information inside. This anxiety builds like a fever, eventually leading to disclosure. However, far less work exists on how feelings of comfort and *decreases* in stress may

Amanda Denes is a doctoral student in the Department of Communication at the University of California, Santa Barbara. Correspondence to: Amanda Denes, Department of Communication, 4005 Social Sciences & Media Studies Building, Mail Code 4020, University of California, Santa Barbara, Santa Barbara, CA 93106, USA. E-mail: Amanda.Denes@gmail.com

also facilitate disclosure. It is possible that when individuals experience decreases in stress and increases in intimacy, they may disclose information regarding their feelings for their partners. Specifically, when individuals engage in intimate behaviors with relational partners, feelings of comfort, security, and trust may counteract the risks of expressing their feelings and result in greater relational disclosures.

One particular context in which this is likely to occur is after sexual intimacy between partners. Researchers have found that after sexual activity, individuals experience increases in the hormone oxytocin (Carmichael et al., 1987). Oxytocin has a number of beneficial effects, including decreases in aggressive behavior and stress and increases in nonverbal affection, trust and social recognition (Guastella, Mitchell, & Dadds, 2008; Kosfeld, Heinrichs, Zak, Fischbacher, & Fehrl, 2005; Lim & Young, 2006). These responses may together create a safe haven for sharing intimate feelings with romantic partners, and will likely facilitate disclosure and relationship development.

Affection exchange theory (AET) presents one avenue for understanding why physical affection in the form of sexual activity may be beneficial (Floyd et al., 2008). AET posits that affectionate behaviors may aid in relationship development as well as provide positive physical effects such as increased immune functioning and decreased stress (Floyd et al., 2008). AET takes an evolutionary approach to understanding why “touch” can, and perhaps sexual activity may, be beneficial to individuals’ well-being and relationship development. Overall, research suggests that sex may have a number of benefits for individuals. Smith, Frankel, and Yarnell (1997) found that individuals with high orgasmic frequency had a 50% lower mortality risk for deaths from coronary heart disease. Greater frequency of penile-vaginal intercourse has also been associated with lower levels of alexithymia (an inability to recognize and communicate emotions) for women, greater heart rate variability, and lower resting blood pressure (Brody, 2003; Brody & Preut, 2003; Brody, Veit, & Rau, 2000).

In addition to these positive physical benefits, there may also be benefits to the way individuals communicate immediately following sexual activity. However, communication scholars have yet to understand how individuals communicate after sexual intimacy when engaging in “pillow talk.” Pillow talk is conceptualized as the conversations that occur after sexual activity (Veenestra, 2007). It is the communicative element of afterglow, which is the “blissful period of physical and mental relaxation after orgasm” (Veenestra, 2007, p. 39). Veenestra explains that pillow talk involves intimate communication and often occurs while romantic partners are still in bed. While no scholarly definition of pillow talk exists, in this study pillow talk is defined as the communication between two individuals after they engage in some form of sexual activity with one another. Though definitions like those from Veenestra may imply that pillow talk always involves the expression of positive sentiment, it is possible that pillow talk may also involve the expression of negative sentiment.

This study attempts to explore the characteristics and outcomes of pillow talk. Who engages in pillow talk? Does the type of sexual activity influence the amount of pillow talk? How is the relationship status of the partners related to not only pillow talk, but whether or not there are positive outcomes associated with such

communication? Overall, this study contributes to our understanding of disclosure as not just a response to stress and rumination, but also as a response to sexual activity.

Physiological Responses to Sexual Activity

A large body of research exists regarding physiological responses to sexual activity, mainly centered on the hormone oxytocin. Oxytocin has long been known to be released by mothers during childbirth, but recent research has explored the hormone's relationship with orgasm and sexual activity. Carmichael et al. (1987) showed that both men and women experience increases from baseline oxytocin levels after sexual arousal. The hormone has also been specifically linked to female sexual arousal. Blaicher et al. (1999) found that women's oxytocin levels significantly increased 1 minute after orgasm, and then decreased 5 minutes later. The question still exists, though, as to how such physiological changes may influence communication behaviors after sexual activity.

Effects of Oxytocin

Several studies have found that oxytocin has implications for interpersonal behaviors, but none have specifically explored communication outcomes. For example, researchers have found that oxytocin decreases aggressive behavior and enhances approach behavior and social recognition abilities (Lim & Young, 2006). Similarly, Domes, Heinrichs, Michel, Berger, and Herpertz (2007) found that individuals given a nasal dose of oxytocin were better able to read ocular emotional cues from others. Guastella et al. (2008) further tested oxytocin's effect on eye gaze and found that individuals given oxytocin were more fixated on the areas of the face most important for interpersonal communication. Specifically, individuals gazed longer into the eyes of neutral faces (an area that Guastella et al. point out as pivotal for assessing emotional cues, interpersonal interest, and social threat), as well as the mouth and nose regions.

