

## Impulsivity traits, emotions and mobile phone sexting among college students in Kenya

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### Abstract

Mobile phone sexting is increasingly becoming central to college students' communication. Understanding the prevalence rates and psychological predictors in an understudied population in sub-Saharan Africa therefore warrants concern. This survey study sought to examine (a) sexting prevalence rates, (b) impulsivity traits and (c) whether emotions moderate the relationship between impulsivity traits and sexting. Data from 464 undergraduate students were collected using a questionnaire measuring impulsivity, emotions and engagement in sexting, which were analysed using descriptive statistics, t-tests and regression analysis. Sexting was reported by over half the sample, and men compared to women significantly sent and responded to sexts. Lack of premeditation predicted sending but not responding; positive urgency predicted responding but not sending; and sensation seeking predicted both aspects of sexting. Desire, fear and happiness moderated the relationship between impulsivity traits and sexting. The findings suggest that under specific heightened emotions, impulsive individuals are more likely to sext. It is recommended that more focus be placed on the psychological contexts of sexting in young adults' relationship formation and maintenance in a changing digital world.

**Keywords:** Appraisal, emotions, impulsivity traits, sexting, young adults.

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## 1. Introduction

Sexting has become widespread due to the ease provided by internet-enabled mobile phones to meet the needs of communicating with sexual partners or potential partners. It involves producing, sending and/or receiving sexually explicit material [Abeele, Campbell, Eggermont & Roe, 2014; Gordon-Messer, Bauermeister, Grodzinski & Zimmerman, 2013; The National Campaign to Prevent Teen and Unplanned Pregnancy (NCPTUP), 2008], which may be consensual, voluntary (Brodle, Wilson & Scott, 2019; Englander, 2015; Woolard, 2011) or coerced (Scholes-Balog, Francke & Hemphill, 2016). Consensual sexting may be in the context of romantic relationships, when partners are geographically distant or as a first step to initiate sexual behaviours (Drouin, Vogel, Surbey & Stills, 2013). On the whole, research shows that among young adults, sexting is common and a normal part of romantic communication (Burkett, 2015; Dir, Coskunpinar, Steiner & Cyders, 2013; Ingram, Macaudo, Lauckner & Robillard, 2019; Yeung, Horyniak, Vella, Hellard & Lim, 2014).

Whereas research has shown an increase in the frequency of sexting, much more ground needs to be covered on the motives surrounding sexting. So far, the extent to which impulsivity traits and emotions predict sexting remains unclear. Because sexting is central to college students' sexual expression (Perkins, Becker, Tehee & Mackelprang, 2014), it is important to understand whether differences in sexting prevalence rates are due to impulsivity traits and emotions, and hence distinguish individuals who engage in sexting from those not likely to. Additionally, the mental health implications of young adults' sexting remain unknown because of inconsistent prevalence rates and previous sexting research majorly focusing on adolescents. It is, therefore, difficult for college counsellors to develop effective interventions for any negative effects that may arise among sexters.

### 1.1. Prevalence and predictors of sexting

Sexting rates among young adults in Western countries range between 4% and 50% or even higher. For instance, the National Campaign to Prevent Teen and Unplanned Pregnancy (NCPTUP) (2008) survey reported that 33% of young adults (aged 20–26 years) had sent nude or semi-nude images of themselves, while 64% had received sexually suggestive messages and Winkelman, Smith, Brinkley and Knox (2013) found rates of 65% for sending and 69% for receiving sexually suggestive texts and photos in a sample of university students. Variations in sexting prevalence rates identified in other studies among undergraduate students (Gordon-Messer et al., 2013; Hudson, Fetro & Ogletree, 2014; Samimi & Alderson, 2014) are attributed to the specific characteristics of the populations under study, media used for sexting and differences in definitions of sexting. More recent research among university students (Ingram et al., 2019) and adults aged 17–58 years (Brodle et al., 2019) reported higher overall rates of sexting.

