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**Exploring the role of basic-need satisfaction for sexting among  
Swedish adolescents: A self-determination theory perspective**

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# Exploring the role of basic-need satisfaction for sexting among Swedish adolescents: A self-determination theory perspective

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**Abstract.** This study explores the role of satisfaction of basic psychological needs for adolescents' sexting, with an emphasis on how basic-need satisfaction relates to sexting for sexual purposes, instrumental/aggravated reasons and for body image reinforcement. The association between basic-need satisfaction and sexting frequency was also examined. In total, 366 Swedish adolescents enrolled in upper secondary school (Swedish *gymnasium*) completed an online survey. Basic-needs satisfaction was found to have no relation to sexting frequency. Multiple linear regressions showed small but significant relationships between basic-needs satisfaction and sexting for instrumental/aggravated reasons as well as for body image reinforcement, indicating that lower need satisfaction helped explain sexting for those motives. The strength of the relationships differed between boys and girls, highlighting sexting as a gendered phenomenon. This study contributes to a growing field of theoretically driven sexting research.

Today more and more of the lives of adolescents move online. With quick and easy access to several platforms through a smartphone almost everyone has an online life (Andersson, 2021). One frequent online phenomenon known to most of the younger generations is sexting. Sexting is here defined as the creating and sharing of nude, seminude or sexually explicit pictures or videos via the internet (Bianchi, Morelli, Baiocco, & Chirumbolo, 2016; Lenhart, 2009). Sexting prevalence differs between various studies, however there are literature reviews that point at a widespread prevalence of about 50% for adults and 10% for adolescents (Döring, 2014; Klettke, Hallford, & Mellor, 2014).

Whilst research indicates that sexting amongst teens is primarily perceived as a positive way of sexual interaction done within a romantic relationship (Lenhart, 2009), the phenomenon is also associated with risks and challenges (Cooper, Quayle, Jonsson, & Svedin, 2016), such as the unwanted sharing of sexting pictures or revenge porn. Studies on adolescent sexting behavior indicate that online risk taking (e.g., sharing personal information or harassing others) together with increasing age are the main predictors of increased sexting (Burén & Lunde, 2018; Lenhart, 2009).

Adolescence is the developmental period where one goes from being a child to becoming an adult (Steineberg, 2011). The adolescent also undergoes several cognitive and physical developments that are of importance for their overall development (Steineberg, 2011), which may make adolescents more vulnerable to risks of sexting (Burén & Lunde, 2018). It is also during adolescence, as a consequence of puberty, that sexual attraction increases and with that an urge to discover more about one's sexuality (Steinberg, 2011). The internet, and easy access to the privacy of smartphones, offer the adolescent several opportunities for such discovery (Burén & Lunde, 2018). Another important developmental task associated with adolescence is to incorporate the new body image that comes with puberty into the self (Erikson, 1970). Appearance feedback and sexual interaction are both behaviors that adolescents may use in order to receive validation for their body. In today's society this is not limited to physical encounters but can also be achieved online by sending or posting pictures

to receive feedback about one's body and appearance and thereby contributing to the larger task of integrating one's body image (Bianchi, Morelli, Baiocco, & Chirumbolo, 2021). The many changes and challenges that adolescents face have fueled a growing field of research on adolescents sexting behavior (Burén & Lunde, 2018; Cooper et al., 2016; Courtice & Shaughnessy, 2021; Döring, 2014; Le, 2021; Lenhart, 2009).

Adolescence is also characterized by social development and change as the adolescent spends more time with friends and less with the family (Steinberg, 2011). The parent-child relationship becomes more equal as the adolescent strives towards more autonomy, and the influence of peer-relations increases (Burén, 2020). Although the influence of relations to family and friends on adolescent sexting is a rather new subject to sexting research there are some studies that have examined this (Bianchi, Morelli, Baiocco, Cattelino, Laghi, & Chirumbolo, 2019; Burén & Lunde, 2018; Jonsson, Priebe, Bladh, & Svedin, 2014). One study indicates that, for boys, higher friend support was related to an increased likelihood to send sexts to a romantic partner, online friends or strangers, whilst higher family support was related to a decreased likelihood to send sext to friends or strangers (Burén & Lunde, 2018). For girls, friend support was not related to sexting experiences, and family support had only a weak relationship to a decreased likelihood of sending sexts to friends (Burén & Lunde, 2018). These results also contribute to the understanding of sexting as a gendered phenomenon.