This increased social behavior may be connected to other studies that have found that oxytocin decreases fear and increases trust (e.g., Huber, Veinante, & Stoop, 2005; Kosfeld et al., 2005). This decrease in fear and increase in trust has also been linked to brain functioning. Kirsch et al. (2005) connected oxytocin to brain activation mechanisms involved in perceiving social threat. They found that oxytocin reduced amygdala activation (an area of the brain associated with fear). Thus, researchers have suggested that oxytocin puts individuals at ease by reducing social threat cues (Kirsch et al.).

Decreases in perceptions of social threat may also influence risk assessments. Waldherr and Neumann (2007) found that male rats engaged in riskier behaviors postorgasm (after increases in oxytocin levels), but the same result did not occur when oxytocin was blocked. However, Waldherr and Neumann suggested that in humans, men may simply nod off postcoital in response to oxytocin surges, due to the stress-reducing effect of the hormone. Lancel, Krömer, and Neumann (2003) also

found that under stress-free conditions, oxytocin can induce sleep in male nonhuman mammals. Thus, postorgasm stress decreases may result in sleep for men.

The stress-reducing effects of oxytocin have also been linked to decreases in the stress hormone cortisol (Legros, 2001; Legros, Chiodera, & Geenen, 1988; Legros, Chiodera, Geenen, Smitz, & von Frenckell, 1984; Legros, Chiodera, Geenen, & von Frenckell, 1987). While this connection has been widely tested, its influence on communication has only recently been explored. Ditzen et al. (2009) tested oxytocin's effect on communication and stress responses for couples. The researchers had couples come into the lab and took baseline cortisol measurements of the participants. Partners then rated areas of couple conflict. In a double-blind design, couples either took five intranasal sprays of synthetic oxytocin or a placebo, and proceeded to discuss two of the conflict issues they listed. Salivary cortisol measures were taken postdiscussion. Individuals who received oxytocin showed significant decreases in cortisol compared with the placebo group. Ditzen et al. concluded that oxytocin indeed has prosocial and pair-bonding effects as well as stress-buffering benefits. Oxytocin may therefore play an important role in decreasing stress levels and helping couples to bond with one another.

Oxytocin, Relationship Development, and Affection Exchange

This research has led scientists to suggest that increases in oxytocin levels may play an important role in relationship development and maintenance in humans (e.g., Bartz & Hollander, 2006). This pair bonding is also at the heart of affection exchange theory (AET; Floyd et al., 2008). The third proposition of AET posits that affectionate behavior may aid in pair bonding and mate selection by connecting affectionate behavior with the attainment of two subgoals: obtaining resources (both material and emotional) and demonstrating reproductive fitness (Floyd et al., 2008). More specifically, AET states that "affectionate communication is adaptive with respect to human viability and fertility" (Floyd et al., 2008, p. 286). Thus, sexual activity between partners and the expression of affectionate feelings in this context may be one way that individuals engage in relationship development.

Relationship development is one of the primary goals of disclosure described by Derlega and Grzelak (1979). Derlega and Grzelak outlined self-expression, self-clarification, social validation, relationship development, and social control as the five basic functions of disclosure. Since sexual activity often occurs between two individuals with a romantic interest in one another, relationship development is likely a salient goal of postsexual activity disclosure, which falls in line with Derlega and Grzelak's argument that all disclosure is strategic. Thus, individuals may strategically disclose information after sexual activity as a means of enhancing relationship development.

Other individuals may use pillow talk to maintain relationships. It is possible that pillow talk aligns with several relational maintenance strategies such as showing positivity, openness, and assurances (Canary & Stafford, 1992; Stafford & Canary, 1991). Additionally, Dainton (2000) found that when expectations for maintenance

behavior are exceeded, individuals report more relational satisfaction. In the context of pillow talk, this may suggest that if certain maintenance strategies such as positivity, openness, and assurances increase after sexual activity, then partners may experience positive relational outcomes.

