



# Reasons for sex and relational outcomes in consensually nonmonogamous and monogamous relationships: A self-determination theory approach

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## Abstract

Approximately 4% of individuals in North America participate in consensually non-monogamous (CNM) relationships, wherein all partners have agreed to additional sexual and/or emotional partnerships. The CNM relationships are stigmatized and viewed as less stable and satisfying than monogamous relationships, a perception that persists despite research evidence. In our study, we assess the legitimacy of this negative perception by using a self-determination theory (SDT) framework to explore how sexual motivation impacts relational and sexual satisfaction among CNM and monogamous participants in romantic relationships. A total of 348 CNM ( $n = 142$ ) and monogamous participants ( $n = 206$ ) were recruited from Amazon's Mechanical Turk (MTurk, (2016), [www.mturk.com](http://www.mturk.com)) to complete a cross-sectional survey. Participants reported on their sexual motivations during their most recent sexual event, their level of sexual need

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fulfillment, and measures of sexual and relational satisfaction with their current (primary) partner. The CNM and monogamous participants reported similar reasons for engaging in sex, though CNM participants were significantly more likely to have sex for personal intrinsic motives. No differences in mean levels of relationship and sexual satisfaction were found between CNM and monogamous individuals. Participants who engaged in sex for more self-determined reasons reported increased relational and sexual satisfaction. This relationship was mediated by sexual need fulfillment; participants who reported more self-determined motives reported higher levels of need fulfillment and, in turn, greater relationship and sexual satisfaction. This study indicates that CNM and monogamous individuals report similar levels of satisfaction within their relationship(s) and that the mechanisms that affect relational and sexual satisfaction are similar for both CNM and monogamous individuals. Our research extends theoretical understandings of motivation within romantic relationships and suggests that SDT is a useful framework for considering the impact of sexual motivation on relational outcomes.

### **Keywords**

Consensually nonmonogamous, relationship satisfaction, self-determination theory, sexual motivation, sexual satisfaction

Throughout Western history, people have structured their romantic and sexual relationships in a variety of ways to maximize social, economic, and relational benefits. Historically, monogamy has been considered normative in Western narratives of romantic partnerships and desired by many individuals and couples (Dindia & Emmers-Sommer, 2006; Finkel, Hui, Carswell, & Larson, 2014; Impett, Muise, & Peragine, 2014). Currently, individuals expect more from their partners than at any time in our recent past (e.g., love, sexual excitement, social and financial support). These high expectations may place undue pressure and stress on romantic partnerships and make it difficult for each person to have their needs fulfilled (Finkel et al., 2014). In response to this relational challenge, some individuals choose to seek additional relationships outside of a monogamous partnership, often referred to as consensual nonmonogamy (CNM) relationship to fulfill their diverse needs. The CNM relationship is an umbrella term used to describe relationships in which all partners have agreed to engage in extradyadic (or multiple) sexual and/or romantic relationships (Conley, Moors, Matsick, & Ziegler, 2012).

Although research indicates that CNM relationships are viewed as less satisfying, loving, and acceptable than monogamous ones (Conley et al., 2012; Conley, Matsick, Moors, & Ziegler, 2017), growing evidence suggests that CNM partnerships possess positive qualities of happiness and stability and are a viable and fulfilling alternative to monogamy (Conley et al., 2017; Mitchell, Bartholemew, & Cobb, 2014; Wosick, 2012). While many studies have examined how people in monogamous relationships fulfill needs and maintain commitment (e.g., Berscheid & Reis, 1998; LaGuardia & Patrick, 2008; Rusbult & Buunk, 1993), little research has addressed specific mechanisms that impact need fulfillment and relational outcomes, and how this may be similar or different depending upon one's relationship structure (i.e., CNM, monogamous). The CNM

relationships provide a unique opportunity to examine need fulfillment and relational outcomes, as sexual and emotional needs are often met outside of a primary partnership (i.e., in contrast to relationships where sexual and emotional fidelities are cornerstones of the relationship). Need fulfillment that is dispersed among several partners may alleviate some of the pressures faced by individuals in modern committed relationships (Conley & Moors, 2014; Mitchell et al., 2014; Moors, Matsick, & Schechinger, 2017). The associations between need fulfillment and relational outcomes are thought to apply similarly across different types of relationships and social contexts (Deci & Ryan, 2000, 2012), though these links have not been examined among people in CNM partnerships. Studying the factors that impact need satisfaction and relational qualities among people who engage in CNM relationships will allow us to examine whether models of need fulfillment work similarly for people in CNM and monogamous relationships and to determine the generalization of need fulfillment theories to different relational structures.

### *Self-determination theory (SDT), need satisfaction, and relational outcomes*

Sexual motivation has received increasing attention in the relationship and sexuality literature (Muise, Impett, & Desmarais, 2013; Smith, 2007; Stephenson, Ahrold, & Meston, 2011). The SDT, a theory that emphasizes the importance of innate psychological needs to relational well-being and distinguishes between motivations that are autonomous and controlled (Deci & Ryan, 2000, 2012; Ryan & Deci, 2000), may provide a useful perspective for how one's motives for engaging in sexual activity with a partner(s) are linked to need fulfillment and relational outcomes for both CNM and monogamous individuals.

SDT maintains that individuals are motivated to develop a unified sense of self by balancing three psychological needs: competence (feelings of confidence and efficacy), autonomy (a person's perception of agency and authentic endorsement of their behaviors), and relatedness (the desire to connect, be close to, and understood by, other individuals; Deci & Ryan, 2000; Ryan & Deci, 2000, 2002). Researchers who employ SDT have identified several types of motivations that represent the continuum of self-determination (Brunell & Webster, 2013; Deci & Ryan, 2000, 2012). At one end are those reasons that emphasize choice, values, and autonomy. Individuals may engage in sex for *intrinsic motivations*, such as when people have sex because the activity itself is pleasurable (*personal intrinsic* reasons) or because the intimacy of sex is enjoyable (*relational intrinsic* reasons; Brunell & Webster, 2013; Deci & Ryan, 2000; Jenkins, 2003). People may also engage in sex for several *extrinsically motivated* reasons. For example, a person with low sexual desire may have sex with a partner because they believe that sexual activity is important to their relationship. In the SDT literature, this process is called *integrated-identified regulation*, which involves intentionally choosing to engage in a behavior because it is part of one's personal values (Brunell & Webster, 2013; Deci & Ryan, 2000; Jenkins, 2003).

At the other end of the continuum are motivations that are less self-determined, such as engaging in sex because one feels guilty withholding such activity from a partner (labeled *introjected regulation*; Jenkins, 2003; Ryan & Deci, 2002). Further, a person may engage in sex because they are driven by external rewards (e.g., money) or to avoid punishments (e.g., fear of losing a partner; labeled *external regulation* in SDT). In

addition to self-determined goals, which are reflective of intentional behaviors, SDT proposes a state of *amotivation*, whereby a person is forced or coerced into performing a behavior that they did not wish to engage in.