The complex nature of sexting calls for a more detailed study of various sexting motives. Bianchi et al. (2016) have formulated three distinct motives for sexting. These are sexual purposes (exploring ones sexuality, increasing intimacy), instrumental/aggravated reasons (relational aggression, cyber bullying, sexting in exchange for money or gifts) and body image reinforcement (sexting in order to get feedback on one's body) (Bianchi et al., 2016, 2021). Studies show that sexual purposes are the most common motive, followed by body image reinforcement, and then, least common, instrumental/aggravated reasons (Bianchi et al., 2016, 2021). There also seems to be a difference between boys and girls as boys have reported more instrumenta/aggravated reasons for sexting (Bianchi et al., 2021). A recent study indicates that sexting expectancies differ between the motives; when sexting for sexual purposes the outcome of the sexting behavior is judged more positively and when sexting for instrumental/aggravated reasons the outcome is judged more negatively (Currin, 2022). In order to develop more knowledge about what could predict and explain certain types sexting it is important to differentiate various motives for sexting and in that way add nuances to the complexity of sexting behavior (Bianchi et al., 2019; Bianchi et al., 2016, 2021; Currin, 2022; Dodaj, Sesar, & Novak, 2022; Döring, 2014; Wolak, Finkelhor, & Mitchell, 2011).

Whilst the field of sexting research continues to grow, Courtice and Shaughnessy (2021) formulate the lack of theoretical frameworks as one of the main challenges with today's research on sexting, arguing that a wider use of offline theories would add to the understanding of the behaviors behind sexting as well as to the more general understanding of sexual activity supported by technology. The present study therefore aims to make use of the theoretical framework known as self-determination theory (SDT) formulated by Deci and Ryan (1985). More specifically, the focus will be on the sub theory called basic-need theory in the analysis of data, but also expand upon wider SDT knowledge in the discussion (Ryan & Deci, 2008).

According to basic-needs theory there are three basic psychological needs that must be fulfilled in order for humans to develop higher levels of self-determination: the need for autonomy (being in control of one's actions), the need for competence (experiencing a sense of mastery) and the need for relatedness (a feeling that one belongs) (Ryan & Deci, 2020). By thwarting the fulfilment of any of the three basic needs one causes damage to both motivational and psychological well-being (Ryan & Deci, 2020). Research indicates that when the basic needs are being thwarted people become vulnerable to maladaptive coping mechanisms, seeking fast satisfaction for their needs and/or escape from the unsatisfying situation resulting

in more risk full behavior (Ryan & Deci, 2008). Engagement in risk-behavior can also be seen as less successful ways of satisfying the basic needs. For example, adolescents may act to achieve the “perfect body image” in order to satisfy the need for competence, or push themselves beyond their limits to be accepted in a sexual relationship to fulfill the need for relatedness (Neighbors et al., 2007).

SDT is the larger theory containing several sub-theories such as basic-need theory, therefore basic-needs theory must be used in the light of the larger theoretical framework. According to SDT, motivation can be situated on a continuum between intrinsic and extrinsic motivation (Ryan & Deci, 2020). More intrinsic motivation is associated with increased self-determination (e.g., that one does something from a sense of free will) whilst more extrinsic motivation is associated with increased external control and regulation (e.g., rewards and punishments or deadlines) (Ryan & Deci, 2020). Basic-needs satisfaction is theorized to contribute to the development of more self-determined styles of motivation, in such a way that greater fulfillment of basic-needs furthers motivational health (Ryan & Deci, 2008). Studies show that less controlled motivation together with greater basic-need satisfaction is associated with an array of positive outcomes (Deci, Ryan, Gagné, Leone, Usunov, & Kornazheva, 2001; Ryan & Deci, 2020). Thus, combining measurements of basic-need satisfaction with knowledge of the various types of motivations, the knowledge of motivational health can expand.

Even though the studies on sexting motives (Bianchi et al., 2016, 2021; Currin, 2022; Dodaj et al., 2022) have not used a SDT approach it is possible to understand it from an SDT standpoint (Le, 2021). Sexting to flirt or initiate consensual sexual interaction (sexual purposes) might be viewed as more self-determined while sending sexts as a gift or in exchange for money or favors is a more controlled type of motivation (Le, 2021; Ryan & Deci, 2008). Adding a SDT perspective to the understanding of sexting motives could contribute both to the emergent SDT research on sexting as well as to the general research on sexting motives (Courtice & Shaughnessy, 2021; Le, 2021)