Relationship development and maintenance are two possible goals of individuals who engage in pillow talk, though there are multiple goals at work whenever individuals make communication decisions (Caughlin et al., 2009). In the context of pillow talk, however, these two goals are likely to be salient. If individuals do engage in such communication with the goal of relationship development or maintenance, then pillow talk should be connected to feelings of intimacy and affection. However, this is limited by whether or not the pillow talk focuses on the expression of positive or negative feelings for one's partner. Since pillow talk is defined broadly as communication between two individuals after they engage in some form of sexual activity with one another, it is necessary to further specify the type of pillow talk that may lead to such positive relational outcomes. Such communication likely involves the disclosure of positive aspects of the relationship between the two partners such as declarations of love, affection, and intimacy and will thus be termed "positive relational disclosures." Because of the positive nature of this communication, it can be predicted that increases in the amount of positive relational disclosures during pillow talk will be associated with increased trust, relationship satisfaction, and closeness between the individuals engaging in the sexual activity.

Despite these possible benefits to pillow talk, individuals also assess the risks involved with disclosing. For example, individuals who disclose information risk being rejected by the target of the disclosure or losing control over the information disclosed (Baxter & Montgomery, 1996). While several risks likely arise in postsexual activity disclosures, increased levels of oxytocin, which have been found to lower perceptions of social threat and fear, may cause individuals to assess less risk. Individuals may therefore disclose more after sexual activity because of a lower risk assessment associated with disclosing intimate information. Due to increases in oxytocin, individuals may feel more at ease with their partners and disclose with the goal of relationship development or maintenance in mind.

Pillow talk, however, may vary by the sex of the discloser. Research suggests that men can engage in sexual activity even when feelings of love may not exist for their partner and are more permissive in their sexual attitudes than women (Hendrick & Hendrick, 1995; Roche, 1986). Conversely, women have been found to connect sex with love and are more committed to their relationships (Hendrick & Hendrick, 1995; Roche, 1986). In addition to viewing sexual activity differently, women have generally been found to disclose more than men when discussing relationships, emotions, and intimacy (for a full review of gender and disclosure, see Hill & Stull, 1987).

Together, these findings suggest that men and women may engage in pillow talk differently. It can be predicted that women will engage in more positive relational disclosures after sexual activity than men, perhaps as a way of fostering an affectionate relationship with their partners. However, when considering the influence of sexual activity on women's disclosures, it is important to point out that certain

studies have only looked at oxytocin increases for women postorgasm (e.g., Blaicher et al., 1999; Carmichael et al., 1987). Despite this focus, 50–70% of women report that they do not orgasm from penile-vaginal intercourse alone (Reinisch & Beasley, 1990). Much of the oxytocin research seems to have confounded penile-vaginal intercourse and orgasm. Thus, it is important to test whether the amount of positive relational disclosures varies depending on whether women do or do not experience orgasm from the sexual activity. If a woman orgasms from sexual activity, her oxytocin levels should increase more than the levels of a woman who does not orgasm. In sum, women who orgasm should engage in more positive relational disclosures after sexual activity than men. Additionally, women who orgasm should engage in more positive relational disclosures after sexual activity than women who do not orgasm.

Lastly, it is important to consider the nerves being stimulated by penile-vaginal intercourse versus other forms of sexual stimulation. Vaginal and cervical sensory responses (such as those from penile-vaginal intercourse) have been found to stimulate the pelvic and hypogastric nerves, while clitoral sexual activity stimulated the pudendal nerve (Peters, Kristal, & Komisaruk, 1987; Whipple & Komisaruk, 2002). Additionally, the pelvic nerve has been found to play an especially important role in mating behavior and responsiveness to oxytocin (Moody, Steinman, Komisaruk, & Adler, 1994). Therefore, increases in oxytocin levels and subsequent effects on disclosure may vary for women who are clitorally stimulated versus vaginocervically (from penile-vaginal intercourse) stimulated as well as for women who do versus do not orgasm. It is likely that women whose orgasms are connected to the pelvic nerve (those who orgasm from penile-vaginal intercourse) will engage in more positive relational disclosures than women whose orgasms are connected to the pudendal nerve (those who orgasm from receiving oral sex or hand stimulation only), due to the pelvic nerve's importance in oxytocin responsiveness (Moody et al.).

Together, the above research supports the following three predictions: First, individuals who engage in more positive relational disclosures after sexual activity with their partners will report more (a) trust, (b) relationship satisfaction, and (c) closeness (Hypothesis 1). Second, women who orgasm will engage in more positive relational disclosures after sexual activity than men who orgasm (Hypothesis 2). Third, women who orgasm during penile-vaginal intercourse will engage in more positive relational disclosures than (a) women who do not orgasm and (b) women who orgasm from other sexual stimulation (Hypothesis 3). While postcoitus oxytocin increases may lead to increased positive relational disclosures, it is also important to examine whether positive relational disclosures vary by relationship status.