SDT proposes that engaging in sex for more self-determined reasons (e.g., sex for pleasure, valuing sex) will result in greater relational and sexual satisfaction (Brunell & Webster, 2013; Deci & Ryan, 2012), whereas engaging in sex for reasons that reflect pressured or nonautonomous situations will negatively impact relational outcomes. Further, the extent to which the individual feels that their psychological needs are satisfied through sexual interaction mediates this relationship (Brunell & Webster, 2013; Deci & Ryan, 2012). To date, there is limited research on relationship and sexual satisfaction using concepts from SDT, but studies indicate that the three basic psychological needs proposed in SDT (autonomy, competence, and relatedness) each uniquely predict increased relationship and sexual satisfaction (Smith, 2007). Brunell and Webster (2013) tested the relationship between self-determined sexual motives, sexual need satisfaction (i.e., how well the needs for autonomy, competence, and relatedness are satisfied through sexual activity), and relational quality with samples of monogamous undergraduate students. Consistent with SDT propositions, more self-determined motivations were positively related to sexual need satisfaction, which was significantly associated with relational quality. Related results emerged in their subsequent daily diary studies with individuals and couples: In these studies, self-determined motivations were linked to relational quality through sexual need fulfillment. These findings suggest that one's sexual motives are indeed important to both need fulfillment and the enhancement of one's romantic relationship.

### *SDT and CNM relationships*

Although research has begun to apply SDT to sexual relationships among monogamous individuals and couples (Brunell & Webster, 2013; Smith, 2007), no study has yet applied SDT principles to examine need fulfillment and relational outcomes among people who engage in CNM relationship or compared CNM individuals to those in monogamous relationships. There may be differences in the types of motives that people in CNM partnerships report, compared to monogamous individuals, that differentially impact relational outcomes. For example, monogamous individuals frequently report reasons for sex reflecting intrinsic values, such as to experience pleasure and increase intimacy (Muisse et al., 2013; Stephenson et al., 2011; Wood, Milhausen, & Jeffrey, 2014). Given the role of sex and intimacy in CNM partnerships (e.g., Wosick-Correa, 2014), we would expect CNM individuals to also report these types of motives. However, sexual need fulfillment is particularly significant to CNM relationships as there is the opportunity for one's sexual needs to be fulfilled across multiple partners, which may also impact relational outcomes (Conley & Moors, 2014; Mitchell et al., 2014; Moors et al., 2017). Research indicates that need fulfillment is a significant motivation to engage in CNM relationships (DeSantis, Wood, Milhausen, & Desmarais, 2016) and is recognized as a primary benefit to engaging in CNM relationships (Moors et al., 2017). Further, research has noted the importance of autonomy and personal growth in individuals' reasons for engaging in CNM relationships (DeSantis et al., 2016) and the

perceived benefits of CNM relationships (Moors et al., 2017). In such studies, participants expressed how having the choice to live their life authentically and in a way congruent with their values allowed them to grow as a person and be free from normative ideas about how relationships “should” be. Thus, we may expect mean level differences in the endorsement of self-determined motives related to these concepts (e.g., sex as a way to express their own autonomy/values) between CNM individuals and monogamous individuals (with those in CNM relationships reporting greater self-determined motives).

The concept of autonomy and choice is central to need satisfaction in SDT (Deci & Ryan, 2002); an SDT perspective enables us to explore whether CNM and monogamous individuals report similar/different sexual motives and whether motives affect sexual need fulfillment (i.e., autonomy, competence, relatedness) and relational outcomes differently depending on one’s relational orientation. It is possible that the links between sexual motives, sexual need fulfillment, and relational outcomes are stronger among CNM individuals, where need fulfillment is central to the relationship configuration. However, SDT principles are proposed to operate similarly across a variety of social contexts and relationships (Deci & Ryan, 2000, 2012). In all circumstances, more self-determined motives are thought to enhance need satisfaction, which, in turn, impacts relational outcomes positively. Thus, we might expect to see the primary tenets of SDT apply similarly to both monogamous and CNM relationships, especially in CNM relationships where there are greater similarities between the relational structures (i.e., such as when CNM relationships include a focus on a primary partnership where there is a significant commitment in emotions, time, energy, and resources with that specific partner).

Relatedly, differences in motivations may also be linked to differences in experiences of sexual and relationship satisfaction. Given stigma and popular culture’s reverence for monogamy, relationship and sexual satisfaction could be negatively impacted among CNM individuals. However, given the importance placed on need fulfillment in CNM relationships, it is possible that CNM individuals may experience high levels of relational satisfaction. Research has documented that CNM individuals report similar (or higher) levels of relationship satisfaction when compared to monogamous individuals (Conley et al., 2017), for example, among self-identified swingers (Bergstrand & Williams, 2000), men in same-sex CNM partnerships (LaSala, 2004; Parsons, Starks, Gamarel, & Grov, 2012), and polyamorous individuals (Morrison, Beaulieu, Brockman, & O’Beaglaoich, 2013). A recent national survey of 3463 Canadians (Séguin et al., 2016) reported no significant differences between participants who were polyamorous, in an open relationship, or in a monogamous partnership on measures of relational and sexual satisfaction, closeness and trust, and commitment. Thus, research with a large sample of CNM and monogamous individuals could help bring some clarity to how people in different relational structures experience relationship and sexual satisfaction.

### *The current research*

The current study incorporates exploratory research questions and specific hypotheses based on SDT to explore the relationship between sexual motivation and relational and sexual satisfaction among CNM and monogamous individuals.

### *Exploratory questions.*

1. Do individuals in CNM and monogamous relationships report similar or different motives for engaging in sexual activity with their (primary) partner?
2. What are the similarities and differences in relational and sexual satisfaction for individuals in CNM and monogamous relationships?
3. Are the associations between sexual motives, sexual need fulfillment, and relational and sexual satisfaction stronger or weaker for CNM versus monogamous individuals? That is, are the associations conditional upon whether participants are in a CNM or a monogamous relationship?

*Hypotheses.* Based on SDT and past research by Brunell and Webster (2013), we make the following hypotheses. In each model, we propose relationships will be significant while controlling for gender, relationship length, frequency of sexual activity, and age as research indicates that these variables impact sexual motives and/or relationship and sexual satisfaction (Meston, Hamilton, & Harte, 2009; Murray & Milhausen, 2012; Stephenson et al., 2011). To maintain consistency between CNM and monogamous groups, we opted to select CNM participants who indicated they had a primary partner. Although we recognize the complexity of CNM relationships as often involving more than one partner and not always including a primary partner, this approach allowed for symmetrical comparison between samples.

**Hypothesis 1:** We predict that more self-determined motives will be positively related to sexual need satisfaction (i.e., autonomy, competence, relatedness) and relationship/sexual satisfaction with a (primary) partner in both CNM and monogamous individuals.

**Hypothesis 2:** Sexual need satisfaction (i.e., how well the needs for autonomy, competence, and relatedness are satisfied through sexual activity) will be positively related to relationship satisfaction and sexual satisfaction with a (primary) partner in both CNM and monogamous relationships.