## **Purpose and research questions**

Building upon what is known about sexting and its correlates, and adding to the emergent SDT-based knowledge about this online phenomenon (Le, 2021), the aim of this study is to further explore sexting using the theoretical framework presented by SDT and basic-needs theory. I argue that by building upon what is known of the role of basic-need satisfaction in human behavior, and applying that to the research on sexting, this study can contribute to the understanding of motives for sexting as well as to adolescent sexting behavior in general. Therefore, the aim of this study is to deepen our understanding of adolescents’ sexting behaviors as well as exploring the influence of basic-need satisfaction for Swedish adolescents in the relational contexts of friends and family. The study also aims to explore how basic-need satisfaction is associated with the motives for sexting specified by Bianchi and colleagues (2016). The research questions are as follow:

1. How is basic-need satisfaction associated with the amount of sexting done by adolescents?
2. In what way, and to what extent, can basic-need satisfaction explain and further the understanding of adolescents’ motives for sexting?

## Method

### Participants

The present study makes use of data collected within the research project OWN YOUR BODY (Burén & Lunde, 2018). Participants were recruited based on their participation in the projects first survey. The first study enrolled participants from 10 primary schools in western Sweden and contained students of various socioeconomic and cultural backgrounds (for further information about the first survey, see Buren & Lunde, 2018). Two years after the first survey researchers distributed a second survey to all who participated in the firs. Thus it can not be guaranteed that participants in the second survey share the economic and cultural diversity present in the first group of participants. At the time of the second survey (the one used for this study) participants were between 14 and 18 years old. Active parental consent was obtained for all adolescents under the age of 15. Older adolescents were asked directly for consent. Participation was rewarded with a cinema ticket. Information about the project was summarized and presented to all participants in the beginning of the survey. All participation was voluntary, and participants was informed that they could cancel their participation at any time without having to explain why. Before the present author received the data set, all participants were anonymized.

For this study only participants who answered that they had sent sexts during the last year was included. Due to a low number ( $n = 4$ ) of participants who answered neither girl nor boy as their gender, this group is also excluded from further analysis.

Finally, participants who had answered just a small part of the survey were also excluded from further analysis ( $n = 16$ ). The final group of participants consisted of 231 girls and 135 boys. For demographic data see Table 1. Demographic data was somewhat alike from the first survey, with the main difference being the uneven gender distribution (Burén & Lunde, 2018). Thus it can be assumed that participants in the second survey are somewhat heterogenous concerning cultural and economic background.

Table 1.

<i>Demographic data</i>	
Characteristics	All participants (n = 366), % (no.)
<i>Gender</i>	
Boys	36.9% (135)
Girls	63.1% (231)
<i>Living situation</i>	
One parent	17.5% (64)
Both parents	57.7% (211)
Alternating between both parents	17.5% (64)
Living alone	1.6% (6)
Other	5.7% (21)
<i>Family economic situation (perceived)</i>	
Large economic difficulties	2.7% (10)
Some economic difficulties	12.3% (45)
Somewhat good	41.3% (151)
Very good	39.6% (145)
Don't know	4.1% (15)

## **Procedure**

The survey was administered via the online survey platform Qualtrics. The survey was distributed via mail to all who had participated in the previous survey. The information in the survey included e-mail and phone number to the researchers and specified that all participants could contact the researchers if questions were raised. All participants also received information about where they could turn if the survey had caused uncomfortable feelings or thoughts. All procedures were approved by the Central Ethics Review Board in Gothenburg, Sweden (case number 365-16).

## **Measures**

### ***Basic psychological need satisfaction***

To measure basic-need satisfaction a version of the basic psychological need satisfaction scale which specifically measures basic-need satisfaction in the relationship domain was used. This scale is called the Basic psychological need satisfaction in relationships scale (hereby called BPNS-R) and was developed by La Guardia, Ryan, Couchman and Deci (2000). In the present study two adaptations of the scale were used, one asking about friends and one about the family. Items follow the principals of this example: “When I am with my family, I feel like a competent person” and “When I am with my friends, I feel controlled and pressured to be certain ways”. Responses are given on a scale from one to seven where one is “not true at all” and seven is “very true”. The scale can be scored both as three subscales (autonomy, competence and relatedness) or as one whole scale calculating the mean of each participant. This study makes use of the whole scale option. The BPNS-R consists of nine items in total. Cronbach’s alpha was .86 both for BPNS-R Family and for BPNS-R Friends.