Previous research on the predictors of sexting has explored the influence of technology and availability of mobile phones (Smith, 2011; Yeung et al., 2014), such as alcohol consumption (Makgale & Plattner, 2017), peer influence, identity formation, sexual exploration, attitudes towards sexting and subjective norms and relationship formation, including flirting [Burkett, 2015; Hudson & Fetro, 2015; Samimi & Alderson, 2014; The National Campaign to Prevent Teen and Unplanned Pregnancy (NCPTUP), 2008], among others. However, mixed findings are reported concerning the extent to which coercion plays a role in sexting. Some research (Ingram et al., 2019) have found that sexting is not an expectation in romantic relationships, hence contradicting the role of peer influence and coercion. However, Englander (2015) found that sexting can be voluntary or coerced. Findings of research using the social learning theory support this perspective. For instance, both Brodle et al. (2019) and Van Ouytsel, Ponnet, Walrave and d'Haenens (2017) found that sexting is associated with peer imitation.

Whereas the bulk of sexting research focuses on prevalence rates, fewer studies address the role of personality and emotional motivators. This is important since previous research (e.g., Englander,

2015) finds a link between never having sexted and intense fear and threats possibly from romantic or potential partners.

### **1.2. Appraisal, impulsivity traits and sexting**

Young adults sext to fulfil psychological needs as hypothesised by psychological appraisal theories of emotion, for instance, the component process model of emotion (Scherer, 2009). Thus, sexting is goal-directed and purposeful, and as such, it is an interactive process of cognition and emotion that involves appraisal of stimuli, emotion elicitation and decision-making (Brosch, Scherer, Grandjean & Sander, 2013). Using the component process model, we argue that the decision to sext is a consequence of an appraisal process. Responding to a sext will involve the appraisal of a sexual image as relatively novel, relevant and pleasant or unpleasant, which evokes specific emotions that motivate action, i.e., the decision to sext or not to sext. Individuals are more likely to experience positive emotions towards objects in the larger category for which they have a liking and hence sexts are more likely to appeal more because of their connection to sex for individuals who have positive prevailing attitudes towards sex (Dir & Cyders, 2015). From the foregoing, it is expected that sexts, being representative of romantic feelings, will evoke intense attraction emotions depending on the individual's attitudes towards sexting and its context. Furthermore, if sexting is valued in one's social group as research has shown (Abeele et al., 2014; Brodle et al., 2019; Van Ouytsel et al., 2017), the likelihood of perceiving the sending or responding to a sext as important increases. Thus, the differences in sexting will ultimately depend on individuals' appraisal of the relevance and implications of sending or responding to a sext, to both self or group.

We also argue that these differences in appraisal are based on individuals' impulsivity traits of positive urgency, sensation seeking and lack of premeditation. Positive urgency refers to the tendency to respond impulsively to extreme positive affective states, while lack of premeditation is the lack of appraisal of consequences of an act before engaging in the act. Sensation seeking is associated with trying new and exciting experiences that may likely be dangerous. With their search for spontaneity, sensation seekers are more likely to try out new experiences, including sexting. Limited literature is available on links between impulsivity traits and sexting, and thus the relationship is by inference other sexual behaviours. Of the impulsivity traits studied, sensation seeking is highly associated with spontaneity, novelty and low impulse control that may predispose individuals to engage in sexting. Since sexting is a novel and exciting activity that results in high arousal, it is expected that sensation seeking would predict higher sexting. Accordingly, impulsive individuals, in general, and sensation seekers, in particular, are more likely to sext because they live in the moment and act when an opportunity for fun is presented without regard for consequences of their actions. According to Gute and Eshbaugh (2008), sensation seeking is strongly linked to risky sexual behaviour (RSB) because sensation seekers seek out excitement and are more outgoing and more likely to involve themselves in social activities. However, empirical evidence is inconsistent. For instance, whereas on the one hand sensation seeking increases the odds of sexting, (Dir et al., 2013; Scholes-Balog et al., 2016), on the other hand, Delevi and Weisskirch (2013) found no such relationship and instead explained their findings in terms of societal acceptability of sexting that removes the element of risk and intensity for high sensation seekers. More evidence is required to validate this position.

Strong emotional states as exemplified in positive urgency, i.e., engaging in rash behaviour during periods of intense emotion, is related to RSBs. In theory and practice, affect is hypothesised to influence the relationship between impulsivity traits and sexting via appraisal of objects, situations and events, as suggested by Brosch et al. (2013). Empirical support for this position is provided by Dir and Cyders (2015), who found that sensation seeking indirectly affected sexting through expectancies. In a longitudinal study (Zapolski, Cyders & Smith, 2009), both sensation seeking and positive urgency were found to predict RSB. Furthermore, Birth rong and Latzman's (2014) study shows that strong emotional states are responsible for RSB; and specifically, positive urgency emerged as a strong predictor. Finally, Ingram et al. (2019) also reported that the attitude that 'sexting was fun' was a

significant predictor of sexting and increased by 1.2 times the odds of sexting among men as compared to women.