Committed versus casual relationships

Positive relational disclosures may be a source of regret if the communication is too intimate for the status of the relationship. Research suggests that the link between disclosure and liking is voided when disclosures are too intimate or violate expectations (Bochner, 1982; Collins & Miller, 1994). Affection exchange theory similarly posits that individuals have an optimal tolerance for affection, and that violations

of this tolerance level may result in aversive reactions (Floyd et al., 2008). Thus, it is possible that being overly intimate with a partner may violate expectations and appropriateness in the relationship. Such violations may cause individuals who disclose their feelings after sexual activity to experience more feelings of regret. However, individuals who are in monogamous relationships will likely experience less regret because their partners are already committed to them. Additionally, in a committed relationship, partners may be disclosing such feelings on a regular basis, and thus pillow talk would be relationship-appropriate and less likely to scare away the partner.

This also connects to the possible use of pillow talk as a relational maintenance strategy for individuals in committed relationships. Individuals in more serious relationships differ in their perceptions of maintenance behaviors (Stafford & Canary, 1991). Stafford and Canary found that engaged and seriously dating participants perceived the strategies of positivity, openness, and assurances more than newly dating partners, suggesting that investment plays an important role in perceptions of maintenance strategies. In the context of pillow talk, this finding suggests that individuals in more serious relationships may perceive more positive relational disclosures after sexual activity and use this communication as a way of developing and maintaining their relationships.

With this in mind, it is likely that individuals in monogamous/committed relationships will communicate differently after sexual activity than individuals in casual/open relationships due to the established levels of intimacy in more serious relationships. It is thus predicted that individuals in monogamous/committed relationships will engage in more positive relational disclosures after sexual activity than individuals in casual/open relationships (Hypothesis 4). Additionally, it is predicted that individuals in monogamous/committed relationships will experience (a) less feelings of regret and (b) higher levels of relationship satisfaction following postsexual activity disclosures than individuals in open/casual relationships (Hypothesis 5). In sum, this study explores pillow talk and positive relational disclosures by drawing on physiological research to predict communication behaviors after sexual activity.

Method

Participants

Participants were college students recruited through the Department of Communication participant pool at a large western university. The sample consisted of 200 individuals, with 77% identifying as female ($n = 153$) and 24% identifying as male ($n = 47$). The participants ranged in age from 18 to 26 years old, with an average age of 19.6 years old. Because this study is meant to focus on a range of both casual and committed relationships (not including marriage), this age range seemed appropriate for the nature of the study. Participants were also asked to report their sexual identity. This was an open-ended question, so as not to assume identity categories. Ninety-six percent ($n = 192$) of the sample self-identified as straight, 5 participants

identified as bisexual, 1 participant identified as gay, and 1 participant identified as pansexual. The sample was racially diverse, with 59% of participants identifying as White/Caucasian ($n = 120$), 16% ($n = 32$) as Hispanic, 11% ($n = 22$) as Asian, 9% as other or mixed race, and 5% ($n = 9$) as African American.

Sixty-nine percent of the sample identified as “in a relationship,” with an average relationship length of 13.9 months. When asked the status of their relationship, 53% of participants ($n = 106$) said they were in a monogamous or committed relationship, 24% ($n = 48$) said they were in an open or casual relationship, and 16% ($n = 33$) reported a combination of these categories. Thus, the seriousness of the relationship varied greatly for this sample. All participants identified as single except for 1 participant who was married and 3 others who identified as engaged.

Procedure

Subjects were instructed that they were eligible to participate in the study if they were currently in a sexual relationship. If participants met this criterion, they were provided a link to the study survey. Participants were given the following information on the first page of the online survey: Please complete this survey within 2 hours of sexual activity (sexual intercourse or other sexual activity) with your partner. Participants then returned to the website to complete the survey after sexual activity. They were asked to complete demographic measures and several questions assessing the nature of the sexual activity, their relationship, and their communication with their partners after sexual activity. The survey consisted of both open-ended questions and scales.

Measures

Demographics

Participants first completed a set of demographic measures asking their age, sex, gender, ethnicity, sexual identity, relationship type, relationship length, and marital status.