### ***Digital risk behavior***

Digital risk behavior was measured on a seven-item scale used by Ybarra et al. (2007). The questions asked about how often, during the last year, participants had posted personal information online or spoken to someone they only met online. Adolescents answered 1 = “never”, 2 = “one time”, 3 = “two times”, 4 = “three to five times” or 5 = “six times or more”. A composite score for all seven items was calculated. Cronbach’s alpha for digital risk behavior was .63.

### ***Sexting behavior***

Participants were asked to rate how often they had sexted during the last year. Participants recorded answers on a scale from one to five (1 = never, 5 = very often) for five different receivers (a boyfriend/girlfriend, someone they have only met online etc.). The five items were then summed up, and the variable collapsed into three categories, first excluding all participants who had not sent any sexts during the last year (summed scores ranged from 5 to 20). Based on the spread of responses the three categories were derived. Participants assigned to the low frequency group (total score of 6–7) had typically sexted once or twice to someone and the medium frequency group (total score of 8–9) included adolescents who had sexted on several occasions and sometimes to different sexting partners, whereas the high frequency group (total score of 10–20) included participants who had sexted on several occasions and to several sexting partners. Due to the non-normality of the data the group sizes are not equal. Higher frequencies were more uncommon than lower, for group sizes see Table 2.

Table 2.

*Group membership based on sexting frequency for boys and girls*

	Girls		Boys	
	N	%	N	%
Low frequency	111	48.1	71	52.6
Medium frequency	73	31.6	33	24.4
High frequency	47	20.3	31	23
Total	231	100	135	100

***Sexting motives***

Sexting motivations were measured with the sexting motivation questionnaire (SMQ) (Bianchi et al., 2016). The SMQ consists of 13 items split between three subscales, sexual purposes, aggravated/instrumental reasons and body image reinforcement. Participants were asked to rate each item on a scale from one to five where one is “never” and five is “always”. Items followed the format of these examples; “sometimes I send sexts to feel wanted” [sexual purposes], “sometimes I send sexts in exchange for money or gifts” [aggravated/instrumental sexting] and “sometimes I send sexts to verify that my body is okay” [body image reinforcement]. The subscales are derived by calculating a mean for each subscale. The subscales “sexual purposes” and “instrumental/aggravated reasons” consisted of five items each and the last subscale, “body image reinforcement”, consisted of three items. Cronbach’s alpha was .80 for sexual purposes, .79 for instrumental/aggravated reasons and .92 for body image reinforcement.

**Data analysis**

All statistical analyses were made with IBM SPSS version 28.

All study variables were checked for normality using both skewness and Shapiro-Wilk’s test. Due to high skewness all variables were transformed using a log 10 transformation for the purpose of statistical testing. Even after transformations all variables remained somewhat skewed.

The data was screened for missing values using Little’s MCAR test,  $\chi^2(950) = 914.87$ ,  $p = .788$ . Since Little’s MCAR test was non-significant it was assumed that data was missing completely at random. Due to the low amount of missing data (< 3%) no measures were taken to replace missing values (Field, 2018). Listwise deletion was used for all analysis and therefore sample sizes differ somewhat between each test.

To answer the first research question, a series of one-way ANOVAs were used to test for differences between the BPNS-R means of the various groups of sexting frequency. Levene’s test showed that the variance for BPNS-R Family for girls was equal,  $F(2, 228) = 1.435$ ,  $p = .240$ . Levene’s test also showed that the variance for BPNS-R Friends for girls was equal,  $F(2, 228) = .507$ ,  $p = .603$ . For boys Levene’s test showed equal variance for both BPNS-R Family,  $F(2, 132) = 1.495$ ,  $p = .228$ , and BPNS-R Friends,  $F(2, 132) = 2.439$ ,  $p = .091$ .

To answer the second research question, a series of multiple linear regression analyses were employed to test the unique influence of the basic-need variables on the various motives for sexting, while controlling for digital risk behavior. Regression analyses were run separately for boys and girls. Previous research has shown that online risk taking is among the strongest predictors for sexting behavior and that sexting as a phenomenon is gendered (Bianchi et al., 2021; Burén & Lunde, 2018; Currin, 2022; Klettke et al., 2014; Lenhart, 2009).

## Results

### Basic-needs and sexting behavior

In order to explore the first research question (how is basic need satisfaction associated with the amount of sexting done by adolescents?), a series of one-way ANOVAs was employed, comparing the means of the BPNS-R scales of the three groups of sexting frequencies [sexting groups: low vs medium vs high].

#### *Girls*

The three groups of sexting frequencies did not differ significantly on BPNS-R Family,  $F(2, 228) = 0.175$ ,  $p = .840$ ,  $\eta^2 = .002$ , thus indicating that there were no group mean differences regarding the degree of basic psychological needs satisfaction in the family.