**Hypothesis 3:** Sexual need satisfaction will mediate the relationship between self-determined sexual motivation and relationship/sexual satisfaction with a (primary) partner in both CNM and monogamous relationships.

## **Method**

### *Participants*

Participants were recruited online using Amazon's Mechanical Turk (MTurk, [www.mturk.com](http://www.mturk.com)). An initial screening process occurred to find participants who were currently in CNM relationships. A total of 4,919 were screened; 225 met the criteria for participation (i.e., currently be in a CNM relationship, have had sex with a partner at least once in the past month, were over the age of 18, and had access to a computer), and of these, 142 completed the full-length survey. Following the selection of CNM participants, we examined four demographic variables (age, gender, and racial/ethnic identity) and recruited monogamous participants from the initial screening pool who reported similar

responses to reduce variations between the groups. In total, 206 monogamous participants completed the survey (see Online Supplementary Material 1 for recruitment details).

## Procedure

Two Human Intelligence Tasks (HITs) were created on MTurk. The first was a screening questionnaire to determine eligibility for participation in the full study. Interested participants clicked on the HIT, which brought them to the survey (in Qualtrics. (2016). [www.qualtrics.com](http://www.qualtrics.com)) which included an information and consent page, followed by demographic items and questions on relationship structure and status. At the end of the screening survey, participants were told that they would be contacted if they qualified for the full survey. Eligible participants were sent an invitation to the second HIT (i.e., the full survey, which included a consent form, demographic items, followed by questions assessing relationship agreements, sexual motives, need satisfaction, relationship satisfaction, and sexual satisfaction). The survey took approximately 20–30 min to complete. At the end of each survey, participants were thanked for their participation and were provided with a Qualtrics code that verified their participation. Participants were paid to their MTurk account (US\$0.25 for the first HIT and US\$2.50 for the second). The study was cleared by the research ethics board at the University of Guelph.

## Measures

For all relational measures, participants were asked to report on their current partner (see Online Supplementary Material 2 for changes made to measure instructions, stems, and items to apply to CNM participants). If CNM individuals had more than one partner, they were asked to report on a partner they spent more time with (and/or considered primary) to facilitate comparisons with monogamous couples.

*Demographic questions.* Participants' age, gender identity, ethnic and racial background, current geographical location, sexual orientation, relationship status, number of partners, relationship duration, and parental status were assessed. Age, gender, and relationship length were used in the models as control variables.

*Relationship type.* Participants were asked if they were currently in a sexual relationship. If they selected "yes," they were asked to describe their current relationship with the following response options: (1) single, (2) in a monogamous relationship, and (3) in CNM relationship(s) (i.e., in a sexual and/or intimate relationship with one or more partners wherein everyone is agrees to it). Monogamous respondents were asked to state their current relationship status (casually dating one person, seriously dating one person, living with one partner but not married or engaged, engaged to one person, married to one person, other: please specify, or I choose not to answer). Participants in CNM relationships were asked to choose all that apply from the following: (a) casually dating more than one person, (b) open relationship (one or both has sex outside of the relationship), (c) polyamorous (one or both are in multiple loving and/or sexual relationships), (d) swinging relationship (one or both go to parties/clubs/, etc., where partners may be exchanged for

the night), (e) living with one partner but not married or engaged, (f) living with multiple partners but not married or engaged, (g) engaged to a partner, (h) engaged to more than one partner, (i) married to one partner, (j) married to more than one partner, (k) other: please specify, and (l) I choose not to answer.

**Frequency of sexual activity.** As sexual frequency is related to relationship and sexual satisfaction (McNulty, Wenner, & Fisher, 2016; Sánchez-Fuentes, Santos-Iglesias, & Sierra, 2014), sexual frequency was used in the models as a control variable and assessed as follows: *how many times in the past month have you engaged in sexual activity with your (primary/committed) partner?*

**Sexual motives.** The Perceived Locus of Causality for Sex (PLOC-S) Scale (Jenkins, 2003) was used to assess participants' various sexual motivations at last sex. Motives are rated on a scale from 0 = *not at all for this reason* to 4 = *very much for this reason*. Fifty-two items are organized into seven subscales: (1) Personal Intrinsic Motivation: Sex is fun and enjoyable (8 items;  $a = .89$ ), (2) Relational Intrinsic Motivation: The intimacy of sex is fun and enjoyable (10 items;  $a = .93$ ), (3) Integrated-Identified Regulation: Sex is a valuable activity or part of a larger scheme of values (6 items;  $a = .88$ ), (4) Introjected Regulation: motivated by guilt, shame, anxiety, pride, or grandiosity (11 items;  $a = .87$ ), (5) Extrinsic Regulation: motivated by desire for rewards or fear of punishment (7 items;  $a = .84$ ), (6) Amotivation: no autonomy of sexual engagement (4 items;  $a = .80$ ), and (7) Drive Motivation: compelled by urges in the body (6 items;  $a = .86$ ; Brunell & Webster, 2013; Jenkins, 2003). Several items were modified slightly for the scale to apply to both monogamous and CNM participants. For example, Item 5 was changed from "Because I felt pressured by my partner" to "Because I felt pressured," and the word "partner(s)" was included in all relevant items.

**Sexual need satisfaction.** The degree to which participants experienced sexual need satisfaction (with their primary partner) was assessed using the 9-item Need Satisfaction Scale (LaGuardia, Ryan, Couchman, & Deci, 2000;  $a = .88$ ). Items were altered slightly as per Brunell and Webster (2013); all items began with "When I engage in sexual activity with my current partner . . ." and included items such as ". . . I am free to be who I am" and ". . . I feel loved and cared about." Response choices ranged from 1 = *not at all true* to 7 = *very true*.

**Relationship satisfaction.** The shortened version of The Dyadic Adjustment Scale (Spanier, 1976), the DAS-4 (Sabourin, Valois, & Lussier, 2005) assessed couple satisfaction ( $a = .82$ ). For three of the questions (which focus on commitment, relationship quality, and communication), individuals were asked to rate various aspects of their relationships on a 6-point Likert-type scale, where 0 = *all the time* and 5 = *never*. The fourth question is rated on a scale of 0–6, and participants are asked to report the degree of happiness, in their relationship, where 0 = *extremely unhappy* and 6 = *perfect*.

**Sexual satisfaction.** The New Sexual Satisfaction Scale–Short (NCSSS-S) consists of 12 items ( $a = .93$ ) and has been tested across cultures, gender, sexual orientation, and relationship status (Fisher, Davis, Yarber, & Davis, 2011; Stulhofer, Busko, &



Brouillard, 2010). Participants were asked to think about their sex life over the past 6 months and rate their sexual satisfaction with their primary partner on items such as “the quality of my orgasms” and “my partner’s sexual creativity” from 1 = *not at all satisfied* to 7 = *extremely satisfied*.