### **1.3. Demographic characteristics and sexting**

Inconsistent findings are reported in the literature examining whether sexting varies according to respondents' socio-demographic characteristics, including gender. Generally, studies report significant gender differences in sexting behaviours in favour of men (Brodle et al., 2019; Hudson et al., 2014; Makgale & Plattner, 2017). According to this line of research, women are less likely to sext because they perceive a higher risk and the likelihood of negative outcomes more than men do. More specific research on the aspect of sending sexts shows that women end more sexts than they receive (Gordon-Messer et al., 2013; Reyns, Henson & Fisher, 2014), which is attributed to a sense of agency in expressing their sexuality. However, these specific differences have also been attributable to the media used and to differences in attitudes towards sexting (Dir & Cyders, 2015; Yeung et al., 2014). A final line of findings report no significant gender differences in prevalence rates (Samimi & Alderson, 2014; Winkelman et al., 2013), which may be explained by broader perceptions of risk among both men and women. For instance, 64% of the participants in Ingram et al.'s (2019) study reported the likelihood of harm in sexting. Interestingly, significant gender differences were found with regard to positive attitudes towards sexting, with 37% of men reporting that sexting was 'not a big deal'.

Gender differences in sexting may also be attributed to peer influence and coercion. In the study by Englander (2015), half of the male respondents and a quarter of female respondents reported voluntary sexting. Women were more likely to be coerced by romantic partners and potential partners to send pictures. The influence of peer imitation, in terms of positive attitudes towards sexting and reinforcement, and perceiving sexting as positive and justified further underlines the role of peer influence (Brodle et al., 2019).

#### **1.3.1. Current study**

This study has two main aims. The first is to collect evidence for sexting prevalence among college students in sub-Saharan Africa that is warranted due to scarce research. Majority of global sexting research has focused on adolescent populations with far less consideration for sexting among young adults. The second aim is to find out whether impulsivity traits predict sexting and whether emotions moderate the influence of these traits among sexters. This approach suggests that specific emotions increase the odds of sexting among individuals with specific impulsivity traits. No studies have expressly studied whether emotions moderate the influence of impulsivity traits on sexting among college students in Africa.

In line with the literature reviewed, this study, therefore, sought to answer the following research questions:

- a. What are the prevalence rates of sexting among university students?
- b. To what extent do impulsivity traits predict sexting?
- c. Do emotions moderate the relationship between impulsivity traits and sexting?

## **2. Method**

### **2.1. Participants**

The initial convenient sample consisted of 496 first- and second-year undergraduate students enrolled in various courses at a public university in Kenya who responded to a questionnaire. Thirty-two respondents did not complete their questionnaires, resulting in a total sample of  $n = 464$  that was used for analyses. The mean age of the sample was 22.84 years ( $SD = 0.91$ , range = 21–26 years; 50.4% was female). Approval for the study was received from the university ethics board. Study participants

filled out written consent forms that set out the objectives of the study before being included in the study. The paper and pencil questionnaire took between 5 and 7 minutes to complete. Participants handed in their completed questionnaires and were thanked and dismissed.

## **2.2. Measures**

### **2.2.1. Impulsivity**

Three subscales from the Short UPPS-P Impulsive Behaviour Scale (Cyders, Littlefield, Coffey & Karyadi, 2014) were used to measure lack of premeditation ( $\alpha = 0.82$ ), sensation seeking ( $\alpha = 0.77$ ) and positive urgency ( $\alpha = 0.77$ ). Each subscale contained four items. Means were computed for all items rated on a 4-point scale ranging from 1 (strongly agree) to 4 (strongly disagree). Negatively worded items were reverse coded so that higher values indicate more impulsive behaviour.