There were no significant differences among the sexting frequency groups on the BPNS-R Friends mean,  $F(2, 228) = 0.681$ ,  $p = .507$ ,  $\eta^2 = .006$ , thus indicating that there were no group mean differences regarding the degree of basic psychological needs satisfaction with friends.

#### *Boys*

The three groups of sexting behavior did not differ significantly on the BPNS-R Friends scale,  $F(2, 132) = 0.314$ ,  $p = .731$ ,  $\eta^2 = -.005$ . This indicates that there were no group mean differences regarding the degree of basic psychological needs satisfaction in the family.

Lastly, no significant difference among the groups was found on the BPNS-R Friends either,  $F(2, 132) = 0.415$ ,  $p = .661$ ,  $\eta^2 = -.006$ , thus indicating that there were no group mean differences regarding the degree of basic psychological needs satisfaction with friends.

Table 3.

*Correlation matrix using listwise deletion with girls in the upper triangle and boys in the lower triangle.*

Measures	1.	2.	3.	4.	5.	6.
1. Sexual purposes		.089	.262**	-.015	-.021	.307**
2. Instrumental/ aggravated	.120		.256**	.203**	.229**	.200**
3. Body image reinforcement	.395**	.384**		.221**	.218**	.198**
4. BPNS-R Family	.091	.172	.252**		.364**	.161*
5. BPNS-R Friends	.157	.170	.338**	.633**		.083
6. Digital risk behavior	.223*	.098	.329**	.055	.107	

Note. Upper triangle for girls (N=231) and lower triangle for boys (N=134).

Note. Higher score on BPNS-R indicates a lower degree of basic psychological need satisfaction in the respective relationship domain (these scores are transformed using a log10 transformation)

\*\* . Correlation is significant at the 0.01 level.

\* . Correlation is significant at the 0.05 level.

## Basic-needs and sexting motives

For the second research question the unique influence of BPNS-R Family, BPNS-R Friends and the control-variable digital risk behavior for the three sexting motives assessed by the SMQ was evaluated employing a series of multiple regression analyses.

Prior to running the regression analyses all variables were correlated using a Pearson correlation (see table 3). Mainly small and medium effect sizes were observed. Correlations differed somewhat between boys and girls. Following up on the correlations, linear regression was used to test predictors for each sexting motive for boys and girls separately. These results are presented in table 4.

### *Girls*

Firstly, the regression model for the sexual purposes motive was significant,  $F(3, 223) = 7.795$ ,  $p < .001$ , adjusted  $R^2 = .083$ , explaining 8% of the overall variance. Amongst the predictors only digital risk behavior was significant,  $\beta = .311$ ,  $p < .01$ , partial  $r = .308$ . The direction of the beta coefficient indicates that for girls a higher digital risk behavior explained more use of the sexual purposes motive for sexting.

The regression model for the instrumental/aggravated motive was significant,  $F(3, 220) = 7.990$ ,  $p < .001$ , adjusted  $R^2 = .086$ , explaining about 9% of the overall variance. Significant predictors were digital risk behavior,  $\beta = .167$ ,  $p < .05$ , partial  $r = .171$ , and BPNS-R Friends,  $\beta = .175$ ,  $p < .05$ , partial  $r = .168$ . The directions of the beta coefficients indicated that for girls a higher digital risk behavior as well as lower basic psychological need satisfaction among friends explained more use of the instrumental/aggravated motive for sexting.

Finally, the regression model for the body image reinforcement motive was significant,  $F(3, 227) = 7.682$ ,  $p < .001$ , adjusted  $R^2 = .080$ , explaining about 8% of the overall variance. Significant predictors were digital risk behavior,  $\beta = .163$ ,  $p < .05$ , partial  $r = .168$ , and BPNS-R Family,  $\beta = .160$ ,  $p < .05$ , partial  $r = .151$ . The direction of the beta coefficient indicates that for girls a higher digital risk behavior as well as lower satisfaction of basic psychological needs in the family explained more use of the body image reinforcement motive for sexting.

### *Boys*

The regression model for the sexual purposes motive was significant,  $F(3, 123) = 3.267$ ,  $p = .024$ , adjusted  $R^2 = .051$ , explaining about 5% of the overall variance. The only significant predictor was digital risk behavior,  $\beta = .214$ ,  $p = .016$ , partial  $r = .215$ . The direction of the beta coefficient indicated that for boys a higher digital risk behavior explained more use of the sexual purposes motive for sexting.

