Adolescents' Perceptions of Digital Media's Potential to Elicit Jealousy, Conflict and Monitoring Behaviors Within Romantic Relationships

Joris Van Ouytsel[1], Michel Walrave[1], Koen Ponnet[2], An-Sofie Willems,[1] & Melissa Van Dam[1]

[1] Department of Communication Studies, University of Antwerp, Antwerp, Belgium
[2] Department of Communication Studies, IMEC-MICT-Ghent University, Ghent, Belgium

Abstract

Understanding the role of digital media in adolescents' romantic relationships is essential to the prevention of digital dating violence. This study focuses on adolescents' perceptions of the impact of digital media on jealousy, conflict, and control within their romantic relationships. Twelve focus group interviews were conducted, among 55 secondary school students (n_{girls} = 28; 51% girls) between the ages of 15 and 18 years (M_{age} = 16.60 years; SD_{age} = 1.21), in the Dutch-speaking community of Belgium. The respondents identified several sources of jealousy within their romantic relationships, such as online pictures of the romantic partner with others and online messaging with others. Adolescents identified several ways in which romantic partners would react when experiencing feelings of jealousy, such as contacting the person they saw as a threat or looking up the other person's social media profiles. Along with feelings of jealousy, respondents described several monitoring behaviors, such as reading each other's e-mails or accessing each other's social media accounts. Adolescents also articulated several ways that they curated their social media to avoid conflict and jealousy within their romantic relationships. For instance, they adapted their social media behavior by avoiding the posting of certain pictures, or by ceasing to comment on certain content of others. The discussion section includes suggestions for future research and implications for practice, such as the need to incorporate information about e-safety into sexual and relational education and the need to have discussions with adolescents, about healthy boundaries for communication within their friendships and romantic relationships.

Keywords: Jealousy; social media; monitoring behaviors; digital media; cyber dating abuse

Introduction

During adolescence, teenagers start to experiment with the formation of romantic relationships. Romance and romantic relationship experiences are important topics of conversation for adolescents, and they play a central role in the media content that teenagers consume, such as advertisements, television series, music and movies (Brown, Feiring, & Furman, 1999; Shulman & Seiffge-Krenke, 2001). Engaging in romantic relationships is a normative part of adolescence (Rogers, Ha, Updegraff, & Iida, 2018). Studies conducted in the United States have shown that most teenagers start dating by the end of high school (Carver, Joyner, & Udry, 2003). Adolescent romantic relationships are, however, often temporary, and studies have found that they usually do not last longer than a year (Karney, Beckett, Collins, & Shaw, 2007). Engagement in romantic relationships can help adolescents to reach important developmental goals and have a lasting influence on their later relationships, family situations, and marital outcomes during adulthood (Karney et al., 2007; Meier & Allen, 2009). It can also positively affect teenagers' self-worth, their social competencies and provide them with social support (Kuttler & la Greca, 2004; Zimmer-Gembeck, Siebenbruner, & Collins, 2001).

The romantic relationships of adolescents differ from those of adults, as teenagers often live at home and are typically unable to cohabit with their romantic partners (Karney et al., 2007). Additionally, adolescents' romantic relationship expectations differ from those of adults. In a retrospective study, Shulman and Kipnis (2001) found that adolescents place greater value on companionship within their romantic relationships, whereas young adults emphasize values such as trust, support, and stability. Connolly, Craig, Goldberg, and Pepler (1999) found that adolescents are rather more focused on passion and being together than adults are. Throughout adolescence, as youths gain more experience, the romantic relationship experiences and expectations of teenagers and adults start to gradually align (Connolly et al., 1999).

Digital communication has changed the ways in which teenagers experience their romantic relationships (Robards & Lincoln, 2016; Van Ouytsel, Van Gool, Walrave, Ponnet, & Peeters, 2016). From a developmental perspective, social media can help adolescents to achieve important tasks such as identity formation, friendship maintenance, and social capital expansion (Van Gool, Van Ouytsel, Ponnet, & Walrave, 2015). The way in which social media can help to achieve these goals, is one of the reasons for the enthusiasm with which young people have adopted digital technologies. In Belgium, where this study was conducted, nearly 95% of teenagers between the ages of 12 and 18 years have access to a smartphone (Apestaartjaren, 2018). According to the 2018 study, Facebook is the most popular social media website, with 82% reporting use. This social networking site allows users to share text, images, videos, and other content, such as interests, and their location. Seventy-nine percent of the surveyed teenagers have Instagram accounts. Instagram is a social media application and website that is predominantly used to share pictures and videos with friends. Profiles on Instagram can be either private or public: private profiles only allow those who have been accepted to the friends' list to access the posts on the profile; public profiles allow all users of the application access to the content that someone posts. According to the study, Snapchat is as popular as Instagram, with 79% of Belgian teenagers reporting use. On this messaging application, text messages, pictures and videos are only available for a limited amount of time (Apestaartjaren, 2018).

Social media have affected adolescents' romantic relationships in several ways. For instance, previous research has found that social media facilitate the process of relational information seeking about potential romantic partners by allowing individuals to learn more about each other through their social media profiles, with pictures being regarded as the most important source of information (Van Ouytsel, Van Gool, et al., 2016). They also help users to express commitment within their romantic relationships by allowing them to share their relationship status, by posting joint pictures of the couple, or allowing couples to share online public displays of affection (e.g., posts about how much they love their romantic partners) (Fox, Warber, & Makstaller, 2013; Papp, Danielewicz, & Cayemberg, 2012; Robards & Lincoln, 2016). Social media and instant messaging also enable teenagers to stay connected, to communicate, and to maintain intimacy with their romantic partner during times of separation (Sánchez, Muñoz-Fernández, & Ortega-Ruíz, 2015; Vaterlaus, Tulane, Porter, & Beckert, 2018). According to a Pew Research Center study, 59% of teenagers with prior relationship experience say that social media makes them feel more connected to what's happening in their significant other's life," and 44% perceive that it makes them feel emotionally closer to their romantic partners (Lenhart, Smith, & Anderson, 2015, p. 5). Although social media may increase feelings of connectedness, it has been noted that some adolescents may feel pressure to always be connected with their romantic partners and to quickly respond to their messages and phone calls (Reed, Tolman, Ward, & Safyer, 2016).

While social media can have a positive influence on the formation and maintenance of romantic relationships, they can also affect them adversely (Fox & Anderegg, 2016; Fox, Osborn, & Warber, 2014). The negative impact of social networking sites is especially apparent in their potential to elicit jealousy and relational uncertainty (Fox & Anderegg, 2016; Lucero, Weisz, Smith-Darden, & Lucero, 2014; Rueda, Lindsay, & Williams, 2015; Van Ouytsel, Van Gool, et al., 2016). The reduced levels of privacy that social media engender may also lead to unhealthy relationship behaviors (Leadbeater, Connolly, & Temple, 2018). Indeed, social media can facilitate monitoring behaviors, by providing users with large amounts of information on their romantic partners (Reed et al., 2016; Tokunaga, 2011). This can pose significant challenges, especially for adolescents, who are relatively inexperienced at dealing with emotions such as jealousy and are relatively new to the dynamics of a romantic relationship (Rogers et al., 2018). The aim of this study is to further investigate these issues by exploring the different ways in which adolescents perceive social media to be capable of eliciting feelings of jealousy, and the ways that social media are associated with monitoring behaviors and conflict within teenage romantic relationships.

Romantic Jealousy and Social Media Use

Romantic jealousy is usually a reaction to a feeling that the romantic relationship is threatened by a third-party or may be lost (Dainton & Berkoski, 2013; Perles, San Martín, & Canto, 2019). A perceived threat to the relationship, whether real or imagined, usually consists of a fear that the romantic partner is being pursued by someone else or vice versa (Frampton & Fox, 2018). Jealousy can make a romantic partner unsure about the status or the future of the relationship (Dainton & Aylor, 2001). Jealousy has been found to be an important predictor of offline forms of dating and relationship violence (Cano, Avery-Leaf, Cascardi, & O'Leary, 1998; Giordano, Soto, Manning, & Longmore, 2010).