## Results

### Demographic characteristics

The sample included 348 participants, including 172 (49.4%) women (cisgender and transgender), 167 (48.0%) men (cisgender and transgender), and a small number of participants ( $n = 9$ , 2.6%) reporting multiple gender identities or a gender queer/nonbinary identity. Approximately three quarters of the sample identified as heterosexual ( $N = 267$ , 76.7%; CNM:  $n = 79$ , 55.6%, Mono:  $n = 188$ , 91.3%), with 13.2% ( $N = 46$ ) identifying as bisexual (CNM:  $n = 34$ , 23.9%, Mono:  $n = 12$ , 5.8%), 2.6% ( $N = 9$ ) as pansexual (CNM:  $n = 9$ , 6.3%, Mono:  $n = 0$ , 0.0%), 3.2% ( $N = 11$ ) as gay (CNM:  $n = 8$ , 5.6%, Mono:  $n = 3$ , 1.5%), and a small percentage indicating a lesbian ( $N = 1$ , 0.3%; CNM:  $n = 1$ , 0.7%, Mono:  $n = 0$ , 0.0%), queer ( $N = 6$ , 1.7%; CNM:  $n = 4$ , 2.8%, Mono:  $n = 2$ , 1.0%), uncertain ( $N = 4$ , 1.1%; CNM:  $n = 3$ , 2.1%, Mono:  $n = 1$ , 0.5%), or asexual identity ( $N = 2$ , 0.6%; CNM:  $n = 2$ , 1.4%, Mono:  $n = 0$ , 0.0%). Participants ranged in age from 20 to 70 years, with a mean age of 34.13 ( $SD = 9.50$ ). On average, those engaged in CNM had 2.06 ( $SE = .07$ ) partners. Table 1 provides additional demographic details. See Tables 2 and 3 for reliability coefficients, correlations, and descriptive statistics of the key variables of the full sample and by relationship group.

### *Do individuals in CNM and monogamous relationships report similar or different motives for engaging in sexual activity with their (primary) partner?*

Multivariate analysis of covariance (MANCOVA) was used to explore whether CNM and monogamous participants reported engaging in sex for similar or different motives. In this analysis, scores on the sexual motives (PLOC-S) subscales were compared after we controlled for variables well known to have an impact on sexual motives including gender and age. Further, as CNM and monogamous participants differed significantly on sexual frequency (CNM participants reported more frequent sexual activity) and relationship length (monogamous individuals reported longer relationships), these variables were also included as covariates in the analyses. The MANCOVA indicated a significant difference in the motives reported by CNM and monogamous participants (see Table 4 for estimated means and 95% confidence intervals). Individuals in CNM relationships were significantly more likely to report motives related to the enjoyment of sex itself (i.e., the *personal intrinsic motives* scale), their own values regarding sex and relationships (i.e., the *integrated identified* scale), and to satisfy their own sex drive (i.e., the *drive* scale) compared to monogamous participants. No differences were found between the relationship structure groups on any of the remaining subscales.

**Table 1.** Demographic characteristics by relationship group.

Variable	CNM participants		Monogamous participants	
	N	%	N	%
<b>Gender<sup>a</sup></b>				
Women (cisgender and transgender)	70	49.3	102	49.5
Men (cisgender and transgender)	67	47.2	100	48.5
Gender queer/nonbinary	5	3.5	4	1.9
<b>Ethnicity<sup>b</sup></b>				
American Indian, Alaska Native	0	0	3	1.5
Asian Indian	3	2.1	1	0.5
Black, African American	18	12.7	23	11.2
Chinese	4	2.8	7	3.4
Dominican	0	0	1	0.5
Filipino	1	0.7	1	0.5
Japanese	0	0	1	0.5
Mexican, Mexican American, Chicano	5	3.5	6	2.9
Multiple ethnic/racial identities	7	4.9	10	4.9
Puerto Rican	2	1.4	3	1.5
Vietnamese	1	0.7	2	1.0
White	101	71.1	148	71.8
<b>Education<sup>b</sup></b>				
High school graduate	13	9.2	18	8.7
Some college/university	41	28.9	51	24.8
College/university graduate	59	41.5	85	41.3
Some trade/technical/vocational training	1	0.7	1	0.5
Trade/technical/vocational training degree or diploma	2	1.4	13	6.3
Some postgraduate work	6	4.2	14	6.8
Master degree	15	10.6	22	10.7
Professional degree (e.g., MD)	4	2.8	0	0
Doctoral degree	1	0.7	2.0	1.0
<b>Residence</b>				
Urban	52	37.3	72	35
Suburban	65	45.8	97	47
Rural	24	16.9	37	18
<b>Relationship type/status<sup>a</sup></b>				
Open relationship (one or both of us has sex outside of the relationship)	81	57		
Polyamorous (one or both of us are in multiple loving and/or sexual relationships)	42	29.6		
Swinging relationship (one or both of you go to parties/clubs/etc. where partners may be exchanged for the night)	12	8.5		
Casual dating (dating more than one person)	35	25.6		
Living with one partner, but not married or engaged	6	4.2		
Living with multiple partners, but not married or engaged	1	0.7		
Engaged to one partner	8	5.6		
Engaged to more than one partner	0	0		

(continued)

**Table 1.** (continued)

Variable	CNM participants		Monogamous participants	
	N	%	N	%
Married to one partner	26	18.3		
Married to more than one partner	0	0		
Casually dating one person			11	5.3
Seriously dating one person			55	26.7
Living with one partner, but not married or engaged			33	16
Engaged to one partner			12	5.8
Married to one partner			102	49.5

Note. CNM: consensually nonmonogamous.

<sup>a</sup>Participants were asked to check all that apply.

<sup>b</sup>Additional ethnic identity categories and education categories were available but only those that were reported by participants are present in the table.

### *What are the similarities and differences in relational and sexual satisfaction for individuals in CNM and monogamous relationships?*

Results of an analysis of covariance (ANCOVA), with controls for sexual frequency, gender, age, and relationship duration, found no significant differences between CNM and monogamous participants in reported levels of relationship satisfaction,  $F(1, 319) = .47, p = .49$ ; CNM estimated mean = 15.94,  $SE = .30$ , CI [15.35, 16.54], monogamous estimated mean = 16.21,  $SE = .23$ , CI [15.75, 16.66], or sexual satisfaction,  $F(1, 319) = .05, p = .82$ ; CNM estimated mean = 45.86,  $SE = .82$ , CI [44.25, 47.47], monogamous estimated mean = 45.62,  $SE = .63$ , CI [44.38, 46.85]. See Online Supplementary Material 2 for models without the covariates.