Nature of sexual activity

Participants were then asked to log the day and time of their sexual activity with their partners to confirm that the survey had been completed within the 2-hour window. They were then asked to explain the nature of their sexual activity. Participants were also asked whether they experienced orgasm from this sexual activity. Thirty percent ($n = 55$) of the sample reported that they did not experience orgasm from the sexual activity, while 69% ($n = 129$) of the sample did (1% reported yes and no). For women, 38% ($n = 54$) reported that they did not experience orgasm from the sexual activity and 60% ($n = 85$) reported that they did experience orgasm (1% reported yes and no). For men, 2% ($n = 1$) reported that they did not experience orgasm from the sexual activity and 98% ($n = 44$) reported that they did. Because only one male participant did not orgasm, he was excluded from the analyses. Thus, the entire sample

of men consisted of men who experienced orgasm. Participants then completed a checklist of sexual behaviors included in the sexual activity. Ninety-four percent ($n = 189$) of the sample reported that they kissed, 73% ($n = 147$) hugged, 46% ($n = 92$) performed oral sex on their partners, 45% ($n = 90$) were the receivers of oral sex, 72% ($n = 144$) gave their partners hand stimulation, and 77% ($n = 154$) received hand stimulation from their partners.

Though participants were asked about disclosures *after* sexual activity, it was important to understand the different types of sexual activity individuals would be referring to. In response to the open-ended question asking participants the nature of the sexual activity they would be focusing on in the survey, 85% of the sample reported that their sexual activity involved penile-vaginal intercourse ($n = 163$). Participants also focused on communication after several other types of sexual activity. Three percent ($n = 6$) gave oral sex to their partners, 5% ($n = 10$) received oral sex from their partners, 5% ($n = 9$) both gave and received oral sex, and 1% ($n = 1$) had anal sex with their partner. For women participants specifically, 84% percent of the sample reported that their sexual activity involved penile-vaginal intercourse ($n = 123$). Four percent ($n = 6$) of women gave oral sex to their partners, 4% ($n = 6$) received oral sex from their partners, and 6% ($n = 9$) both gave and received oral sex. In sum, most of the sample focused on communication after penile-vaginal intercourse (though other forms of sexual activity may have also occurred during the interaction) and several other participants focused on communication after oral sex only.

Disclosures after sexual activity

Participants were then asked to explain what they said after the sexual activity. They were also asked what they did after the sexual activity (for example—cuddled, held hands, engaged in prolonged eye contact). Participants were also instructed to write out the conversation that took place with their partner in dialogue form. These open-ended questions were used in a separate analysis.

A positive and negative disclosures scale was also created to assess communication after sexual activity. The scale consists of five items (e.g., “I expressed some positive feelings for my partner to him/her”; “I told my partner some negative thoughts I’ve been having about him/her”). A 5-point Likert scale was used (with 1 being strongly disagree and 5 being strongly agree). The Cronbach’s alpha for the negative disclosures subscale was .97 and for the positive disclosures subscale was .83.

Relationship satisfaction

To assess relationship satisfaction, an adapted version of the Marital Opinion Questionnaire (Huston, McHale, & Crouter, 1986) was used. The scale consists of 10 items using a 5-point semantic differential scale (e.g., “miserable-enjoyable,” “lonely-friendly,” “useless-worthwhile”). An additional global satisfaction item asked participants how satisfied they are with their relationship in general. The Cronbach’s alpha for the relationship satisfaction scale was .91.

Relationship commitment and love

Next, individuals completed Lund's (1985) scale assessing relationship commitment and love. A 5-point Likert scale was used (with 1 being strongly disagree and 5 being strongly agree). The commitment scale consists of nine items asking participants how committed they feel to their relational partner (e.g., "How likely is it that your relationship will be permanent?"; "How attracted are you to other potential partners or a single life style?"). Participants also completed Lund's love scale, which consists of nine items asking how emotionally involved individuals feel with their partners (e.g., "I feel I can confide in my partner about virtually everything"; "I would do almost anything for my partner"). The Cronbach's alpha was .89 for both the commitment scale and the love scale.

Trust

Participants then completed a 15-item modified trust scale (Couch, Adams, & Jones, 1996). A 5-point Likert scale was used (with 1 being strongly disagree and 5 being strongly agree). Participants were asked to respond to statements regarding their feelings of security with their partners (e.g., "I am afraid my partner will betray me"; "I generally believe what my partner tells me"). The Cronbach's alpha for the trust scale was .90.

Closeness

The Inclusion of Other in Self (Aron, Aron, & Smollan, 1992) was used to rate closeness between partners. Participants were asked to choose which set of overlapping circles best represents the relationship between themselves and their partners.