Social networking sites may play an important role in causing feelings of relational uncertainty and jealousy (Bevan, 2017; Fox & Anderegg, 2016). A Pew Research Center study found that 27% of teenagers with prior relationship experience felt jealous or uncertain about their romantic relationship because of social media (Lenhart et al., 2015). Social networking sites allow their users to connect with multiple individuals, some of whom are unknown to the romantic partner. This can elicit uncertainty about the status of these relationships (Fox & Anderegg, 2016). They also enable the romantic partner to stay in touch with ex-partners and alternative love interests (e.g., so-called "back burners") (Dibble, Punyanunt-Carter, & Drouin, 2018). Moreover, social media have the potential to widely disseminate and visualize information that was previously not easily accessible, such as photographs of the partner with unknown friends, pictures from events at which the partner was not present, or information about previous romantic relationships (Fox & Anderegg, 2016). Additionally, as Bevan (2017) noted, some of the information available on social media is decontextualized, rendering it more susceptible to misinterpretation. Examples of jealousy over social media posts include the following: becoming jealous of pictures of past romantic relationships (i.e., retroactive jealousy) (Frampton & Fox, 2018; Sánchez et al., 2015); becoming jealous over likes on comments that others made on the posts of the romantic partner (Baker & Carreño, 2016; Fox, 2016); becoming jealous when the romantic partner posts pictures with someone of the opposite gender (Baker & Carreño, 2016); or becoming jealous when the romantic partner adds a new connection to his or her profile (Baker & Carreño, 2016; Bevan, 2017).

Although it has not yet been investigated among adolescents, studies among adult samples indicate that the nature of messages plays a role in the intensity of jealous feelings. Among adults, it has been found that Snapchat may cause more romantic jealousy than Facebook, as the messages on former app disappear once opened, after which they and can no longer be viewed (Utz, Muscanell, & Khalid, 2015). Similarly, Cohen, Bowman, and Borchert (2014) found, in an experiment among adults, that those who read an ambiguous message by their romantic partner (i.e., a message to their ex) that was sent as a private Facebook message, which has high exclusivity, reported more negative emotions and were likelier to imagine themselves getting into a confrontation over these messages than those who read a message posted on the Facebook wall, which has low exclusivity. Therefore, the exclusivity of the communication and its lower visibility for the romantic partner appears to be an important cause of romantic jealousy (Cohen et al., 2014).

Online Monitoring and Social Media Use

One way in which jealousy over social media can be expressed is through digital monitoring and surveillance behaviors (Baker & Carreño, 2016; Bevan, 2018; Bevan, 2017; Dainton & Berkoski, 2013), which can be regarded as a form of emotional or psychological digital dating violence (Borrajo, Gámez-Guadix, Pereda, & Calvete, 2015; Sánchez et al., 2015; Van Ouytsel, Ponnet, & Walrave, 2018; Zweig, Lachman, Yahner, & Dank, 2014). One study found that 32.8% of adolescents within their sample, between the ages of 16 and 22 years, had experienced having their romantic partners view their e-mails, social networking site messages, or their cell phone text messages without their permission. Similarly, 43.7% of the adolescents had experienced having their romantic partner send messages via the Internet or mobile phone to control whom they spent time with and what they were doing. Further, 22.2% of the adolescents had experienced having their partner call or send them messages multiple times in a row "to control where they were or with whom they were together" (Van Ouytsel, Ponnet, et al., 2018; p.2771).

Tokunaga (2011) has identified four different characteristics of social media that facilitate interpersonal electronic surveillance. The first characteristic is the ease with which social media can be accessed and the amount of information that is publically available when a connection has been made (Fox & Moreland, 2015). The second

characteristic comprises the multimodality of the information available on social media. Social media may include photographs, textual information, audio, or video, offering different types of content that may be subject to monitoring. The third characteristic of social media identified by Tokunaga (2011) is the extent to which social media can be recorded and archived. The persistence of information on the profile allows users to audit all interactions that have occurred on the profile and also permits repeated victimization (Peskin et al., 2017). A final characteristic is the distance between the perpetrators and the victims. The victims may neither be aware that they are under surveillance nor able to determine how often they are being observed. This makes it more difficult for someone to realize that he or she is being monitored (Bevan, 2017; Tokunaga, 2011).

Digital monitoring behaviors may also be perceived as more socially acceptable, given its limitation to a virtual space and the absence of physical evidence or physical acts (e.g., opened letters or searched-through cabinets or old photo albums) (Utz & Beukeboom, 2011). Research has found that teenagers sometimes perceive controlling and monitoring behaviors as bothersome but harmless, or even as a sign of love and care (Lucero et al., 2014). Some teenagers frame their own monitoring behaviors in terms of "being worried" and "being concerned" about the well-being of their romantic partner (Baker & Carreño, 2016; Baker & Helm, 2010; Smith-Darden, Kernsmith, Victor, & Lathrop, 2017).

Online monitoring behaviors are often facilitated by victims' unsafe Internet practices, such as not using appropriate privacy measures. This enables young people to control and monitor their partners more easily and with fewer restrictions (Van Ouytsel, Ponnet, et al., 2018). Qualitative research has also found that it is common for teenagers to share passwords at the beginning of a romantic relationship, as a sign of trust and commitment (Baker & Carreño, 2016; Bevan, 2017; Lucero et al., 2014), or that romantic partners demand each other's passwords (Stonard, Bowen, Walker, & Price, 2017). This can be an additional risk factor for online monitoring. A study by Reed et al. (2016), among 9th to 12th graders, found that 7.0% of the girls and 5.4% of the boys in their sample had pressured their partner to give password to access their phone or online account(s) (Reed et al., 2016).

Among adolescents, it has been found that romantic-partner monitoring on Facebook is significantly related to lower self-esteem of the perpetrator (Langlais, Seidman, & Bruxvoort, 2018). Moreover, it has been found that attachment anxiety is significantly related to engagement in monitoring behaviors among high school youth (Reed et al., 2016). This is in line with prior research that has examined the associations between social media-related jealousy and digital monitoring and controlling behaviors among adults (Bevan, 2017). Although the direction of the relationship between both has, to date, been insufficiently quantitatively studied, it has been hypothesized that social media-related jealousy may lead to subsequent monitoring (Muise, Christofides, & Desmarais, 2013). Digital monitoring behaviors and jealousy may also mutually influence each other as jealousy may lead to monitoring, which can in turn lead to romantic partner to be exposed to more information that may then lead to additional monitoring behaviors (Baker & Carreño, 2016; Reed et al., 2016).

The Present Study

It is important to study romantic jealousy within teenage relationships, given that it is identified as one of the main causes for unhealthy relationships among adolescents (Helm, Baker, Berlin, & Kimura, 2015). Romantic jealousy has also been identified as an important predictor of offline forms of dating and relationship violence (Cano et al., 1998; Giordano et al., 2010). Moreover, a recent study found that jealousy over the romantic partner's Facebook use was significantly associated with offline dating violence perpetration among middle and late adolescents (Daspe, Vaillancourt-Morel, Lussier, & Sabourin, 2018). Separately, it has been found that broad measures of digital dating violence, which encompassed online monitoring and surveillance behaviors, are also associated with offline forms of abuse among adolescents (Stonard, 2018; Zweig, Dank, Yahner, & Lachman, 2013).

Research on offline dating violence has showed that relationship patterns learned during adolescence are sometimes carried into adulthood, making the prevention of abusive behaviors among adolescents further important for the prevention of interpersonal violence among adults (Magdol, Moffitt, Caspi, & Silva, 1998). Therefore, the aim of this study is to address this need for additional research by exploring the different ways in which adolescents perceive social media as capable of eliciting feelings of jealousy, conflict and irritation, monitoring behaviors, as well as adolescents' responses to these feelings. Some exploratory studies have examined these issues (Lucero et al., 2014; Rueda et al., 2015; Van Ouytsel, Van Gool, et al., 2016). However, more

information on the ways that technology use is linked with abusive behaviors within adolescent romantic relationships is warranted, to better assist relationship development (Baker & Carreño, 2016). These findings may guide future research toward better investigations of the context of the different aspects of online monitoring behaviors.

Methods

Sample and Procedures

In March 2016, 12 focus groups were conducted among 55 individuals (n_{girls} = 28; 51% girls) between 15 and 18 years old (M = 16.60 years; SD = 1.21) in two secondary schools in the Dutch-speaking area of Belgium. The focus group conversations lasted between 43 and 58 minutes. As recommended by Krueger and Casey (2009), we conducted same-sex focus groups because of the sensitive nature of our study (6 male focus groups and 6 female focus groups). The amount of participants in the focus groups ranged from 4 to 5 individuals per focus group. The focus groups were held during lunch breaks and the students received snacks and soda during the focus group as a compensation for their participation. The respondents were recruited in the schools through a pamphlet and through messages on online learning platforms. The students were told in advance that they would participate in a focus group conversation about romantic relationships and social media.