### *What are the associations between self-determined sexual motives, sexual need satisfaction, and relational and sexual satisfaction among both CNM and monogamous participants?*

Based on prior research using a SDT motivational framework (Blais, Sabourin, Boucher, & Vallerand, 1990; Brunell & Webster, 2013), we created a weighted composite measure of *self-determined motives* by assigning weights to each of the PLOC-S subscales (except for the drive scale, which has not been used in previous research using SDT when creating a weighted scale of self-determined motives; see Online Supplementary Material 2). In the SDT literature, *personal intrinsic motives*, *relational intrinsic motives*, and *integrated-identified motives* are considered self-determined motives (Deci & Ryan, 2000, 2012), and these scales were given weights of +2, +2, and +1, respectively. In contrast, *introjected regulation*, *extrinsic regulation*, and *amotivation* are considered less self-determined forms of motivation (i.e., controlling motives) and were assigned weights of -1, -2, and -2, respectively. To determine whether the associations between sexual motives, sexual need fulfillment, and relational outcomes

**Table 2.** Cronbach's *α*s, descriptive statistics, and correlations for key variables for the full sample.

Variable	<i>a</i>	<i>M</i>	<i>SD</i>	1	2	3	4	5	6	7	8	9	10	11
1. Personal intrinsic (+2)	.89	5.79	1.65											
2. Relational intrinsic (+2)	.93	5.50	1.80	.59*										
3. Integrated-identified (+1)	.88	2.73	0.93	.68*	.71*									
4. Introjected (-1)	.87	-0.96	0.77	-.08	-.12 <sup>†</sup>	-.13 <sup>†</sup>								
5. Extrinsic (-2)	.84	-1.27	1.53	.16 <sup>†</sup>	.06	.04	.78*							
6. Amotivation (-2)	.80	-1.00	1.51	.04	.09	.10	.57*	.60*						
7. Need satisfaction	.88	52.15	9.27	.48**	.58*	.49*	.33*	.45*	.38*					
8. Dyadic Adjustment Scale	.82	15.97	3.42	.33*	.49*	.33*	.22*	.30*	.20*	.63*				
9. New Sexual Satisfaction Scale	.93	45.55	9.51	.48*	.58*	.47*	.05	.11	.07	.66*	.56*			
10. Age		34.13	9.50	-.03	.01	-.01	.20*	.19*	.17 <sup>†</sup>	.10	.23	.03		
11. Sexual frequency		8.42	7.65	.21*	.18 <sup>†</sup>	.18 <sup>†</sup>	.06	.03	.02	.21*	.18 <sup>†</sup>	.37	-.13 <sup>†</sup>	
12. Relationship length (in months)		81.90	90.39	-.13 <sup>†</sup>	-.08	-.13 <sup>†</sup>	.16 <sup>†</sup>	.16 <sup>†</sup>	.14 <sup>†</sup>	.03	.09	-.07	.58*	-.16 <sup>†</sup>

Note. <sup>†</sup>*p* < .05; \**p* < .01; \*\**p* < .001.

**Table 3.** Cronbach's  $\alpha$ s, descriptive statistics, and correlations for key variables for CNM and monogamous samples.

Variable	CNM			Monogamous														
	$\alpha$	M	SD	$\alpha$	M	SD												
							1	2	3	4	5	6	7	8	9	10	11	12
1. Personal intrinsic ( <sup>1</sup> 2)	.84	6.20	1.33	.90	5.50*	1.79	.47*	.54*	.07	.30*	.15	.50*	.26"	.47*	.14	.15	-.01	
2. Relational intrinsic ( <sup>1</sup> 2)	.90	5.57	1.67	.94	5.46	1.88	.66*	.63*	-.03	-.08	.17 <sup>†</sup>	.53*	.35*	.45*	.01	.14	-.02	
3. Integrated-identified ( <sup>1</sup> 1)	.83	2.87	0.80	.90	2.64 <sup>†</sup>	1.00	.73*	.75*	-.02	.07	.19 <sup>†</sup>	.41 <sup>†</sup>	.26"	.37*	.01	.10	-.13	
4. Introjected (-1)	.84	-0.97	0.70	.88	-0.95	0.82	-.14 <sup>†</sup>	.19"	.77*	.62*	.62*	.44*	.32*	.20 <sup>†</sup>	.15	.16	.08	
5. Extrinsic (-2)	.85	-1.21	1.51	.84	-1.31	1.55	.08	.05	.02	.79*	.67*	.52*	.34*	.23"	.17 <sup>†</sup>	.09	.12	
6. Amotivation (-2)	.86	-0.99	1.65	.76	-1.00	1.41	-.03	.03	.04	.54*	.56*	.47*	.28"	.16	.12	.08	.14	
7. Need satisfaction	.93	52.05	9.00	.89	52.22	9.47	.50*	.62*	.26*	.40*	.31*	.69*	.54*	.67*	.13	.14	.11	
8. Dyadic Adjustment Scale	.80	15.66	3.40	.83	16.15	3.42	.40*	.58*	.16 <sup>†</sup>	.28*	.14 <sup>†</sup>	.69*	.54*	.59*	-.09	.18 <sup>†</sup>	.22 <sup>†</sup>	
9. New Sexual Satisfaction Scale	.86	46.26	9.29	.94	45.09	9.65	.50*	.66*	.52*	.03	-.01	.66*	.56*	.08	.35*	.11	.28"	
10. Age		34.01	9.28		34.20	10.40	-.10	.01	-.01	.22"	.21"	.07	.08	.01	-.03	.28"		
11. Sexual frequency		9.69	9.43		7.54 <sup>†</sup>	5.99	.24"	.23"	-.01	-.04	-.04	.29*	.23"	.39*	.23"	-.03	-.03	
12. Relationship length (in months)		57.13	59.69		96.93*	101.96	-.12	-.074	-.09	.19"	.21"	.17 <sup>†</sup>	.02	.04	-.11	.69*	-.22"	

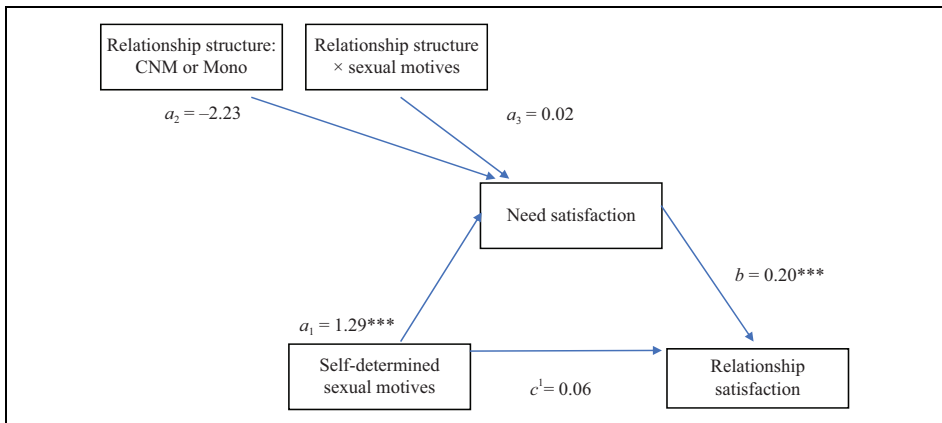
Note. Correlations above the diagonal are for CNM participants, correlations below the diagonal are for monogamous participants. CNM: consensually nonmonogamous.