Regret

Lastly, participants were asked to respond to four items assessing how much they regret disclosing to their partners (e.g., "I wish I never expressed my feelings to my partner after our sexual activity"; "I am glad I told my partner how I feel"). A 5-point Likert scale was used (with 1 being strongly disagree and 5 being strongly agree). The Cronbach's alpha for the regret scale was .83.

Results

Outcomes and Sex Differences in Positive Relational Disclosures

Hypothesis 1 predicted that the more individuals engage in positive relational disclosures after sexual activity, the more they will report (a) trust, (b) relationship satisfaction, and (c) closeness with their partners. Results showed that positive relational disclosures after sexual activity are significantly and positively correlated with trust, $r = .54$, $p < .01$, relationship satisfaction, $r = .55$, $p < .01$, and closeness, $r = .53$, $p < .01$. Hypothesis 1 was supported. To test hypothesis 2, that women who orgasmed would engage in more positive relational disclosures after sexual activity

than men, a *t*-test was conducted. A *t*-test revealed a statistically reliable difference between the mean amount of positive disclosures for women who orgasmed ($M=4.29$, $SD=.83$) and men ($M=3.89$, $SD=.91$), $t(126)=2.50$, $p<.01$, $\alpha=.05$. Hypothesis 2 was supported. Interestingly, the same pattern did not emerge when comparing all women (those who both did and did not orgasm) to men ($t(187)=1.41$, $p=.21$, $\alpha=.05$) or when comparing women who did not orgasm to men ($t(96)=.485$, $p=.63$, $\alpha=.05$). Only women who orgasmed disclosed significantly more than men (all of whom orgasmed). In sum, hypothesis 1 and hypothesis 2 were both supported. The greater the amount of positive relational disclosures after sexual activity, the greater individuals' reports of trust, relationship satisfaction, and closeness. Additionally, women who orgasmed engaged in significantly more positive relational disclosures than men.

Women, Orgasm, and Positive Relational Disclosures

Hypothesis 3 (a) predicted that women who experienced orgasm from the sexual activity would have greater positive relational disclosures than women who did not orgasm. A *t*-test revealed a statistically reliable difference between the mean amount of positive relational disclosures for those who did not orgasm ($M=3.78$, $SD=.79$) and those who did orgasm ($M=4.29$, $SD=.83$), $t(135)=3.52$, $p<.001$, $\alpha=.05$. Women who orgasmed had significantly more positive disclosures after sexual activity than those who did not orgasm. Similarly, a separate *t*-test revealed a statistically reliable difference between the mean amount of negative disclosures for those who did not orgasm ($M=1.75$, $SD=.88$) and those who did orgasm ($M=1.44$, $SD=.71$), $t(136)=2.22$, $p=.03$, $\alpha=.05$, such that women who orgasmed engaged in significantly less negative disclosures after sexual activity than women who did not orgasm. Hypothesis 3 (a) was supported.

To test hypothesis 3 (b), women who orgasmed from penile-vaginal intercourse were compared to women who orgasmed from receiving oral sex from their partners. A *t*-test failed to reveal a statistically reliable difference between the mean amount of positive disclosures for women who orgasmed from penile-vaginal intercourse ($M=4.33$, $SD=.77$) and women who orgasmed from receiving oral sex ($M=3.75$, $SD=1.41$), $t(82)=1.66$, $p=.10$, $\alpha=.05$. While not supported, hypothesis 3(b) was approaching significance. Similarly, an additional *t*-test failed to reveal a statistically reliable difference between the mean amount of negative disclosures for women who orgasmed from penile-vaginal intercourse ($M=1.41$, $SD=.64$) and women who orgasmed from receiving oral sex ($M=1.89$, $SD=1.39$), $t(82)=1.60$, $p=.11$, $\alpha=.05$. Hypothesis 3(b) was not supported. In sum, not only do women who orgasm engage in more positive relational disclosures after sexual activity than women who do not, but women who do not orgasm engage in more negative relational disclosures after sexual activity than women who do orgasm. However, this same relationship was not found when comparing women who orgasm from penile-vaginal intercourse to women who orgasm from receiving oral sex.