Interview Structure

A semi-structured questionnaire was used during the interviews. The questions and question route were constructed according to the recommendations by Krueger and Casey (2009). The questions were inspired by both quantitative (Borrajo et al., 2015; Dick et al., 2014; Zweig et al., 2014) and qualitative studies (Baker & Carreño, 2016; Fox & Moreland, 2015; Fox & Warber, 2013; Fox et al., 2013; Stonard et al., 2017) on cyber dating abuse and the role of digital media within romantic relationships. A list of the key questions that were asked, is included in the appendix of this article. The focus group conversations started with introductory questions about which social media the participants used in order to communicate with friends and romantic partners. These introductory questions were meant to familiarize the respondents with the themes of the study, and to make them more comfortable to talk about the topics. They were not included in the analyses. The focus group moderators then asked the respondents about sources of conflict, jealousy and monitoring behaviors within their romantic relationships. Based on the answers of the respondents the focus group moderators asked additional questions to delve deeper into the topics that were brought up by the respondents, rephrased certain questions, or they chose a related set of key questions to make sure that the conversation kept a 'natural' flow.

Data Analytic Strategy

The data were analyzed using NVivo 10. The focus group conversations were recorded and transcribed verbatim. During the transcription process, the focus group moderators were assigned the letter M. The student names were removed from the transcripts and replaced by a code in order to preserve their anonymity. Names of friends and romantic partners were redacted for reasons of privacy. Every respondent is assigned a number (e.g., R2 for the second respondent in a focus group). The analytical procedure followed several steps. First, the transcripts were carefully read by the first author to become familiar with the themes and topics of the focus group conversations. In the next step, each answer was identified and coded, using an open coding procedure. This was done for 4 of the 12 focus group conversations. After this step, the codes were reviewed, and identified and the researchers connected those with thematic similarities. Codes with overlapping themes were merged into one overarching code and the codes were also structured according to the thematic categories that were relevant to the research questions. The remaining focus group conversations were coded using the tree-structure that was created in the previous steps (cf. Van Ouytsel, Van Gool, et al., 2016). In the final step, the transcripts of all focus groups were reviewed again to assess whether all answers had been accurately coded. The quotations were translated from Dutch into English by the researchers. The researchers have intentionally tried to stay as close as possible to the original language used by the respondents.

Ethical Procedures

Before the focus groups conversations were started, the respondents received a fact sheet in which the purpose and the procedures of the focus group conversations were explained. The researcher provided an oral summary of the fact sheet and answered any remaining questions that the respondents might have. The participants were assured that their responses would be treated confidentially by the researcher (e.g., that nothing they said would be published in an identifiable manner), that their participation was voluntary and that they were free to withdraw their participation at any time. The information sheet also included the contact information of two non-profit organizations that provide toll-free information and advice on safer Internet use, in case that the respondents felt the need to talk about the topics that came up during our focus group conversations. The information letter also included the contact information of the researchers in case that the respondents had questions or if they would wish to receive the study's results. The participants provided written consent and a passive parental consent procedure was used. In both schools, the consent of the school principal was obtained prior to the study. The procedures of this study were approved by the ethical committee of the University of Antwerp.

Results

The results of the analysis are structured according to the several themes that were identified. First, we discuss the different ways in which jealousy and conflict can be influenced by social media use. Then, we discuss coping strategies and the ways in which the respondents perceived that adolescents deal with feelings of jealousy within their romantic relationships. Following this, monitoring behaviors and the ways in which the adolescents adapted their social media use after they had entered into a romantic relationship are discussed. The themes are ranked from most often discussed to least prevalent across focus groups. Table 1 provides a summary of all themes discussed in our focus groups.

Table 1. *Summary of the Topics Discussed in the Focus Groups*

Sources of jealousy
Images of the romantic partner with friends of the opposite sex
Images of activities to which the romantic partner was not invited
Online chatting or messaging with friends (of the opposite sex)
Top friends and messages in Snapchat
Likes and comments on pictures of the opposite sex
Sources of conflict and irritation
Messages without emoticons
Read receipt feature of messaging apps
Reading the romantic partner's messages
Reactions to feelings of jealousy
Talking to the romantic partner
Sending 'dry messages'
Directly contacting the perceived rival
Looking up the perceived rival
Not discussing the feelings of jealousy
Monitoring behaviors
Reading each other's messages
Accessing each other's social media profile pages
Monitoring each other's social media profile pages
Knowing the password or pin code
Adapting social media behavior
Pictures with the opposite sex are no longer appropriate
Liking and posting comments on pictures of the opposite sex is no longer appropriate
No longer appropriate to post sexy pictures

Sources of Jealousy

Our respondents described several ways in which social media could elicit jealousy within their romantic relationships. More specifically, they perceived pictures, online messages, the application Snapchat, and likes or comments to pictures of the opposite sex as important causes of jealousy.

Across focus groups, adolescents identified online pictures with other people as an important cause for jealousy within teenage romantic relationships. Two types of photographs emerged from the data. The first type consisted of images of the romantic partner with friends of the opposite sex, which could cause feelings of jealousy and distrust. Sometimes these pictures could lead to an argument between the romantic partners, as one male respondent (R7, focus group 8, male) noted: "When you see her [Instagram] story and you see her with another boy… even if it's your friend, it doesn't matter… If she met up with a boy and you get to see that. It's not that she hasn't told you, but you think: 'oh, she met up with him and not me'… You know what I mean?". Another female respondent mentioned:

> R2: "Well, I wouldn't like it if my boyfriend would [have a picture] with another girl… it depends… with… If it is with an entire group… But if it is really with just one girl, no, I really wouldn't…"
> R4: "Yeah, I really feel the same… I am a really jealous person, I am honest about that, and… He did that actually, and he usually doesn't post a lot of pictures. And then he posts such a picture [with another girl], and I think like 'come on'."
> R2: "I mean… There are no pictures, and this is one of the pictures that is on his profile. And I found it… We really had a discussion about it… So yeah, I really didn't like that."
> (*Focus group 11, females*)

The second type of images that could cause jealousy or conflict, consisted of photographs of activities in which the romantic partner participated but to which the other partner had not been invited, such as going out or going to a party. The participants perceived that these types of images had the potential to elicit jealousy, as one of the partners could feel left out, or because they did not know ahead that the romantic partner had planned or participated in this activity:

> R3: "Or if they say something like 'can we meet-up tomorrow'. 'Oh no, I am sorry, I can't. I have an appointment'. And then you see on Snapchat or somewhere else a picture posted. 'You didn't say that you would be going to that place'. Well yes, the boy didn't lie either, he just doesn't say everything that he is going to do."
> (*Focus group 1, females*)

> R1: "[…] When you notice that a picture has been posted in which you are not depicted and you knew that they were planning on doing an activity together. It might lead you to think: 'It is stupid that I am not invited'. Well of course, it is not that I encounter this problem often (laughter)."
> R2: "No, but you are right."
> R1: "I think that this is also a cause. I mean, you get to see it all."
> R3: "Yeah, that is especially the case with Snapchat because it is just a snapshot from the same day."
> R5: "And then you feel miserable all day, like: 'ooh okay, they are doing something without me'."
> R4: "Or they didn't tell you about it, for example."
> R1: "Yes."
> (*Focus group 3; females*)

Another perceived source of jealousy that was mentioned in 5 of the 12 focus groups, emerged from online chatting or messaging with friends, especially with friends of the opposite sex. It would make the respondents wonder with whom their romantic partner was in touch and what the quality of the relationship between the partner and these contacts was, as one female respondent noted:

> R5: "Messaging. Well yeah, if you are with him and he suddenly gets a message notification or something from another girl, well yeah from a friend or something, you could start asking questions.