### **2.2.2. Felt emotions**

The Discrete Emotions Questionnaire (Harmon-Jones, Bastian & Harmon-Jones, 2016) was used to report felt emotions during sexting on a 5-point Likert scale with the end points being 1 (not at all) and 5 (an extreme amount). Felt emotions were preceded by the following statement: 'To what extent do you usually feel one or more of the following emotions while sending or responding to sexually suggestive messages or photos?'. The reliability indices of the subscales were as follows: desire (0.78); disgust (0.65); anger (0.82); fear (0.72); relaxation (0.74); happiness (0.80); anxiety (0.66); and sadness (0.65).

### **2.2.3. Sexting**

Mobile phone sexting was operationalised as sending sexually explicit messages and photographs and responding to sexually explicit messages and photographs on a mobile phone. Sending and responding were treated as separate variables in the analysis and were based on the format used by Campbell and Park (2014). The wording for sending sexts was: 'I have sent a sexually suggestive text message or nude photo of myself to someone else using my mobile phone'. The wording for responding to sexts was: 'I have responded to a sexually suggestive text message or to a nude photo sent to my mobile phone'. The item stem was 'In the past 1 month...'. Participants rated each sexting behaviour on a 5-point Likert scale: 0 (never); 1 (occasionally or less than three times); 2 (often or up to three times); 3 (frequently or up to five times); and 4 (daily).

This section also contained instructions that guided participants with regard to the meaning of sending and responding to sexts. Participants read that 'sending' referred to initiating the exchange of sexually suggestive text messages and photos without being prompted, while 'responding' referred to sending sexually suggestive text messages or photos in response to being prompted by a sexually suggestive text or photo received on their mobile phone. However, the measure did not include the identity of the recipients of sent sexts or whether the exchange of sexts was consensual.

### **2.2.4. Demographic characteristics**

Participants self-reported on gender and age.

## **3. Results**

### **3.1. Descriptive statistics**

Overall, 53.2% of the respondents reported having sent sexts using their mobile phone in the past 1 month, with 40.1% reporting to have sent sexts 'occasionally'; 11.4% who had sent 'often'; and 1.7% who reported sending 'daily'. A total of 48.3% of the respondents reported having responded to sexts, with 38.4% responding 'occasionally' and 9.9% who responded 'often'. More than half the sample (51.7%) reported never having responded to sexts on their mobile phone in the past 1 month. More

men (42.2%) compared to women (11%) had sent sexts. Similarly, more men (37.3%) compared to 11% of women reported responding to sexts in the past month. Follow-up *t*-tests showed that significantly more men compared to women sent ( $t = -16.01, p < 0.001$ ) and responded to sexts ( $t = -14.25, p < 0.001$ ).

The highest reported felt emotions when sexting or responding to sexts were anger and desire, while sadness and fear were least felt. *t*-test results found significantly higher disgust, anger and anxiety among women when sexting compared to men.

Overall, sensation seeking was rated highest ( $M = 2.67, SD = 0.56$ ) among the impulsivity traits. Significant gender differences in favour of men were found with regard to sensation seeking and lack of premeditation but not for positive urgency. There were no significant age differences on any of the measured variables.

Data from Table 1 show that desire, fear, happiness and relaxation significantly and positively correlated with both aspects of sexting; and anger had a significant and negative correlation with both aspects. Disgust, anxiety and sadness did not significantly correlate with both aspects of sexting and were subsequently excluded from further analyses.

**Table 1. Correlations of variables (means and standard deviations on main horizontal line)**

	1	2	3	4	5	6	7	8	9	10	11
<b>Sex</b>	1										
<b>LoP</b>	0.20**	1									
<b>SS</b>	0.17**	-0.06	1								
<b>PU</b>	0.08	-0.02	-0.26**	1							
<b>Anger</b>	-0.34**	0.07	-0.42**	0.17**	1						
<b>Fear</b>	0.03	0.25**	0.08	0.30**	0.52**	1					
<b>Desire</b>	0.40**	0.02	0.09	0.50**	-0.21**	-0.06	1				
<b>Relax</b>	0.31**	0.18**	0.13**	0.45**	-0.17**	0.19**	0.71**	1			
<b>Happy</b>	0.41**	0.41**	0.37**	0.41**	-0.22**	0.21**	0.66**	0.69**	1		
<b>Sent</b>	0.60**	0.16**	0.34**	0.06	-0.29**	0.13**	0.43**	0.31**	0.47**	1	
<b>Resp</b>	0.55**	0.10*	0.33**	0.05	-0.24**	0.16**	0.19**	0.20**	0.38**	0.59**	1
<b>Female</b>	M	1.63	2.58	2.39	1.77	0.95	0.93	0.81	0.67	0.22	0.22
	SD	0.39	0.53	0.90	1.02	0.85	0.75	0.83	0.86	0.41	0.41
<b>Male</b>	M	1.78	2.76	2.52	1.20	1.01	1.67	1.34	1.53	0.85	0.75
	SD	0.38	0.56	0.79	0.82	1.11	0.95	0.76	1.04	0.36	0.43
<b>Total</b>	M	1.70	2.67	2.45	1.44	0.98	1.30	1.07	1.20	0.53	0.48
	SD	0.39	0.56	0.85	0.98	0.99	0.93	0.84	1.04	0.50	0.50