Commitment and Positive Relational Disclosures

Hypothesis 4 predicted that individuals in monogamous/committed relationships would engage in more positive relational disclosures after sexual activity than those who were in casual/open relationships. A *t*-test revealed a statistically reliable difference between the mean amount of positive disclosures for those who identified as in a relationship ($M=4.23$, $SD=.81$) and those who identified as not in a relationship ($M=3.55$, $SD=.76$), $t(178)=34.96$, $p<.001$, $\alpha=.05$. An additional *t*-test also revealed a statistically reliable difference between the mean amount of positive disclosures for those who identified as being in a monogamous or committed relationship ($M=4.30$, $SD=.80$) and those who identified as being in a casual or open relationship ($M=3.78$, $SD=.74$), $t(145)=3.74$, $p<.001$, $\alpha=.05$. Hypothesis 4 was supported. Individuals in relationships engaged in significantly more positive relational disclosures after sexual activity than those who were not in relationships. Additionally, individuals who identified as being in monogamous or committed relationships engaged in significantly more positive relational disclosures after sexual activity than those who identified as being in open or casual relationships.

Regret and Postsexual Activity Disclosures

Hypothesis 5 predicted that individuals in monogamous/committed relationships would experience fewer feelings of regret and greater relationship satisfaction following postsexual activity disclosures than individuals in open/casual relationships. A *t*-test revealed a statistically reliable difference between the mean amount of regret for those who identified as being in a monogamous or committed relationship ($M=1.61$, $SD=.64$) and those who identified as being in an open or casual relationship ($M=2.10$, $SD=.58$), $t(125)=4.00$, $p<.001$, $\alpha=.05$. A separate *t*-test also revealed a statistically reliable difference between the mean amount of satisfaction for those who identified as being in a monogamous or committed relationship ($M=4.19$, $SD=.67$) and those who identified as being in an open or casual relationship ($M=3.63$, $SD=.76$), $t(132)=4.27$, $p<.001$, $\alpha=.05$. Hypothesis 5 was supported. Individuals in monogamous/committed relationships regretted their disclosures after sexual activity less than those in open/casual relationships and reported higher levels of relationship satisfaction.

Though women who experienced orgasm from penile-vaginal intercourse did not report that they engaged in more positive relational disclosures after sexual activity than women who orgasmed from other stimulation, all other predicted relationships were supported. Positive relational disclosures after sexual activity were positively correlated with trust, relationship satisfaction, and closeness. Additionally, women who orgasmed engaged in more positive relational disclosures than both men who orgasmed and women who did not orgasm. Lastly, results indicate that individuals in monogamous/committed relationships engage in more positive relational disclosures than those in open/casual relationships and have less feelings of regret and more relationship satisfaction after their positive relational disclosures following sexual activity.

Discussion

This study has helped to illuminate some of the characteristics of individuals who engage in pillow talk and the relationship between communication after sexual activity and various relational outcomes. Drawing on physiological research has proved a valuable resource for communication scholars in understanding how communication can be influenced by bodily responses. The present study adds to this literature by finding support for several predictions made from research on the hormone oxytocin. While oxytocin has been found to decrease aggressive behavior, increase approach behaviors, and increase social recognition abilities (Domes et al., 2007; Lim & Young, 2006), no previous studies have specifically looked at the effects of oxytocin on communication in natural settings (one study has looked at couples' communication when given synthetic oxytocin and another at individuals' oxytocin responses when exposed to stressors in a laboratory setting; see Ditzen et al., 2009; and Floyd, Pauley, & Hesse, 2010). The findings presented above provide preliminary evidence that physiological changes resulting from intimacy may be influencing relational partners' disclosure patterns after sexual activity.

While a limitation of this study is that physiological measures were not collected, several links have been established between the physiological literature and work on disclosure patterns. Drawing on research on oxytocin and suggestions about its interpersonal influences, several hypotheses were presented to test whether a link exists between oxytocin's known effects and various communication behaviors. Many models of disclosure use a risk–benefit approach to understand why individuals may or may not disclose information to their partners (e.g., Afifi & Steuber, 2009; Omarzu, 2000). Related, research on oxytocin has found that the hormone decreases perceptions of risk and social threat (Kirsch et al., 2005). Thus, a natural conclusion is that increases in oxytocin should result in increases in disclosure by lowering risk assessments. Since oxytocin is released significantly more in women's bodies when orgasm is reached, finding that women who orgasmed disclosed more than women who did not provides initial evidence for the link between oxytocin and disclosure. Additionally, the effects of oxytocin are known to be more pronounced in women than in men, as men's testosterone diminishes the effects of oxytocin while women's estrogen increases its effects (Taylor et al., 2002). This study found that women who orgasmed engaged in more positive relational disclosures than men (it is also important to note that these analyses only included men who reported experiencing orgasm). However, this same pattern did not emerge when comparing men to the entire sample of women nor to women who did not orgasm. This finding lends further support to the link between oxytocin and positive relational disclosures, as orgasm (and thus the release of oxytocin) appears to be the most important indicator of whether or not women engage in positive relational disclosures.