But most of the time, it is nothing."
(*Focus group 1; females*)

As evidenced in the prior quotations, the application Snapchat was repeatedly mentioned as a source of jealousy. In 9 of the 12 focus groups, respondents mentioned the now discontinued feature which allowed others to see the top three friends with whom a Snapchat user communicated most often: "You could see on Snapchat who your three best friends were. I think it can cause jealousy if you are together with someone and you see that someone else is in the top 3. I don't know of course, but I can imagine..." (R3, male, focus group 12). Another respondent confirmed: "I also heard from other people that they had been in an argument because 'he Snapchatted with other girls'" (R2, female; focus group 3). Respondents indicated that they would ask their romantic partner who the top three friends on Snapchat were. The respondents were asked in a follow-up question, whether they perceived differences between the various social media in their potential to elicit jealousy. They identified Snapchat as having a high potential to cause feelings of jealousy, as it is a more private and intimate medium to communicate with others than other social media platforms, such as Facebook or Instagram. One of the main causes was its signature feature to permanently remove the images after they had been opened by the receiver. The respondents described the fact that they could not access the original message and its content as an important reason for why they believed that Snapchat had the potential to cause more jealousy than other media. As one respondent noted (R4, male; focus group 6): "Yeah, you don't know what's in it. With [Facebook] Messenger, you can go back and see what has been sent. With Snapchat you can't see what has been sent. And that makes it difficult". In one focus group, the respondents did not perceive a clear distinction between different social media to elicit jealousy: "Oh I don't think so. I believe that it is the same" (R2, female; focus group 1).

Another potential source of jealousy, that was perceived by the respondents in 4 of the 12 focus groups was that their romantic partner would like or comment on pictures of friends of the opposite sex. One female respondent noted (R1; focus group 1): "[...] When he likes a picture of a girl, then I will get somewhat jealous. You will also start getting in an argument over stupid things". In 2 of the 12 focus groups, the respondents also observed that comments and likes of others on their romantic partner's pictures or posts had the potential to cause jealousy and suspicion, as one female respondent noted:

> R3: "That's true. If I get comments on my picture from my ex (boyfriend) or from boys of which he knows that they had romantic interest in me, he also reacts like: 'what did they say'. He doesn't like it, but it's not that he is really jealous because he trusts me. But he can get... It's not always nice and I do understand that. If he gets reactions from people of whom I know that they are interested in him, it is also like "oh". But I am not really angry or jealous, because he can't help it either of course."
> (*Focus group 2*)

Sources of Conflict and Irritation

The respondents further mentioned two major sources of conflict and irritation within teenagers' romantic relationships: messages without emoticons and the read receipt feature of popular messaging applications, such as WhatsApp or Facebook Messenger.

An important perceived source of conflict within romantic relationships, which was mentioned in 6 out of 12 focus groups, was that written messages between romantic partners could be misinterpreted and misunderstood. So-called "dry" messages in which emoticons are absent or in which the message was shorter than usual, would often lead one of the partners to believe that the other was unhappy with the relationship or that they were angry at them, as one female respondent (R1; focus group 9) noted: "Yeah, we always send a smiley and a heart after messages. And if I suddenly leave out a smiley, he will immediately send to me: 'what's wrong?' – 'why?' – 'you forgot your smiley' – 'okay, I will add a smiley' – 'okay, that's better, that way I know how you feel'.

A particular source of conflict and irritation was perceived to be the read receipt feature of messaging apps, such as WhatsApp or Facebook Messenger, which allows users to see whether a message has been read by the recipient. Our respondents described that they felt that these read receipts were a source of annoyance both within their romantic relationships as well as within their friendships. They perceived it to be annoying, when the recipient of their messages would not reply, although the read receipt indicated that they had received and read

the messages. They felt a similar pressure to reply promptly themselves to the messages, as one male respondent explained (R2; focus group 4): "Yeah it is true. If you have read it, you need to reply. Or else she will not feel good about it". Others described it as a matter of "politeness" and "respect" to answer promptly to messages that they had received through these applications, as one female respondent (focus group 2) noted:

> R5: "Ooh, that's irritating. Ooh... I am really annoyed by that. People read something and you think 'oh, he is straight-up ignoring me'. Then he says 'no, I just was not able to answer.' And then you don't know whether he lied or whether it is true. Well you notice, it is sometimes very unrespectful, when you see that someone has read something and he doesn't reply."

In 4 out of 12 focus groups, the respondents described the 'read receipt feature' as a disadvantage, because they felt that they did not have the time to think about an appropriate answer, as they felt that it was expected by the partner that they would respond right away. For some respondents, not being able to reply to a message instantly, was associated with feelings of stress and guilt, both within their romantic relationships as well as their friendships, as one female respondent (focus group 3) shared:

> R3: "I have experienced it lately because a friend had sent me something. And I thought, I am not going to open that yet and I am also not going to reply yet, because I am going to first discuss it with my mother. And I then opened it the next day and I replied and I felt really bad about it, because I thought that she would see that I had been active the entire time but that I did not open that message. So I felt guilty the entire time. But it is also a feeling of stress like 'ooh I have to really ask that' [...]"

In 3 of the 12 focus groups, the respondents indicated that they would avoid to activate the read receipt feature by not opening the message in the smartphone application, but by just reading the text that was displayed in the notification section on their smartphone: "You can just scroll down on [the lock screen of] your smartphone and read what they have sent before you [open the message]..." (R3, male, focus group 4). In 3 of the 12 focus groups, the respondents indicated, that if they would not get a reply, that they would ask mutual friends to send a message to this person, to check whether they were able to get in touch and receive a response. This way they would be able to check whether the friend was ignoring them or actually unavailable, as one female respondent noted (R3, focus group 9): "I also do this. I always use [name of male friend], because I know that those two have a bromance. They send 'hearts' [emoticons] to each other ... 'sweetie', 'honey', and the like (laughs). And if he [the boyfriend] does not respond, or if I am worried, I will be like 'gosh, [name of male friend] talk to [name of boyfriend]".

A final perceived source of conflict consisted of reading the romantic partner's messages. This behavior was discussed along with online monitoring behaviors and will be examined more extensively below. Other potential sources of jealousy or conflict that were mentioned but not repeated across the focus groups, included: having contact with an ex-partner, the unauthorized distribution of self-made sexually explicit pictures of the romantic partner, the forwarding of screenshots of private messages, and being jealous because one of the partners is perceived to be more popular on social media than the other (i.e., one of the partners gets more 'likes' on Facebook messages than the others).

Reactions to Feelings of Jealousy

The respondents perceived several ways in which others would react when experiencing feelings of jealousy. A first way, that was mentioned in 6 of the 12 focus groups, consisted of discussing these feelings with the romantic partner and asking with whom he or she is communicating if the jealousy was caused by interactions with others. Another strategy consisted of expressing anger and jealousy through so-called 'dry' communication to the romantic partner (i.e., by sending shorter messages or messages without emoticons). In 3 of the 12 focus groups the respondents described that some adolescents would contact the person they were jealous at (e.g., the girl or boy that was in a picture with their romantic partner) to ask them how they got to know their romantic partner and what the status of their relationship was, as one female respondent (focus group 2) explained in a personal anecdote:

> R3: "And also, I have experienced this myself, when I commented on a picture of a friend. Really nothing special just 'handsome' or something, I forgot. His girlfriend really 'liked' that [Facebook

comment]. So it really was to say 'he is still mine'. And yeah, I found it a bit odd. And she also send me a message in the name of her boyfriend. But nothing was going on between him and me, so it is solved. Because I just told her 'nothing is going on'. But there are people like that. I think so."

M: "What did she send you? A message to ask you about the relationship between you and the boy?"

R3: "Yes, first she just sent it under his name. So I was chatting with him, like I would be communicating with him. And then she said 'yes, but you are actually talking to his girlfriend'. Euhm, yes, and then she asked how our relationship was, but nothing was going on. (laughs). Yeah. And I, actually don't even know her boyfriend that well. It is not that I really meet-up with him or anything. I have never had a meet-up with him but I know him from some summer camp with the [Christian Youth Organization]. So I talk with him very rarely but really, nothing is going on between us (laughs)."

In 3 of the 12 focus groups, the respondents also noted that they would look up who the other person was by visiting their social media profiles. Other strategies that the respondents perceived that were used to signal to others that their boy- or girlfriend was in a romantic relationship with them, but that were not repeated in multiple focus groups included: publishing additional pictures on social media in which the couple is depicted, and 'liking' the message of the partner in order to show that he/she does not feel 'threatened'. In focus group 3, two of the female participants mentioned that they would not discuss their feelings with their boyfriends and would probably keep it to themselves: "[...] I am not good at saying those things. If something... When I am jealous, I don't immediately say it and mostly..., I don't necessarily suppress it, but I am just not going to say anything about it. [...]" (R3).