<sup>†</sup> $p < .05$ ; \* $p < .01$ ; \*\* $p < .001$ .

**Table 4.** MANCOVA assessing differences between CNM and monogamous samples on motivations controlling for age, sexual frequency, and relationship length.

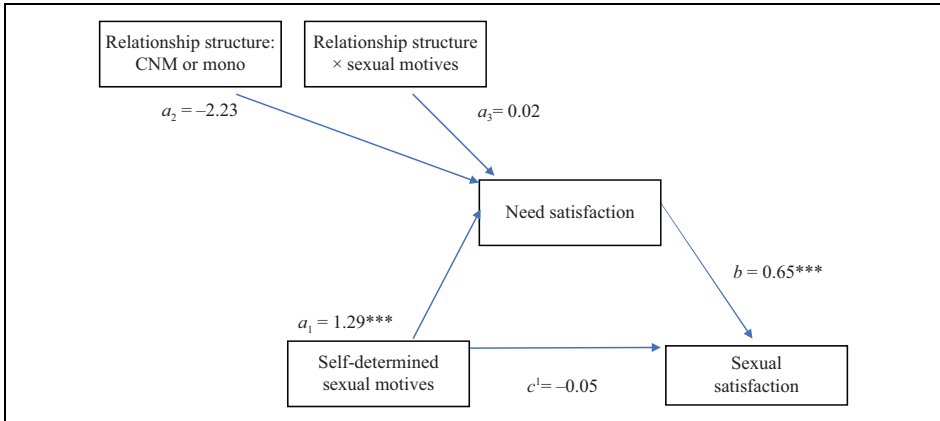
Motivation	df	F	p	Partial $\eta^2$	Sample	Estimated means	95% CI
							[Lower bound, Upper bound]
Personal intrinsic (+2)	1	10.31	.001	.03	CNM	3.08	[2.94, 3.23]
					Mono	2.78	[2.67, 2.89]
Relational intrinsic (+2)	1	0.34	.56	.001	CNM	2.82	[2.66, 2.98]
					Mono	2.76	[2.63, 2.88]
Integrated-identified (+1)	1	4.15	.04	.01	CNM	1.58	[1.49, 1.67]
					Mono	1.46	[1.39, 1.53]
Introjected (-1)	1	0.05	.82	.000	CNM	0.93	[0.79, 1.06]
					Mono	0.95	[0.84, 1.05]
Extrinsic (-2)	1	2.55	.11	.01	CNM	0.53	[0.39, 0.66]
					Mono	0.66	[0.56, 0.77]
Amotivation (-2)	1	2.31	.13	.01	CNM	0.38	[0.26, 0.51]
					Mono	0.51	[0.41, 0.60]
Drive Motivation Scale	1	10.27	.001	.03	CNM	2.34	[2.15, 2.52]
					Mono	1.95	[1.81, 2.10]

Note. CNM: consensually nonmonogamous; Mono: monogamous; MANCOVA: multivariate analysis of covariance.



**Figure 1.** Moderated mediation model for sexual motives, need satisfaction, and relationship satisfaction.

were conditional upon being in a CNM or monogamous relationship, we conducted two moderated mediational analyses (one for relationship satisfaction and other for sexual satisfaction). In both models, we tested whether the effect of sexual motives on sexual need fulfillment was moderated by relational structure (i.e., indirectly impacting relationship or sexual satisfaction; see Figures 1 and 2). These analyses were conducted using Hayes’s (2013; Model 7) PROCESS Macro on SPSS (version 20), which provides



**Figure 2.** Moderated mediation model for sexual motives, need satisfaction, and sexual satisfaction.

bias-corrected, bootstrapped confidence intervals ( $N = 10,000$  random samples in the current study) for each indirect effect. Moderated mediation is considered significant if the confidence intervals of the index of moderated mediation do not contain zero. Unstandardized coefficients are reported for all models. All models were run with, and without, the covariates. Though coefficients changed slightly, a similar pattern of results emerged in the models including the covariates. As previous research suggests that each of these covariates impacts sexual motives and/or relational outcomes, we kept the covariates in the models presented here. Models without the covariates can be found in Online Supplementary Material 3.

After entering our standard control variables, there was no significant conditional indirect effect of relational structure on the association between self-determined motives and relationship satisfaction, through sexual need fulfillment (index of moderated mediation = .0033,  $SE = .03$ ,  $CI [-.0648, .0726]$ ; CNM  $b = .26$ ,  $CI [.19, .35]$ , monogamous  $b = .26$ ,  $CI [.19, .35]$ ; see Figure 1 and Table 5). Similarly, relational structure did not significantly impact the indirect link between sexual motives and sexual satisfaction via sexual need fulfillment (index of moderated mediation = .0107,  $SE = .12$ ,  $CI [-.2019, .2532]$ ; CNM  $b = .85$ ,  $CI [.61, 1.15]$ ; monogamous  $b = .83$ ,  $CI [.64, 1.06]$ ; see Figure 2 and Table 6).

### *Mediational analyses of sexual motives, sexual need satisfaction, and relational outcomes*

As the associations between our key variables were not conditional upon participants' relational structure, we followed Hayes' (2013) recommendation to remove the non-significant interaction and examined two simple mediational models to test the link between sexual motives, sexual need satisfaction, and relational outcomes with the full sample (i.e., Model 4, Hayes, 2013). Self-determined sexual motives significantly

**Table 5.** Least squares regression results for moderated mediation analysis of sexual motives, need satisfaction and relationship satisfaction.

Predictors and covariates		Need satisfaction (M)		Relationship satisfaction (Y)		
		<i>b</i>	<i>t</i>	<i>b</i>	<i>t</i>	
Sexual motives	<i>a</i> <sup>1</sup>	1.29	15.13***	<i>c</i> <sup>1</sup>	0.06	1.46
Relationship structure	<i>a</i> <sup>2</sup>	-2.23	-1.17		-	-
Relationship structure × sexual motives	<i>a</i> <sup>3</sup>	0.02	0.11		-	-
Need satisfaction		-	-	<i>b</i> <sup>1</sup>	0.20	8.64***
Constant		41.05	21.00***		5.04	4.18***
Covariates						
Gender		-1.98	-3.07**		0.24	0.88
Age		-0.01	-0.15		-0.03	-1.60
Relationship length		0.001	0.19		0.005	2.47*
Sexual frequency		0.13	2.61*		0.03	1.40
		<i>R</i> <sup>2</sup> = .54		<i>R</i> <sup>2</sup> = .40		
		<i>F</i> (7, 315) = 52.50***		<i>F</i> (6, 316) = 35.36		

Note. \**p* < .05; \*\**p* < .01; \*\*\**p* < .001.