While orgasm may be an important factor in pillow talk, the type of sexual activity that leads to orgasm was not found to affect the amount of positive relational disclosures after sexual activity. No difference was found in the amount of such disclosures for women who orgasmed from penile-vaginal intercourse compared to women who

orgasmed from receiving oral sex. Previous research has suggested that different nerves are stimulated by different types of sexual activity (Peters, Kristal, & Komisaruk, 1987; Whipple & Komisaruk, 2002), and this may thus influence the amount of oxytocin released. However, this study found no evidence that type of orgasm (i.e., from penile-vaginal intercourse or oral sex) influences communication outcomes. This finding may suggest that it is the release of oxytocin in general, rather than the way it is released or the amount that is released, that influences communication.

Additionally, this study found that pillow talk is related to positive relationship behaviors. Specifically, the more individuals engaged in positive relational disclosures after sexual activity, the higher their ratings of trust, relationship satisfaction, and closeness with their partners. Research has generally indicated that disclosure helps to develop and maintain relationships (e.g., Altman & Taylor, 1973). This same pattern seems to exist for disclosures after sexual activity. Pillow talk may allow individuals to be open and vulnerable with their partners, disclosing feelings that may be difficult to express in less intimate contexts. This openness and positivity may imply that pillow talk functions as a relational maintenance strategy for some individuals (Canary & Stafford, 1992; Stafford & Canary, 1991). While causal paths cannot be established from the present data, the relationship between positive relational disclosures after sexual activity and positive relational outcomes suggests that pillow talk plays an important role in couples' communication.

Such benefits, however, may be limited to individuals in more committed relationships. This study found that individuals in relationships engaged in more positive relational disclosures than those not in relationships. More specifically, individuals in committed and monogamous relationships engaged in more positive relational disclosures than individuals in casual and open relationships. This lends support to the idea that it is the relationship between the couple engaging in the sexual activity, rather than the sexual activity itself, that promotes positive postsexual activity communication. Individuals in less committed relationships may be more focused on the physical act rather than relational outcomes, and this focus may mean that the goal of disclosing as a means of developing the relationship no longer exists. Rather, individuals may communicate to maintain the sexual relationship, rather than share intimate feelings as a way of developing the relationship further. Another possibility is that individuals in less committed relationships assess more risk to engaging in pillow talk. Thus, while oxytocin may decrease perceptions of some of the risks of disclosing, it may not be enough for individuals in casual relationships to disclose feelings for their partners.

This fear seems apparent in the finding that individuals in casual relationships regretted their positive relational disclosures after sexual activity more than individuals in committed relationships. While pillow talk may benefit individuals who have already committed to working on a relationship together, it may push apart individuals whose relationship status is less solidified. This may be because individuals get "caught up" in the intimate moment, and say things that are either not appropriate for the current stage of the relationship or that they may not truly feel. Another

possibility is that one individual reveals his or her feelings, engaging in pillow talk, while his or her partner does not, creating an imbalance in the relationship. Future research would benefit from exploring such patterns and whether there are long-term consequences of pillow talk on casual relationships. How might reciprocity or a lack of reciprocity during pillow talk influence relational outcomes? Additionally, is there a dark side of pillow talk? Research on pillow talk would also benefit from further exploring the differences between pillow talk that focuses on the expression of positive feelings for one's partner versus pillow talk focused on more negative sentiments.

Conclusion

This study has added to our understanding of how individuals communicate after sexual activity and provided a link between physiological research on the hormone oxytocin and disclosure of positive feelings for one's partner. Specifically, this study found that positive relational disclosures after sexual activity were related to increased trust, relationship satisfaction, and closeness with one's partner, indicating that engaging in pillow talk may aid in maintaining a healthy relationship. Additionally, women's positive relationship disclosures after sexual activity were found to be influenced by orgasm, such that women who orgasmed engaged in more positive relational disclosures than both men who orgasmed and women who did not orgasm. Lastly, this study found that positive relational disclosures after sexual activity occurred more often in monogamous/committed relationships than in open/casual relationships. Additionally, individuals in monogamous/committed relationships were less regretful of the disclosures and more satisfied in their relationships than individuals in open/casual relationships. These findings provide initial evidence of the link between oxytocin and communication after sexual activity and make clear the importance of further understanding how pillow talk may be influencing romantic relationships.

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