Monitoring Behaviors

Along with feelings of jealousy and the potential responses to jealousy, several monitoring behaviors were discussed by the respondents, such as accessing each other's profile pages and messages, exchanging passwords and pin codes, and monitoring the romantic partner's social media pages.

One of the main digital monitoring behaviors consisted of reading each other's messages or accessing each other's social media profiles. Across focus groups, respondents had observed this behavior among their friends and some within their own romantic relationships. Messages could be read when the romantic partner forgot to log out from their social media accounts on shared devices or when parts of the messages were visible on the 'notifications' screen of the smartphone, or by gaining access with a password. The respondents deemed reading and accessing each other's profiles in general as unacceptable behavior. Although they had heard several stories about this among their peers and some had even experienced it themselves within their own romantic relationships: "I think it's ridiculous. It's private. If she wants to know your password to control you... It shouldn't be like that" (R4, male, focus group 11)

Accessing and reading the partner's private messages was, however, found acceptable in cases when there was suspicion that the romantic partner would be unfaithful or if the individual had the suspicion that the romantic partner was cheating, as one female respondent noted: "[...] But if you, yeah... It's actually wrong but... if you have a suspicion that something is really not okay. I sometimes have this, well... Sometimes you can experience this feeling. That you feel like... That you... That's something is not right, euhm... In this case I would do it [accessing the romantic partner's social media accounts]" (R2, focus group 11).

Reading and accessing each other's profile pages was discussed along with knowing each other's passwords and mobile phone pin codes. In most of the focus groups, the respondents indicated that they were aware that some couples would exchange passwords, but the respondents indicated across focus groups that they disagreed with this practice and considered it to be a 'violation of their privacy' or a 'sign of an unhealthy relationship'. Some respondents were concerned that by doing so, personal information might be misused after a romantic break-up:

R4: "Yeah, it's not wise"

R2: "Yeah, I don't think that that's wise (laughs)"

M: "Why?"

R2: "If you happen to break up... (unintelligible)... you can ruin the other person's life..."

R3: "It's just… Yeah, euhm… I find it even… Even if you are married, you shouldn't [share] e-mail addresses, and… You need to always have privacy…"

R3: "For example, my girlfriend has access to my cell phone, so she could technically access my Facebook […]"

(*Focus group 8, males*)

As evidenced in the conversation above, some respondents indicated that they knew the romantic partner's password or pin code for their smartphone or had shared their own codes and passwords with their romantic partner. In these instances, they had not explicitly asked their romantic partner for their passwords or they hadn't shared it with them, but they learned them through various ways. Two ways to learn the partner's password that emerged from the data were observing the romantic partner entering the pin code in their smartphone, or having shared the password with the romantic partner so that they could answer text messages or look up information on their cell phone for them (e.g., when one of them was busy doing something else and asked their partner to check their phone for them). One female respondent noted: "I don't know, for me it is not necessary to exchange passwords. It is not like you enter a relationship and you have to know each other's passwords and stuff. But for example, when you need something from Facebook, if I ever need something, I would give my password to him" (R2, focus group 1).

In 4 out of 12 focus groups monitoring behaviors, such as checking the romantic partner's Facebook page or accessing the partner's e-mail account were also often described by the participants as being 'curious' or 'interested' rather than 'controlling'. The respondents discussed that they just wanted to know what their romantic partner was doing, and they were just 'curious' about what he or she was up to rather than being intentionally controlling. This was evidenced by an account of one focus group:

M: "Because you told earlier that you were looking through each other's cell phones… But that… That's not to control each other but rather to have a look…"

R1: "That's just because I am curious… But yeah, I don't have all his apps… Than I am just scrolling through his Facebook, and looking at what he comments on…"

R1: "The things he posts… Just because… I like to know that, but… not really to control him…"

R3: "That way you see something different… [name of boyfriend] and I also give each other our cell phones, like 'oh, another home page'."

R3: "I have [looked at] the messages of his friends… I just wanted to see, what he sends to his friends… All short video clips… (laughs). But it is not that I am searching like 'what! He messaged with a girl?'. It's not like that but… (unintelligible)…. Also because I know them all personally. It's just funny when someone is drunk or something like that, with a video. (laughs)"

(*Focus group 9, females*)

In 2 out of 12 focus groups, the respondents mentioned that their romantic partner had marked them as a 'favorite' on their Facebook lists, so that they would get a notification when the respondent would post something online, and so that their posts would appear first in their news feed: "I have a 'star' with [name of his girlfriend]. It is crazy but when I post something on Facebook it will appear, and she will get a notification" (R2, male, focus group 4).

Three other ways of monitoring the romantic partner that were mentioned by the respondents but that were not repeated across the focus groups or that were not highly prevalent according to our respondents included: tracking the romantic partner via the smartphone, monitoring and controlling the romantic partner's friends' list, and asking the romantic partner to break off contact with others.

The Need to Adapt Social Media Behavior Within a Romantic Relationship

After entering into a romantic relationship, it is not uncommon for adolescents to change the way in which they present themselves on social media. Our respondents perceived three ways in which this process could occur. First, across focus group conversations, the respondents mentioned that it was no longer appropriate to post pictures with opposite-sex friends, especially in the case that the romantic partner had not yet met the other person or if the pictures were taken at parties. The respondents noted that sometimes, pictures would be taken

at bars or clubs and that it should be avoided to be tagged in those photographs in order to avoid jealous reactions of the romantic partner. For example, one male respondent said (R1, focus group 6): "[...] When you go to a party. Often pictures will be taken and if someone is accidentally in the picture. She will ask 'who is that?' and so, 'why is she in the picture?'".

Second, the respondents perceived it as being less appropriate to like and to post comments on pictures and profile from someone of the opposite sex. Although some respondents felt that they could still like and comment on pictures from other boys and girls respectively, others indicated that they made efforts to avoid liking and commenting on pictures of others:

> R2: "Yeah but even with just beautiful girls. When I am scrolling through Facebook... before, when I saw this, I would click on it. But now, if I see a pretty girl, I think: 'It is a nice looking girl, but is probably better to not like that picture', because if she sees this then euhm... (laughs)."
> (*Focus group 4, male respondent*)

Third, in 3 out of 12 focus groups, the female respondents also perceived that it was no longer appropriate to post pictures of themselves in a bikini or photographs that could be considered 'sexy' or sexual in nature, when they were in a romantic relationship.

Discussion

Teenage relationships are sometimes affected by experiences of relational insecurity and jealousy, as adolescents have not yet reached the same level of attachment within their romantic relationships as adults (Collins, Welsh, & Furman, 2009; Reed et al., 2016). As Baker and Carreño (2016) observed, technology use seems to have made it more difficult for teenagers to achieve stability within their romantic relationships. The goal of this study was to explore, by means of focus group discussions, how adolescents perceive digital media as contributing to feelings of jealousy, conflict and irritation, monitoring behaviors, and self-censoring behaviors within their romantic relationships.

Jealousy

Our study identified several ways in which social media may cause jealousy within teenage romantic relationships. First, respondents regarded both images with others and photographs in which the partner was engaged in an activity without them, as having the potential to contribute to feelings of jealousy. That pictures are considered an important source of information extends previous research on the role of images in other stages of romantic relationship development (Fox et al., 2013; Van Ouytsel, Van Gool, et al., 2016). Especially during the stage of relational information seeking, prior studies have identified images as important sources of information for evaluating crushes and potential romantic partners among both adult and adolescent samples (Fox et al., 2013; Van Ouytsel, Van Gool, et al., 2016). Our study expands on these results, finding that photographs also play a powerful role in other stages of a romantic relationship. In particular, the ability of social networking sites to render visible certain photographs which would otherwise not have been easily accessible (e.g., pictures of parties and activities to which the romantic partner was not invited), may create jealousy and uncertainty about the romantic relationship (Fox & Anderegg, 2016). This finding is also in line with experimental research, which found that photographs are considered to be stronger cues than textual information on Facebook profiles during the process of impression formation (Van Der Heide, D'Angelo, & Schumaker, 2012). The recurring importance of images across studies warrants further research into the role that images play within adolescents' relationship development, across all the stages of relationship formation.

The respondents identified Snapchat as a medium that may often cause jealousy, because the messages are deleted upon being opened. As communication through Snapchat cannot be stored, it may cause some respondents to feel uncertain about what was said and communicated via such a private channel. This is in line with prior research among adults, which found that messages that score high on exclusivity (and are less publically accessible) have the potential to cause higher feelings of jealousy (Cohen et al., 2014; Utz et al., 2015).