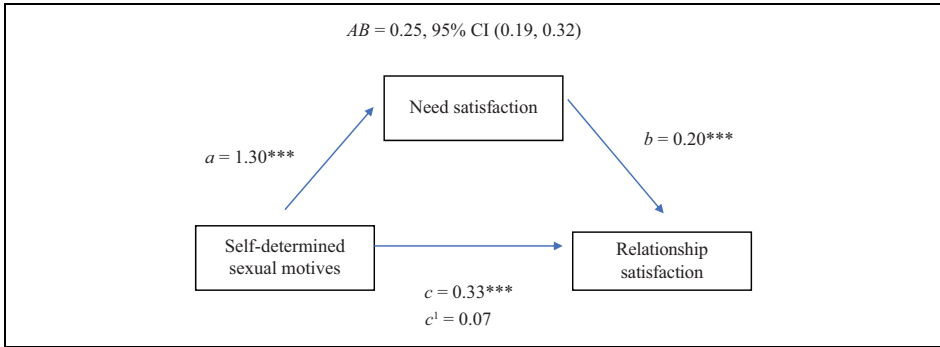
**Table 6.** Least squares regression results for moderated mediation analysis of sexual motives, need satisfaction and relationship satisfaction.

Predictors		Need satisfaction (M)		Sexual satisfaction (Y)		
		<i>b</i>	<i>T</i>	<i>b</i>	<i>T</i>	
Sexual motives	<i>a</i> <sup>1</sup>	1.29	15.13***	<i>c</i> <sup>1</sup>	-0.05	-0.48
Relationship structure	<i>a</i> <sup>2</sup>	-2.23	-1.17		-	-
Relationship Structure × Sexual Motives	<i>a</i> <sup>3</sup>	0.02	0.11		-	-
Need satisfaction		-	-	<i>b</i> <sup>1</sup>	0.65	10.72***
Constant		41.05	21.00***		7.22	2.28*
Covariates						
Gender		-1.99	-3.07**		1.00	1.41
Age		-0.01	-0.15		0.06	1.25
Relationship length		0.001	0.19		-0.009	-1.66
Sexual frequency		0.13	2.61*		0.27	5.17***
		<i>R</i> <sup>2</sup> = 0.54		<i>R</i> <sup>2</sup> = 0.49		
		<i>F</i> (7, 315) = 52.50***		<i>F</i> (6, 316) = 49.59***		

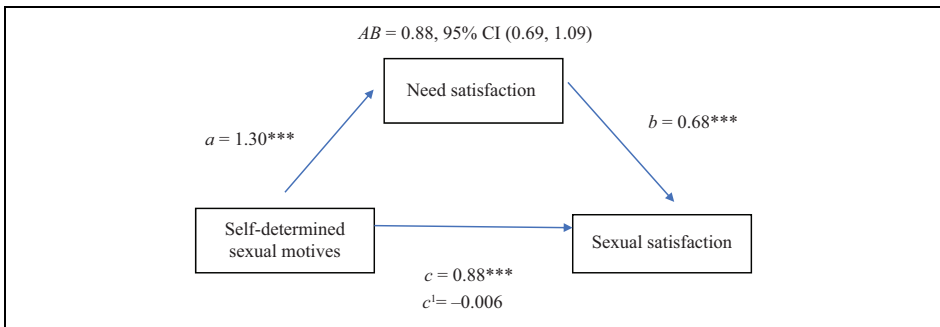
Note. \**p* < .05; \*\**p* < .01; \*\*\**p* < .001.

impacted relationship satisfaction,  $F(4, 310) = 25.28, p < .001, r^2 = .25$ ; *Path c* = .33,  $t(310) = 9.85, p < .001$ . However, self-determined motives indirectly influenced relationship satisfaction through its effect on sexual need satisfaction. As shown in Figure 3, participants who had more self-determined motives reported greater levels of sexual need satisfaction,  $F(4, 310) = 80.00, p < .001, r^2 = .51$ ; *Path a* = 1.30,  $t(310) = 17.66, p < .001$ ; and those with higher levels of sexual need satisfaction reported higher





**Figure 3.** Mediation model for sexual motives, need satisfaction, and relationship satisfaction.



**Figure 4.** Mediation model for sexual motives, need satisfaction, and sexual satisfaction.

levels of relationship satisfaction,  $F(5, 309) = 38.94, p < .001, r^2 = .39$ , Path  $b = 0.20$ ,  $t(309) = 8.42, p = .001$ . The bias-corrected bootstrap confidence interval for the indirect effect was above 0 ( $ab = .25$ ; CI [.19, .32]). The direct effect of self-determined sexual motives on relationship satisfaction was not significant (Path  $c' = .07$ ,  $p = .08$ ).

Further, sexual motives impacted sexual satisfaction,  $F(4, 310) = 22.97, p < .001, r^2 = .23$ ; Path  $c = .88$ ,  $t(310) = 9.22, p < .001$ , but this association was mediated by sexual need satisfaction (see Figure 4). Participants who had more self-determined motives reported greater levels of sexual need satisfaction,  $F(4, 310) = 80.00, p < .001, r^2 = .51$ ; Path  $a = 1.30$ ,  $t(310) = 17.66, p < .001$ ; and those with higher levels of sexual need satisfaction reported higher levels of sexual satisfaction,  $F(5, 309) = 48.37, p < .001, r^2 = .44$ , Path  $b = 0.68$ ,  $t(309) = 10.77, p < .001$ . The bias-corrected bootstrap confidence interval for the indirect effect was above 0 ( $ab = .88$ ; CI [.69, 1.09]), and, here again, the direct effect of self-determined sexual motives on relationship satisfaction was not significant (Path  $c' = -0.006, p = .996$ ).

Although our theoretical model suggests that sexual motives impact relational outcomes through sexual need satisfaction, it is possible that these associations operate in an alternative direction. Sexual motives may act as a mediator between sexual need satisfaction and relational outcomes. That is, when individuals feel that they are fulfilled in their sexual relationship, they may engage in sex more frequently for self-determined reasons and thus feel increased sexual and relational satisfaction. We tested this alternative relationship in a series of moderated mediational and simple mediational models. In both moderated mediational models, we tested whether the effect of sexual need fulfillment on sexual motives was moderated by relational structure (i.e., indirectly impacting relationship or sexual satisfaction). All models tested included the covariates used in the previous models. There was no significant conditional indirect effect of relational structure on the association between sexual need fulfillment and relationship satisfaction, through sexual motives (index of moderated mediation =  $-.003$ ,  $SE = .005$ ,  $CI [-.0179, .0020]$ ; CNM  $b = .02$ ,  $CI [-.0053, .0504]$ ; monogamous  $b = .02$ ,  $CI [-.0069, .0577]$ ). Similarly, there was no conditional indirect effect of relational structure on the link between sexual need fulfillment and sexual satisfaction, through sexual motives (index of moderated mediation =  $.003$ ,  $SE = .009$ ,  $CI [-.0082, .0328]$ ; CNM  $b = -.02$ ,  $CI [-.1107, .0651]$ ; monogamous  $b = -.02$ ,  $CI [-.1201, .0764]$ ). Simple mediation determined that there was no significant indirect effect of sexual need fulfillment on relationship satisfaction or sexual satisfaction (via sexual motives; see Online Supplementary Material 3, Figures 5–8 for coefficients).