Secondly, the regression model for the instrumental/aggravated motive was not significant,  $F(3, 128) = 1.751$ ,  $p = .160$ , indicating that none of the individual independent variables (digital risk behavior, BPNS-R Family and BPNS-R Friends) could explain the variance in the use of the instrumental/aggravated motive for sexting for boys.

Lastly, the regression model for the body image reinforcement motive was significant,  $F(3, 128) = 10.766$ ,  $p < .001$ , adjusted  $R^2 = .183$ , explaining about 18% of the overall variance. Significant predictors were digital risk behavior,  $\beta = .302$ ,  $p < .01$ , partial  $r = .319$ , and BPNS-R Friends,  $\beta = .259$ ,  $p < .05$ , partial  $r = .220$ . The directions of the beta coefficients indicated that for boys a higher digital risk behavior and a lower satisfaction of basic psychological needs among friends explained more use of the body image reinforcement motive for sexting.

Table 4.

*Multiple regression analyses using digital risk behavior, BPNS-R Family and BPNS-R Friends as predictors for the sexting motives sexual purposes, instrumental/aggravated and body image reinforcement.*

	Sexual purposes <sup>a</sup>				Instrumental/aggravated <sup>b</sup>				Body image reinforcement <sup>c</sup>			
	B	SE B	$\beta$	<i>p</i>	b	SE B	B	<i>p</i>	b	SE B	$\beta$	<i>p</i>
<b>Girls</b>												
Digital risk behavior <sup>1</sup>	.419	.087	.311	< .001	.081	.031	.167	.011	.262	.103	.163	.012
BPNS-R Family <sup>2</sup>	-.032	.071	-.032	.648	.041	.026	.112	.113	.194	.084	.160	.022
BPNS-R Friends <sup>3</sup>	-.031	.075	-.028	.680	.068	.027	.175	.012	.151	.089	.117	.089
	R <sup>2</sup> = .095		Adj. R <sup>2</sup> = .083		R <sup>2</sup> = .098		Adj. R <sup>2</sup> = .086		R <sup>2</sup> = .092		Adj. R <sup>2</sup> = .080	
<b>Boys</b>												
Digital risk behavior	.298	.122	.214	.016	.064	.059	.093	.284	.460	.121	.302	< .001
BPNS-R Family	.003	.116	.002	.982	.059	.056	.117	.294	.079	.114	.071	.490
BPNS-R Friends	.158	.118	.145	.204	.034	.055	.069	.532	.286	.112	.259	.012
	R <sup>2</sup> = .074		Adj. R <sup>2</sup> = .051		R <sup>2</sup> = .039		Adj. R <sup>2</sup> = .017		R <sup>2</sup> = .201		Adj. R <sup>2</sup> = .183	

Note<sup>1</sup>. Higher score on digital risk behavior indicates more risk behavior.

Note<sup>2&3</sup>. Higher score on BPNS-R indicates a lower degree of basic psychological need satisfaction in the respective relationship domain (these scores have been transformed using a log10 transformation)

Girls<sup>a</sup>. F(3, 223) = 7.795, *p* = <.001, R<sup>2</sup> adj = .083 (N=227)

Girls<sup>b</sup>. F(3, 220) = 7.990, *p* = <.001, R<sup>2</sup> adj = .086 (N=224)

Girls<sup>c</sup>. F(3, 227) = 7.682, *p* = <.001, R<sup>2</sup> adj = .080 (N=231)

Boys<sup>a</sup>. F(3, 123) = 3.267, *p* = <.05, R<sup>2</sup> adj = .051 (N=127)

Boys<sup>b</sup>. F(3, 128) = 1.751, *p* = .160, R<sup>2</sup> adj = .017 (N=132)

Boys<sup>c</sup>. F(3, 128) = 10.766, *p* = <.001, R<sup>2</sup> adj = .183 (N=132)

## Discussion

This study is one of the first to use self-determination theory in the study of sexting, and likely the first to explore basic-needs fulfilment in relation to adolescents' sexting motives. The aim of the present study was to explore the issue of sexting using a theoretical framework presented by SDT and to further the understanding of sexting behaviors among adolescents, primarily in relation to basic psychological needs satisfaction. For the first research question, statistical analyses indicated no significant relationships between sexting frequency and basic-need satisfaction. However, for explaining sexting motives, small but significant effects were found. For girls, more online risk behavior explained some variance all three motives (sexual purposes, instrumental/aggravated reasons and body image reinforcement), whilst for boys it explained variance for only sexual purposes and body image reinforcement. Lower basic-need satisfaction in the relational context of friends explained more use of the instrumental/aggravated reasons motive for girls and more use of the body image reinforcement motive for boys. Finally, lower degrees of basic-need satisfaction in the relational context of friends explained more use of the body image reinforcement motive for boys.