When confronted with feelings of uncertainty or jealousy, our respondents mentioned several ways in which they deal with these emotions. Although some respondents engage in conversations with their romantic partners to talk about their emotions, others resort to unproductive coping mechanisms, such as passive-aggressive communication styles (e.g., intentionally replying through short messages), contacting the person with whom the partner was communicating, or feeling angry at the romantic partner without openly discussing or acknowledging these feelings. From a developmental perspective, adolescents often perceive challenges in navigating and responding to these types of emotions, as they are inexperienced at handling them within the context of what are often their first romantic relationships (Rogers et al., 2018). This underscores the need for relationship education programs to focus on how to communicate about feelings of doubt and how to attain effective conflict resolution skills. It is remarkable that none of the participants mentioned an inclination to seek support or advice from others on how to deal with feelings of jealousy and relational uncertainty. Therefore, in addition to these conflict resolution strategies, adolescents may be taught to seek support from trusted others, such as parents, counselors or youth helplines and youth organizations.

Conflict and Irritation

Our study identified some sources of conflict within adolescent romantic relationships. One source of conflict identified by the adolescents was the potential for misinterpretation by the recipient of written messages. This can be explained by the fact that written communication often lacks context and cues to facilitate interpretation of the emotional tone of messages (Heirman & Walrave, 2008; Suler, 2004). The respondents mentioned that brief messages, or messages from which emoticons were absent, could lead them to believe that the sender was mad at them. This in turn sometimes caused uncertainty over the status of the romantic relationship. Emoticons are often used as a substitute for emotional expressions in face-to-face communication. Teenagers have been found to use more emoticons in communication with friends than with strangers (Derks, Bos, & von Grumbkow, 2007; Vandekerckhove, 2007). In the context of romantic relationships, previous studies have found that the use of emoticons also plays an important role during the initiating stages of a romantic relationship (Van Ouytsel, Van Gool, et al., 2016) and often function as a digital substitute for flirtatious gestures (Whitty, 2003). Future studies may explore whether individuals with certain relational attachment styles benefit more from the use of emoticons in their computer-mediated communication than others, as it can be hypothesized that the absence of emoticons may be particularly stressful for those teenagers who are already anxious or insecure about their romantic relationships.

Another source of irritation was the *read receipt* feature of popular messaging applications such as Facebook Messenger or WhatsApp. The respondents identified disparities in the speed of replies as a source of conflict, both within their romantic relationships and in their friendships. Some teenagers in our sample perceived a need to immediately respond to messages upon reading them, some described it as a matter of "politeness" to reply in a timely fashion, and others reported experiencing feelings of guilt if they failed to send a prompt reply. This is in line with quantitative research conducted among adults, by Vorderer, Krömer, and Schneider (2016), which found that 85% of adult social networking site users within their sample responded faster when the read receipt feature was activated, because they felt it impolite to not respond promptly. A majority of these participants felt an urgency to respond to these messages quickly because they felt that a prompt reply was expected by the sender. Our respondents described coping strategies, such as only reading the messages on the notifications screen of the smartphone so that the read receipt feature would not be activated, that were also found in the study by Vorderer et al. (2016).

Along with feeling annoyed by a lack of response, the teenagers in our study further indicated that some individuals used a variation of a "triangle test" by asking common friends to reach out to their romantic partners to check whether they received a reply more quickly. A triangle test usually involves the use of a third person to test the partner's feelings or fidelity, such as using a friend to make the partner jealous or to check whether the romantic partner would cheat. The use of friends to determine whether a partner responds faster to a friend's message, relative to a message from a boyfriend or girlfriend may be considered an alternative variation on this test (Bell & Buerkel-Rothfuss, 1990). Our findings are also in line with a previous qualitative study, by Stonard et al. (2017), which showed that the read receipt feature of certain applications may lead to emotional distress among adolescents, as well as to further monitoring and controlling behaviors toward romantic partners if they failed to respond.

Future research may investigate whether individual differences, such as attachment styles within interpersonal relationships, are related to feelings of anxiety and irritation over the 'read receipt' feature of messaging applications. It may be hypothesized that differences in attachment style could lead to different expectations about the speed of a reply to an instant message and to different emotional responses when a message sent through these applications is not immediately acknowledged and responded to. Future research may also undertake a more thorough investigation of how the demands and expectations of online messaging impose stress and strain on romantic relationships. Moreover, future studies may also focus on whether and to what extent demands and expectations about the speed of communication are negotiated and discussed within teenage romantic relationships. Prevention efforts may focus on strategies to help adolescents cope with the demands of being online constantly and to discuss healthy boundaries for communication within their friendships and romantic relationships.

Monitoring

Whereas Baker and Carreño (2016) found that most of their respondents did not have any objections to monitoring their romantic partners, a majority of our respondents voiced negative opinions and espoused negative attitudes toward monitoring and controlling a romantic partner by means of digital technology. However, despite the fact that the teenagers condemned controlling and monitoring behaviors as a breach of a partner's privacy, they appeared to be aware of the various ways in which their peers may engage in them. Some of our respondents even admitted that they themselves had engaged in monitoring and controlling behaviors, such as reading a romantic partner's private messages or actively monitoring their social media pages. These findings are in line with quantitative research, which found that teenagers reported higher rates of perpetration of digital forms of harassment and cyberstalking than offline forms of dating violence (Smith-Darden et al., 2017).

As Smith-Darden et al. (2017) suggested, adolescents may perceive surveillance behaviors as normative within their romantic relationships and not necessarily as abusive or problematic. Some respondents described their engagement in controlling and monitoring behaviors out of "curiosity" and "interest in their romantic partner" rather than with the intent to control or monitor. This squares with prior research, which found that adolescents often do not perceive acts of (online) dating violence within their relationships as problematic (Helm et al., 2015; Lucero et al., 2014). Baker and Helm (2010) found, for instance, that teenagers who are victims of controlling and monitoring behaviors mostly regard them as annoying or irritating and do not necessarily describe them as dating violence. This may cause them to remain within abusive and unhealthy romantic relationships rather than leaving them (Helm et al., 2015). Our finding further highlights the need for relationship education to focus on healthy relationship skills and to discuss examples of healthy and unhealthy behaviors within romantic relationships. Future research may, for example, use vignettes or narratives with different relationship scenarios to investigate, in greater detail, which relationship behaviors youths considered to be abusive and which they do not.

Similarly, most respondents condemned the fact some teenage couples exchange or know each other's passwords. Although most respondents in our focus groups spoke out against the sharing of passwords and pin codes, they also acknowledged that it was not uncommon, within romantic relationships, to know each other's passwords. As opposed to studies by Baker and Carreño (2016) and by Lucero et al. (2014), who found that sharing each other's passwords was regarded as a sign of commitment and trust within romantic relationship, the youth in our sample observed that, when passwords and pin codes are not explicitly demanded by romantic partners, they are often exchanged when romantic partners observe each other entering the password or pin code and when they provide them to a romantic partner to look information up on each other's profile page. As previous research has found a link between sharing passwords and a heightened chance for online risk victimization, such as cyberbullying, this finding underscores the need for prevention initiatives to advise teenagers not to share their passwords and to discuss boundaries and ethics in using romantic partners' passwords without their permission (Van Ouytsel, Van Gool, et al., 2016; Van Ouytsel, Walrave, Ponnet, & Temple, 2016; Walrave & Heirman, 2011).

Adapting Social Media Behavior

In the final part of our focus group conversations, our adolescent participants identified several ways by which they tried to avoid a romantic partner's romantic jealousy. Our respondents perceived that their social media behavior changed once they entered a romantic relationship. This led to self-censoring behaviors, such the

avoidance of taking pictures with individuals other than the romantic partner and omitting to like and comment on pictures or posts with others. This is especially true, as comments and likes on the pictures of others may lead to jealousy and conflict within the romantic relationship. Finally, girls described censoring "sexy" images or not posting photographs that could be considered sexually explicit in nature. Future research may further investigate different forms of self-censoring behaviors within romantic relationships and how they affect adolescents' emotions. Relationship education efforts may focus on discussing whether self-censoring behaviors are needed and how adolescents can maintain self-presentation and self-expression within their romantic relationships.