\*\* $p < 0.001$ ; \*  $p < 0.05$ ; 1 = Gender (-1 = Female, 1 = Male); 2 = Lack of premeditation; 3 = Sensation seeking; 4 = Positive urgency; 5 = Anger; 6 = Fear; 7 = Desire; 8 = Relaxation; 9 = Happiness; 10 = Sent sexts; 11 = Responded to sexts.

### 3.1.1. Prediction of sexting

The final model of the logistic regression summary in Table 2 explained 70% and 62% of the variance in sending and responding to sexts, respectively. Gender increased the likelihood of sexting and overall contributed to 47% and 35% of the variance in sending and responding, respectively. Compared to women, men were over 20 times more likely to send ( $OR = 20.69$ ) and 10 times more likely to respond ( $OR = 10.89$ ). Impulsivity traits contributed to 16% and 22% of the variance in sending and responding, respectively, with lack of premeditation being the strongest predictor of sending ( $OR = 1.95$ ), while positive urgency was the strongest predictor of responding ( $OR = 2.26$ ). Positive urgency and lack of premeditation did not predict sending and responding to sexts, respectively.



Emotions contributed to 7% and 5% to the overall variance in sending and responding, respectively. Anger, fear and desire were strong predictors of sending, while desire and happiness strongly predicted responding to sexts.

**Table 2. Predictors of mobile phone sexting behavior (n = 464)**

	Sexting					
	Sent sexts			Responded to sexts		
	B	SE	OR	B	SE	OR
Demographics						
Sex (high: male)	3.03**	0.22	20.69	2.39**	0.22	10.89
Nagelkerke R <sup>2</sup> (%)		0.47			0.35	
Personality traits						
Lack of premed.	0.67**	0.11	1.95	0.16	0.09	1.17
Sensation seeking	0.61**	0.09	1.84	0.67**	0.08	1.95
Positive Urgency	0.29	0.17	1.34	0.82**	0.16	2.26
Nagelkerke R <sup>2</sup>		0.16			0.22	
Emotions						
Anger	-0.46**	0.11	0.63	0.03	0.06	1.03
Fear	0.45**	0.09	1.57	-0.04	0.06	0.96
Desire	0.39**	0.11	1.47	-0.26*	0.09	0.77
Relaxation	-0.05	0.08	0.95	-0.001	0.08	0.77
Happiness	-0.01	0.08	1.00	0.41**	0.09	1.51
Nagelkerke R <sup>2</sup>		0.07			0.05	
Total R <sup>2</sup>		0.70			0.62	

Entries are regression coefficients (log odds) after controlling for prior blocks.

\* $p < 0.05$ ; \*\* $p < 0.001$

### 3.1.2. Moderation analysis

In line with the component model process (Scherer, 2009), we expected that felt emotions would moderate the associations between impulsive traits and responding but not sending sexts. This derives from the argument that individuals' responses are a product of appraisal of events and situations. Thus, impulsivity traits are more likely to predict responses via favourable appraisal and emotions. We expected novel and exciting situations like receiving a sexually suggestive text or photo to be appraised positively and simultaneously elicit emotions more likely predictive of responding in a similar fashion. The analysis used the PROCESS macro for Statistical Package for the Social Sciences (Hayes, 2018) and used a bias-corrected 95% confidence interval (CI) with a sample procedure of 5,000 bootstrap samples.