Results show no differences in basic-need satisfaction between the groups of various sexting frequencies, indicating that basic-need satisfaction as measured in this study is not related to sexting frequency. This is somewhat unexpected as previous research holds risk behavior as one of the strongest predictors of sexting (Burén & Lunde, 2018) and that basic-need dissatisfaction is thought to be related to risk behavior (Neighbors, Lewis, Fossos, & Grossbard, 2007). In their study, Burén and Lunde (2018) found that support from friends and from family predicted sexting prevalence with specified receivers (e.g. more family support for girls meant a decreased risk for sexting with strangers). Since this study does not measure the impact of these relations in the same way it might be so that basic-need satisfaction would have a higher explanatory value when investigating how it relates to individual sexting receivers.

The most convincing findings of the present study are that basic-need satisfaction to some extent can explain sexting motives, and that the explanatory strength of adolescents basic-need satisfaction, in family and among friends, differs between boys and girls. This is in line with previous research describing sexting as a gendered phenomenon (Bianchi et al., 2021; Burén, 2020; Burén & Lunde, 2018; Klettke et al., 2014; Lenhart, 2009). Although all effects were small, explaining only a few percentages of the variance in motives, this expands on the emerging literature on how relations to family and friends affect sexting motives.

Somewhat surprisingly, the largest amount of explained variance found was for the body image reinforcement motive for boys where basic-need dissatisfaction with friends explained about five percent. When Burén and Lunde (2018) investigated the role of support from friends and family, for sexting behaviors, it was found that peer support was related to an increase in sexting with romantic partners, online friends and strangers whilst hypothesized to decrease sexting likelihood (Burén & Lunde, 2018). In the light of such research, the present study expands on the complexity of how adolescents' sexting is affected by peer-relations. This finding also stresses the importance of theoretically guided studies to try to explain why peer-relations seem to have such a varied effect on boys. Developmental theory might explain some parts, as adolescents are tasked with integrating their changing body image with their self (Erikson, 1970). It may be that boys who do not receive adequate appearance feedback from their peers are more motivated to use sexting for the same purposes.

The results of the present study can also be discussed in the light of the broader self-determination theory. Le (2021) illustrates an example for how the understanding of the motives in the SMQ (sexting motives questionnaire) (Bianchi et al., 2016) can be translated to SDT terms of motivation. The sexual purposes motive is understood as a more intrinsic and

self-determined type of motivation, thus according to SDT more self-determined motivation is related to both general and motivational well-being. Currin (2022) concludes that the sexual purposes motive is related to a more positive sexting expectancy in a way that the other motives are not. This may partially explain why basic-need satisfaction was not significant in explaining the sexual purposes motive for neither boys nor girls. The other two motives are deemed less autonomous and more controlled (Le, 2021), which could help explain why results indicate that lower basic-need satisfaction is associated with more use of these two motives.

The present study contributes to a growing body of theoretically guided research on sexting and results indicate the possibility of using self-determination theory in the study of sexting behavior and motives. However, the size of the findings presented here are also cause for caution as it cannot be certain that it is SDT that is best applied before more research on the subject have been done. The present study can only show small effects of basic-need satisfaction on sexting motives and the application of SDT on sexting research must be studied further in order to make more rigorous claims on theory.

## **Limitations**

The present study uses parametric forms of analysis, therefore the distribution of the variables included in the analysis is of importance. Thereby, one limitation of the present study was that data was initially severely skewed and non-normally distributed (e.g. most participants reported high need-satisfaction, few participants reported having sexted for instrumental/aggravated reasons). To handle this, a logarithmic transformation was conducted which meant that most variables reached acceptable skewness levels, however no variables were deemed normal in their distribution using significance testing. Since normal distribution in the dependent variables is not necessary for linear regression analysis, all tests were conducted. This, however, means that significance testing might be affected, yielding confidence intervals that could be too large or too small (Field, 2018).