## Discussion

The purpose of our study was 3-fold (1) to examine whether individuals in CNM and monogamous relationships report similar or different motives for engaging in partnered sexual activity, (2) to determine whether CNM and monogamous participants reported similar or different levels of relational and sexual satisfaction, and (3) to investigate the associations between self-determined sexual motives, sexual need satisfaction, and relational and sexual satisfaction among both CNM and monogamous participants.

The CNM and monogamous participants in the current sample engaged in sex for similar reasons, though CNM participants were more likely to report motives related to the enjoyment of sex itself, their own values regarding sex and relationships, and to satisfy their own sex drive. It is possible that these differences may be accounted for by differing attitudes toward sex. The CNM individuals may have more positive views of sex compared to monogamous individuals or place a higher value on sex as an integral part of their relationship(s); that is, Morrison et al. (2013) found that polyamorous individuals had more permissive and positive attitudes toward casual sex when compared to monogamous participants. Research has also found that a greater endorsement of sexual sensation-seeking, sex positivity, and need for sex positively predict attitudes toward polyamory (Johnson, Giuliano, Herselman, & Hutzler, 2015).

In contrast to the perceptions of CNM relationships as less satisfying and healthy (Conley, Ziegler, Moors, Matsick, & Valentine, 2013; Conley et al., 2017; Rubel & Bogaert, 2014), our CNM and monogamous participants reported no significant difference in their level of relationship and sexual satisfaction. This finding is consistent with those of several

other recent studies (i.e., Conley et al., 2017; Parsons et al., 2012; Rubel & Bogaert, 2014; Séguin et al., 2016) that have examined the aspects of relational quality among gay male, CNM, polyamorous, and monogamous couples. Taken together, these studies indicate that relational structure, in itself, is not a significant differentiator of relational outcomes and that CNM relationships are of no greater or lesser quality than monogamous relationships.

Our study provides further evidence that SDT can be applied to sexual and relational outcomes (Brunell & Webster, 2013; Patrick, Knee, Canevello, & Lonsberry, 2007; Smith, 2007). Consistent with SDT, we found support for our predictions regarding the association between self-determined motives, sexual need fulfillment, and relational outcomes. Further, our results indicate that the link between these variables is similar for both CNM and monogamous individuals. That is, when both CNM and monogamous participants reported feeling more autonomous in their sexual interactions, they indicated that their sexual needs had been met and, in turn, reported greater relationship and sexual satisfaction within their (primary) relationship. This finding is consistent with studies of monogamous participants, wherein self-determined motives were associated with greater need satisfaction and relational outcomes (Brunell & Webster, 2013; Smith, 2007). Our study extends Brunell and Webster's (2013) work by examining these relationships among participants who are consensually engaging in sexual and/or romantic partnerships with more than one person.

The results of the mediation analyses indicate that for both CNM and monogamous participants, engaging in sex with a partner(s) may be a way to fulfill various relational and sexual needs. That is, sexual need fulfillment is one mechanism through which sexual motives enhance or detract from relational well-being. Common stereotypes suggest that polyamorous people engage in additional partnerships because they are not fulfilled by their primary partner, but recent research refutes this inference by showing that polyamorous individuals report high need fulfillment across multiple partners (Mitchell et al., 2014). Hence, perhaps this study's most important finding is that a person's motivations for engaging in sex were more central to relational well-being than was their relationship structure. When people feel in control of their sexual encounters and are engaging in sex because they value sex or want to experience pleasure and closeness, they are likely to feel more fulfilled and happier in their relationships, regardless of whether they are in a monogamous or CNM partnership.

Our study adds to the current literature on relational outcomes by providing a direct comparison of sexual and relational satisfaction between CNM and monogamous individuals. Except for a few recent studies (e.g., Conley et al., 2017; Morrison et al., 2013; Séguin et al., 2016), most have examined monogamous and CNM participants separately. Our research also employed a social psychological theory of motivation to explain and understand aspects of CNM relationships, which is a significant step forward as the study of CNM has been largely atheoretical (Barker & Landridge, 2010; Conley et al., 2017). However, the study is limited in several ways. First, sample size precluded examining the proposed theoretical model within CNM subgroups. Research indicates that there is significant heterogeneity within CNM relationships (Barker & Langdrige, 2010), and individuals in polyamorous, swinging, and open relationships endorse different relationship agreements (Barker & Langdrige, 2010; LaSala, 2004). However, the current study does provide a starting point from which to examine the interpersonal factors that impact relationship and sexual satisfaction among CNM partnerships.

Additional research comparing CNM subgroups would provide important information as to how sexual motives impact need satisfaction and relational outcomes in partnerships that focus primarily on extradyadic sexual interactions (e.g., swinging) or relationships where additional romantic connections are central to the relationship agreements (e.g., polyamory). Further, although adherents to SDT propose that the theoretical concepts are universal (LaGuardia & Patrick, 2008), it is possible that there are additional motives for sex among CNM individuals not included in the measure that may impact relational outcomes (e.g., motives related to authenticity and bringing one's whole self to their relationships—key aspects of motivations for engaging in CNM generally; De Santis, Wood, Milhausen, & Desmarais, 2016). As well, we acknowledge that the current analyses impose a quasi-causal mediational framework onto correlational data. While we proposed that sexual motives impact relational outcomes through sexual need fulfillment, it may be the case that when individuals feel their needs are satisfied, they seek out partnered sexual activity for more self-determined reasons and this impacts their relational and sexual satisfaction. However, in support of our own proposed causal model, the alternative models we tested did not provide evidence for this directional relationship. We suggest that future research should expand upon our findings to explore whether additional mediators (such as attitudes toward sex) impact the relationship between sexual motivation, need satisfaction, and relational outcomes.

Finally, we are aware that the nature of our data collection, whereby we explored participants' relationship with only one member of the couple/primary relationship, limits the scope of our study. Including information from additional partners would further extend our understanding of SDT and provide a fuller picture of the processes associated with CNM relationships. For example, in CNM individuals with more than one partner, we could explore whether having sex for self-determined reasons with one partner impacts the relational qualities with another partner and examine how this relates to one's need fulfillment. Future longitudinal research including information from both/all members of the primary relationship is critical to understand the relational dynamics of need fulfillment and how partners shape the relationship over time.

## Conclusion

To our knowledge, this is the first study to examine the relational outcomes among CNM individuals using an established psychological motivational perspective, extending the application of SDT to relationships that fall outside of traditional monogamous pairings. Researchers and clinicians working in this field can draw upon these findings to develop research and therapeutic programs based on nuanced understandings of CNM relationships rather than solely on data and assumptions derived from research on monogamous relationships or findings derived from descriptive studies on CNM individuals. Our research indicates that SDT is a useful framework for considering the impact of sexual motivation on relational outcomes among both monogamous and CNM individuals and highlights the importance of sexual need fulfillment in relationship functioning and well-being.

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## Supplemental Material

Supplementary material for this article is available online

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