The results presented in Table 3 indicate that desire significantly and positively moderated the influence of sensation seeking on responding to sexts. As expected, the increase in feelings of desire increases the likelihood of responding to sexts at all levels of sensation seeking. Desire also significantly moderated the relationship between lack of premeditation and responding to sexts. The effect was such that desire decreased albeit insignificantly the likelihood of responding to sexts at a low lack of premeditation ( $\beta = -0.012$ ,  $SE = 0.031$ ,  $p = 0.696$ ). However, increasing desire significantly increased responding to sexts at average ( $\beta = 0.056$ ,  $SE = 0.021$ ) and high lack of premeditation ( $\beta = 0.108$ ,  $SE = 0.038$ ).

Increasing fear significantly decreased responding to sexts but only at low and average but not high positive urgency ( $\beta = -0.153$ ,  $SE = 0.079$ ,  $p = 0.054$ ). Significant positive moderation of fear was found at all levels of sensation seeking. Happiness positively and significantly moderated the influence of sensation seeking on responding to sexts at average and high but not low levels of sensation seeking.

**Table 3. Moderation of emotions on impulsivity traits**

Variables	Responding to sexts		R <sup>2</sup> change
	B(SE); [95% CI]		
Positive urgency x Desire	0.020 (0.010) [0.000–0.039]		0.008
Sensation seeking x Desire	0.014 (0.003) [0.007–0.020]**		0.027
Lack of premeditation x Desire	0.015 (0.007) [0.001–0.029]*		0.009
Positive urgency x Anger	0.005 (0.009) [–0.013–0.023]		0.001
Sensation seeking x Anger	0.001 (0.003) [–0.006–0.007]		0.000
Lack of premeditation x Anger	–0.011 (0.006) [–0.022–0.000]		0.008
Positive urgency x Fear	–0.038 (0.011) [–0.060–0.016]*		0.024
Sensation seeking x Fear	0.009 (0.004) [0.001–0.018]*		0.009
Lack of premeditation x Fear	0.001 (0.005) [–0.008–0.010]		0.000
Positive urgency x Happiness	–0.018 (0.010) [–0.037–0.000]		0.006
Sensation seeking x Happiness	0.010 (0.003) [0.004–0.016]*		0.019
Lack of premeditation x Happiness	0.005 (0.005) [–0.004–0.015]		0.002

\* $p < 0.05$ ; \*\* $p < 0.0005$ ; B = Unstandardised regression coefficient; CI = 95% confidence interval for Odds ratio

#### 4. Discussion

This study focused on an understudied yet important aspect of young adults' dating lives. The findings provide support for the high frequency of sexting among university students. We found that over half of the sample either sent or responded to sexts, which is at par with previous studies outside Africa (Gordon-Messer et al., 2013; Samimi & Alderson, 2014). We defined sexting in terms of two behaviours – sending and responding to sexually suggestive texts and images. Moreover, the aspect of responding to sexts enabled us to examine the role of personal appraisal and agency in sexting, which is lacking in previous studies.

Similar to some previous studies (Hudson et al., 2014; Makgale & Plattner, 2017), this study found that men sent and responded to sexts. However, the finding that women also sexted points to two directions: first, that women are agentic and express their sexuality through sexting; and secondly, that sexting is a normal behaviour in sexual interaction as reported previously (Burkett, 2015; Ingram et al., 2019; Yeung et al., 2014). Given that fear predicted sexting in this study, it is likely that peer pressure to sext plays an equal role in both men and women in this college sample. Furthermore, failure to find significant gender differences in fear during sexting suggests that consensual exchange and not coercion motivates sexting in support of some previous research (Perkins et al., 2014). Additionally, the findings indicating that men had a significantly higher desire and impulsivity traits points to stronger positive sexting expectancies (Dir et al., 2013) and may explain gender differences in sexting.