Limitations

Although our study provides new insights into the role of digital media within romantic relationships, the results should be interpreted in light of some limitations. First, we used a convenience sample of adolescents, who self-selected for their participation in our study. During the recruitment process, respondents were told that our study would focus on the role of digital media within romantic relationships. It is possible that adolescents who have a higher interest in these topics or are more willing to talk openly about these themes, were likelier to sign up than others. Second, although the researchers took several measures to enhance the respondents' feeling of privacy, by stressing that their responses would not be published in an identifiable manner, some participants may have provided socially desirable answers. Future research may rely on interviews or written questionnaires as a means to minimize bias in the respondents' answers. Third, we collected only limited demographic information on our focus group participants (i.e., age and gender). We did not obtain other background variables, which could have impacted their responses, such as the frequency of their digital media use, the amount of time spent online per day, or how much experience the respondents had with romantic relationships. Fourth, we were not able to ask the respondents about their sexual orientation and account for this in the analyses. Future research may focus on the experiences of LGBTQ youth and how they experience the use of digital media within their romantic relationships.

Conclusion

In conclusion, this study undertook an in-depth exploration of adolescents' perceptions of the ways that digital media can contribute to feelings of jealousy, conflict and control within their romantic relationships. The respondents identified several sources of jealousy and conflict within their romantic relationships, such as pictures with others, online messaging and online chatting with others. Along with feelings of jealousy, the respondents discussed several monitoring behaviors, such as reading each other's e-mails. These results highlight the need to disseminate information about e-safety in the context of dating violence prevention education and the need to teach adolescents how to cope with forms of control and pressure within their romantic relationships and to deal with jealousy and relational uncertainty, caused by digital media, within their romantic relationships.

Acknowledgement

References

Apestaartjaren. (2018). Apestaartjaren: *De digitale leefwereld van kinderen en jongeren* [The Digital Environment of Children and Youth]. Gent, Belgium: Mediaraven.

Baker, C. K., & Carreño, P. K. (2016). Understanding the role of technology in adolescent dating and dating violence. *Journal of Child and Family Studies*, *25*, 308-320. https://doi.org/10.1007/s10826-015-0196-5

Baker, C. K., & Helm, S. (2010). Pacific youth and shifting thresholds: Understanding teen dating violence in Hawai'i. *Journal of School Violence, 9*, 154-173. https://doi.org/10.1080/15388220903585879

Bell, R. A., & Buerkel-Rothfuss, N. L. (1990). S(he) loves me, s(he) loves me not: Predictors of relational information-seeking in courtship and beyond. *Communication Quarterly, 38*, 64-82. https://doi.org/10.1080/01463379009369742

Bevan, J. L. (2018). Social networking site password sharing and account monitoring as online surveillance. *Cyberpsychology, Behavior, and Social Networking, 21*, 797-802. https://doi.org/10.1089/cyber.2018.0359

Bevan, J. L. (2017). Liking, creeping, and password sharing: Romantic jealousy experience and expression and social networking sites. In N. M. Punyanunt-Carter & J. S. Wrench (Eds.), *The impact of social media in modern romantic relationships* (pp. 165-181). Lanham, MD, US: Lexington Books.

Borrajo, E., Gámez-Guadix, M., Pereda, N., & Calvete, E. (2015). The development and validation of the cyber dating abuse questionnaire among young couples. *Computers in Human Behavior, 48*, 358-365. https://doi.org/10.1016/j.chb.2015.01.063

Brown, B. B., Feiring, C., & Furman, W. (1999). Missing the love boat: Why researchers have shied away from adolescent romance. In W. Furman, B. B. Brown, & C. Feiring (Eds.), *The development of romantic relationships in adolescence* (pp. 1-18). Cambridge, UK: Cambridge University Press.

Cano, A., Avery-Leaf, S., Cascardi, M., & O'Leary, K. D. (1998). Dating violence in two high school samples: Discriminating variables. *Journal of Primary Prevention, 18*, 431-446. https://doi.org/10.1023/A:1022653609263

Carver, K., Joyner, K., & Udry, J. R. (2003). National estimates of adolescent romantic relationships. In P. Florsheim (Ed.), *Adolescent romantic relations and sexual behavior: Theory, research, and practical implications* (pp. 23-56). Mahwah, NJ, US: Lawrence Erlbaum Associates Publishers.

Cohen, E. L., Bowman, N. D., & Borchert, K. (2014). Private flirts, public friends: Understanding romantic jealousy responses to an ambiguous social network site message as a function of message access exclusivity. *Computers in Human Behavior, 35*, 535-541. https://doi.org/10.1016/j.chb.2014.02.050

Collins, W. A., Welsh, D. P., & Furman, W. (2009). Adolescent romantic relationships. *Annual Review of Psychology, 60*, 631-652. https://doi.org/10.1146/annurev.psych.60.110707.163459

Connolly, J., Craig, W., Goldberg, A., & Pepler, D. (1999). Conceptions of cross-sex friendships and romantic relationships in early adolescence. *Journal of Youth and Adolescence, 28*, 481-494. https://doi.org/10.1023/A:1021669024820

Dainton, M., & Aylor, B. (2001). A relational uncertainty analysis of jealousy, trust, and maintenance in long-distance versus geographically close relationships. *Communication Quarterly, 49*, 172-188. https://doi.org/10.1080/01463370109385624

Dainton, M., & Berkoski, L. (2013). Positive and negative maintenance behaviors, jealousy, and Facebook: Impacts on college students' romantic relationships. *Pennsylvania Communication Annual, 69*, 35-50.

Daspe, M.-È., Vaillancourt-Morel, M.-P., Lussier, Y., & Sabourin, S. (2018). Facebook use, Facebook Jealousy, and intimate partner violence perpetration. *Cyberpsychology, Behavior, and Social Networking, 21*, 549-555. https://doi.org/10.1089/cyber.2018.0159

Derks, D., Bos, A. E. R., & von Grumbkow, J. (2007). Emoticons and social interaction on the Internet: The importance of social context. *Computers in Human Behavior, 23*, 842-849. https://doi.org/10.1016/j.chb.2004.11.013

Dibble, J. L., Punyanunt-Carter, N. M., & Drouin, M. (2018). Maintaining relationship alternatives electronically: Positive relationship maintenance in back burner relationships. *Communication Research Reports, 35*, 200-209. https://doi.org/10.1080/08824096.2018.1425985

Dick, R. N., McCauley, H. L., Jones, K. A., Tancredi, D. J., Goldstein, S., Blackburn, S., . . . Miller, E. (2014). Cyber dating abuse among teens using school-based health centers. *Pediatrics, 134,* e1560-e1567. https://doi.org/10.1542/peds.2014-0537

Fox, J. (2016). The dark side of social networking sites in romantic relationships. In G. Riva, B. K. Wiederhold, & P. Cipresso (Eds.), *The psychology of social networking Vol. 1: Personal experience in online communities* (pp. 78-89). Berlin, Germany: DeGruyter Open.

Fox, J., & Anderegg, C. (2016). Turbulence, turmoil, and termination: The dark side of social networking sites for romantic relationships. In E. S. Gilchrist-Petty & S. D. Long (Eds.), *Contexts for dark side communication* (Vol. 269-280). New York, NY, US: Peter Lang.

Fox, J., & Moreland, J. J. (2015). The dark side of social networking sites: An exploration of the relational and psychological stressors associated with Facebook use and affordances. *Computers in Human Behavior, 45*, 168-176. https://doi.org/10.1016/j.chb.2014.11.083

Fox, J., Osborn, J. L., & Warber, K. M. (2014). Relational dialectics and social networking sites: The role of Facebook in romantic relationship escalation, maintenance, conflict, and dissolution. *Computers in Human Behavior, 35*, 527-534. https://doi.org/10.1016/j.chb.2014.02.031

Fox, J., & Warber, K. M. (2013). Romantic relationship development in the age of Facebook: An exploratory study of emerging adults' perceptions, motives, and behaviors. *Cyberpsychology, Behavior & Social Networking, 16*, 3-7. https://doi.org/10.1089/cyber.2012.0288

Fox, J., Warber, K. M., & Makstaller, D. C. (2013). The role of Facebook in romantic relationship development: An exploration of Knapp's relational stage model. *Journal of Social and Personal Relationships, 30*, 771-794. https://doi.org/10.1177/0265407512468370

Frampton, J. R., & Fox, J. (2018). Social media's role in romantic partners' retroactive jealousy: Social comparison, uncertainty, and information seeking. *Social Media + Society, 4*(3). https://doi.org/10.1177/2056305118800317

Giordano, P. C., Soto, D. A., Manning, W. D., & Longmore, M. A. (2010). The characteristics of romantic relationships associated with teen dating violence. *Social Science Research, 39*, 863-874. https://doi.org/10.1016/j.ssresearch.2010.03.009

Heirman, W., & Walrave, M. (2008). Assessing concerns and issues about the mediation of technology in cyberbullying. *Cyberpsychology: Journal of Psychosocial Research on Cyberspace, 2*(2), article 1. Retrieved from https://cyberpsychology.eu/article/view/4214/3256

Helm, S., Baker, C. K., Berlin, J., & Kimura, S. (2015). Getting in, being in, staying in, and getting out: Adolescents' descriptions of dating and dating violence. *Youth & Society, 49*, 318-340. https://doi.org/10.1177/0044118X15575290

Karney, B. R., Beckett, M. K., Collins, R. L., & Shaw, R. (2007). *Adolescent romantic relationships as precursors of healthy adult marriages: A review of theory, research, and programs*. Santa Monica, CA, US: Rand Corporation.