Most research on sexting suffer the same issues with validity as the term sexting is defined differently among researchers (Burén, 2020; Courtice & Shaughnessy, 2021; Klettke et al., 2014). There is no common translation of the term sexting to Swedish and therefore some of the participants might have been confused by the use of the English term in the survey. The definition of sexting might also risk causing confusion as it is open to some interpretation. For example, semi-naked images without sexual themes or sending pictures of pornography to a friend might be deemed sexting. Confusion about the definition was mitigated by repeated explanation both before participation and several times during participation. All data collected is self-reported data, leaving it vulnerable to misunderstandings or participant unwillingness to share. A definition of sexting was presented in the survey before participants answered the related items.

The various backgrounds of all participants must also be assumed to have some effect on their behavior. Cross-cultural studies have indicated that cultural backgrounds affect how adolescents perceive and engage in sexting (Dodaj et al., 2022). This study cannot guarantee that the composition of participants reflect society as a whole since necessary data was not collected. Although the demographic data collected in the survey closely match those of the previous survey on a larger group of Swedish adolescents (Burén & Lunde, 2018), therefore it can be assumed that some generalizations of the results are possible.

There is an overall difficulty in assessing adolescents online behavior as the online platforms and medias are shifting (Andersson, 2021). In the survey used to collect data for the present study adolescents were asked about interactions with people they have only met online. However, having had solely online interactions can mean both online-friends and close to

strangers with whom the adolescent has had some amount of communication. Since the measure for online risk behavior includes items about persons met online these various experiences might explain the lower reliability for said scale.

When studying basic-need satisfaction there are several instruments that all focus on various domains (e.g., work domain, relationship domain, global) (van der Kaap- Deeder, Soenens, Ryan, & Vansteenkiste, 2020). In this study the relationship domain instrument was used. This offers the opportunity to build on previous research about the effects of friends and family relations on adolescents sexting at the same time as it lowers the possibility to make more global claims about basic-need satisfaction. Using a more global need-satisfaction scale might therefore strengthen the weak effects found in the present study. The present study can only analyze the effect of basic-need satisfaction in two relationship domains, using a global scale would allow making more global claims. La Guardia et al. (2000) mention that measuring the need for relatedness in a relationship domain might risk shifting the focus from basic-need satisfaction to relational quality, such a risk might be minimized but using more global basic-need measurements. The present study is primarily exploitative since no previous research have focused on basic-need satisfaction in the relationally domains of friends and family. Nevertheless, friends and family is often considered central for adolescents development.

## **Future research**

Whilst there are many studies examining sexting behaviors and motives, few make use of the guidance offered by motivational theories. This lack for theoretical grounding is also specified as one of the challenges of sexting research according to Courtice and Shaughnessy (2021). This study has used self-determination theory, and mainly the sub-theory basic-needs theory. SDT is employed in several fields of research, including the study of sexual motivation, close relations and education (Gravel, Reissing, & Pelletier, 2020; Ryan, 2017). SDT can offer a rigorous framework of motivation from which both existing and future research on sexting can be interpreted. Moreover, it would be interesting to explore the effect of basic-needs on sexting using a more global measurement of basic-needs satisfaction compared to the one used for this study.

Assessment of basic-needs satisfaction was conducted using a combined variable for both autonomy, competence and relatedness. Future research on the satisfaction of individual basic needs could offer new guides to which parts of sexting behavior might satisfy the various needs. Such knowledge would enable a better understanding of potential developmental risks of sexting as well as benefits.

The present study indicated that friends and family might vary in importance for sexting behaviors between boys and girls. This is also indicated in previous research (Bianchi et al., 2019; Burén & Lunde, 2018; Jonsson et al., 2014). An in-depth contribution to the understanding of how adolescents sexting behaviors are affected by relations to peers and family could be substantial for professionals working with adolescents and their sexuality, as a greater understanding of why some youths might be driven by more risky motives, for example sexting for exchange of money or gifts.

## **Conclusion**

This study showed small but significant relations between basic-needs satisfaction and the instrumental/aggravated reasons motive as well as for the body image reinforcement motive. Basic-need satisfaction with family and with friends differed in explanatory strength,

emphasizing the complex effect that close relations have on sexting behavior. Results also emphasize sexting as a gendered phenomenon. These results are also a promising contribution to the growing field of SDT research on sexting by noting that basic-needs satisfaction in the relational domains of friends and family can explain a small part of adolescents sexting motives.

In conclusion, having lower satisfaction of basic needs in the relational domains of friends and family is linked to a small increase in sexting motivated by instrumental/aggravated reasons as well as body image reinforcement. Thereby highlighting the need for further research on motivational aspects of adolescent sexting as well as on how relations to friends and family affect sexting behaviors.

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