The study established that mobile phone sexting was also associated with impulsivity traits. Higher sensation seeking was reported overall among men compared to women reporting both higher sensation seeking and lack of premeditation. Specifically, sensation seeking predicted both sending and responding to sexts, while lack of premeditation and positive urgency predicted only sending and responding to sexts, respectively. These findings corroborate previous studies that found reasons for sexting among undergraduate students ranging from sexting for fun and flirting, positive sexting expectancies and favourable sexting attitudes, which are consistent with impulsivity traits as reported in previous studies [Hudson et al., 2014; Makgale & Plattner, 2017; The National Campaign to Prevent Teen and Unplanned Pregnancy (NCPTUP), 2008]. Put together, they provide evidence for the role of impulsivity in increasing the odds of sexting as previously reported (Dir & Cyders, 2015; Delevi & Weisskirch, 2013; Scholes-Balog et al., 2016). These findings may also be understood as evidence for the role of state as opposed to trait impulsivity (Wingrove & Bond, 1997). Whereas sending sexts has been shown to be dependent on future positive expectancies, responding to sexts draws on more



immediate and temporary dispositions since arousal was for a specific behaviour, i.e., reaction to visual sexual stimuli. Therefore, this finding suggests that sexual arousal is an intense emotional state responsible for the behaviour of responding to sexts.

This study aimed to provide evidence to show that individuals are likely to sext after appraisal of sexual stimuli consistent with the component process model (Scherer, 2009). The finding that lack of premeditation could only predict sending but not responding to sexts suggests that such individuals are able to think through the consequences of responding but not sending; and while sending sexts is impulsive, responding to sexts follows an appraisal process. Similarly, it can be argued that individuals reporting high positive urgency require heightened positive affect to act and hence are more likely to respond to sexts after appraisal. Therefore, it follows that positive urgency and favourable appraisal of sexual stimuli are expected.

Whereas anger, fear and desire were significantly associated with sending sexts, desire also predicted responding to sexts. This finding shows that desire plays a dual role in sexting – increasing sending while reducing responding to sexts, respectively. Furthermore, significant positive and negative associations found between fear and responding to sexts among sensation seekers and individuals high in positive urgency, respectively, means that sexting among sensation seekers is not likely to be decreased by feelings of fear. However, for individuals who make rash decisions during positive affect, fear seems to reduce that likelihood since it is likely to be appraised unfavourably. Given significant gender differences in sensation seeking and lack of premeditation, the findings of this study suggest that higher prevalence of sexting among men can be attributed to strong emotional states linked to impulsivity traits. Similarly, it can be argued that significant gender differences in anger in favour of women may explain the lower sexting rates among women. It suggests that feelings of anger cushion women against engaging in sexting. The latter findings may be understood in light of women's strong negative sexting expectancies (Dir et al., 2013) and perceptions of high risk and harm associated with sexting (Ingrid et al., 2019) and hence provide evidence to reconceptualise sexting from an affective perspective.

## **5. Limitations**

The use of a convenient sample has implications on external validity and thus the prevalence of sexting should be interpreted within the narrow confines of the sample. Secondly, we did not seek to find out whom participants engaged in sexting with. Thirdly, we assumed a causal antecedence between emotions and sexting which may not be the case. Finally, data are self-reported and based on recall which may suffer bias due to participants' need to 'fit' in addition to prevailing affective states which were not controlled for.

## **6. Conclusion and recommendations**

This study provides prevalence estimates of sexting among young adults in a college in sub-Saharan Africa. The study has also identified the psychological factors underlying sexting behaviour, including impulsivity and emotions, and hence goes beyond prevalence rates to examine psychological predictors of the behaviour. This study adds to the literature examining sexting as behaviour embedded in personality and is important as further research uncovers evidence that shows sexting in dating has been normalised. Further research among more representative samples could examine linkages between other emotions and sexting in understanding sexting as an aspect of social interaction.

The findings of this study have two major practical implications. First, being able to determine prevalence rates will enable college students and counsellors to adjust to the rapidly changing world of online dating to deal with negative outcomes, including cyber bullying. Secondly, due to the risk of

forwarding and exchanging sexts that is highlighted by previous studies in this area, impulsive young adults can be helped to focus heightened emotions to other aspects of their romantic relationships.

Since sexting is a common practice among university students, more focus is needed on its proper contexts in relationship formation and maintenance in a rapidly changing digital world. By investigating psychological factors underlying young adults' sexting behaviour, the present study inspires awareness-raising efforts, as the findings can enable drawing up specific profiles of individuals more likely to sext. Moreover, discussing the emotions moderating sexting could be part of this awareness creation.

Future research in this area may look at other unexplored contexts to help develop a more complete picture of sexting rates. Whereas quantitative research provides firm estimates of prevalence, more qualitative studies are needed to enable researchers to enter the world of young adults who are sexting in order to understand their underlying motivations. This could include conceptualising sexting from a mental health perspective.

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