Krueger, R. A., & Casey, M. A. (2009). *Focus groups: A practical guide for applied research* (4th ed.). Los Angeles, CA, US: Sage Publications Inc.

Kuttler, A. F., & la Greca, A. M. (2004). Linkages among adolescent girls' romantic relationships, best friendships, and peer networks. *Journal of Adolescence*, 27, 395-414. https://doi.org/10.1016/j.adolescence.2004.05.002

Lane, B. L., Piercy, C. W., & Carr, C. T. (2016). Making it Facebook official: The warranting value of online relationship status disclosures on relational characteristics. *Computers in Human Behavior, 56*, 1-8. https://doi.org/10.1016/j.chb.2015.11.016

Langlais, M. R., Seidman, G., & Bruxvoort, K. M. (2018) Adolescent romantic relationship–oriented Facebook behaviors: Implications for self-esteem. *Youth & Society.* Advance online publication. https://doi.org/10.1177/0044118X18760647

Leadbeater, B., Connolly, J., & Temple, J. R. (2018). Changing your status in a changing world: It is complicated! A developmental systems framework for understanding dating violence in adolescents and young adults. In D. A. Wolfe & J. R. Temple (Eds.), *Adolescent dating violence: Theory, research, and prevention* (pp. 3-23). San Diego, CA, US: Academic Press.

Lenhart, A., Smith, A., & Anderson, M. (2015). *Teens, technology and romantic relationships*. Washington, DC, US.: Pew Research Center.

Lucero, J. L., Weisz, A. N., Smith-Darden, J., & Lucero, S. M. (2014). Exploring gender differences: Socially interactive technology use/abuse among dating teens. *Affilia, 29*, 478-491. https://doi.org/10.1177/0886109914522627

Magdol, L., Moffitt, T. E., Caspi, A., & Silva, P. A. (1998). Developmental antecedents of partner abuse: A prospective-longitudinal study. *Journal of Abnormal Psychology, 107*, 375-389. https://doi.org/10.1037/0021-843X.107.3.375

Meier, A., & Allen, G. (2009). Romantic relationships from adolescence to young adulthood: Evidence from the national longitudinal study of adolescent health. *The Sociological Quarterly, 50*, 308-335. https://doi.org/10.1111/j.1533-8525.2009.01142.x

Muise, A., Christofides, E., & Desmarais, S. (2014). "Creeping" or just information seeking? Gender differences in partner monitoring in response to jealousy on Facebook. *Personal Relationships*, *21*, 35-50. https://doi.org/10.1111/pere.12014

Papp, L. M., Danielewicz, J., & Cayemberg, C. (2012). "Are we Facebook official?" Implications of dating partners' Facebook use and profiles for intimate relationship satisfaction. *Cyberpsychology, Behavior, and Social Networking, 15*, 85-90. https://doi.org/10.1089/cyber.2011.0291

Perles, F., San Martín, J., & Canto, J. M. (2019). Gender and conflict resolution strategies in Spanish teen couples. *Journal of Interpersonal Violence, 34*, 1461-1486. https://doi.org/10.1177/0886260516651316

Peskin, M. F., Markham, C. M., Shegog, R., Temple, J. R., Baumler, E. R., Addy, R. C., . . . Emery, S. T. (2017). Prevalence and correlates of the perpetration of cyber dating abuse among early adolescents. *Journal of Youth and Adolescence, 46*, 358-375. https://doi.org/10.1007/s10964-016-0568-1

Reed, L. A., Tolman, R. M., Ward, L. M., & Safyer, P. (2016). Keeping tabs: Attachment anxiety and electronic intrusion in high school dating relationships. *Computers in Human Behavior, 58*, 259-268. https://doi.org/10.1016/j.chb.2015.12.019

Robards, B., & Lincoln, S. (2016). Making it "Facebook official": Reflecting on romantic relationships through sustained Facebook use. *Social Media + Society, 2*(4). https://doi.org/10.1177/2056305116672890

Rogers, A. A., Ha, T., Updegraff, K. A., & Iida, M. (2018). Adolescents' daily romantic experiences and negative mood: A dyadic, intensive longitudinal study. *Journal of Youth and Adolescence, 47*, 1517-1530. https://doi.org/10.1007/s10964-017-0797-y

Rueda, H. A., Lindsay, M., & Williams, L. R. (2015). "She posted it on Facebook": Mexican American adolescents' experiences with technology and romantic relationship conflict. *Journal of Adolescent Research, 30,* 419-445. https://doi.org/10.1177/0743558414565236

Sánchez, V., Muñoz-Fernández, N., & Ortega-Ruíz, R. (2015). "Cyberdating Q_A": An instrument to assess the quality of adolescent dating relationships in social networks. *Computers in Human Behavior, 48*, 78-86. https://doi.org/10.1016/j.chb.2015.01.006

Shulman, S., & Kipnis, O. (2001). Adolescent romantic relationships: A look from the future. *Journal of Adolescence, 24*, 337-351. https://doi.org/10.1006/jado.2001.0409

Shulman, S., & Seiffge-Krenke, I. (2001). Adolescent romance: Between experience and relationships. *Journal of Adolescence, 24*, 417-428. https://doi.org/10.1006/jado.2001.0403

Smith-Darden, J. P., Kernsmith, P. D., Victor, B. G., & Lathrop, R. A. (2017). Electronic displays of aggression in teen dating relationships: Does the social ecology matter? *Computers in Human Behavior, 67*, 33-40. https://doi.org/10.1016/j.chb.2016.10.015

Stonard, K. E. (2018). The prevalence and overlap of technology-assisted and offline adolescent dating violence. *Current Psychology*. Advance online publication. https://doi.org/10.1007/s12144-018-0023-4

Stonard, K. E., Bowen, E., Walker, K., & Price, S. A. (2017). "They'll always find a way to get to you": Technology use in adolescent romantic relationships and its role in dating violence and abuse. *Journal of Interpersonal Violence, 32,* 2083-2117. https://doi.org/10.1177/0886260515590787

Suler, J. (2004). The online disinhibition effect. *CyberPsychology & Behavior, 7*, 321-326. https://doi.org/10.1089/1094931041291295

Tokunaga, R. S. (2011). Social networking site or social surveillance site? Understanding the use of interpersonal electronic surveillance in romantic relationships. *Computers in Human Behavior, 27*, 705-713. https://doi.org/10.1016/j.chb.2010.08.014

Utz, S., & Beukeboom, C. J. (2011). The role of social network sites in romantic relationships: Effects on jealousy and relationship happiness. *Journal of Computer-Mediated Communication, 16*, 511-527. https://doi.org/10.1111/j.1083-6101.2011.01552.x

Utz, S., Muscanell, N., & Khalid, C. (2015). Snapchat elicits more jealousy than Facebook: A comparison of Snapchat and Facebook use. *Cyberpsychology, Behavior, and Social Networking, 18*, 141-146. https://doi.org/10.1089/cyber.2014.0479

Van Der Heide, B., D'Angelo, J. D., & Schumaker, E. M. (2012). The effects of verbal versus photographic self-presentation on impression formation in Facebook. *Journal of Communication, 62*, 98-116. https://doi.org/10.1111/j.1460-2466.2011.01617.x

Van Gool, E., Van Ouytsel, J., Ponnet, K., & Walrave, M. (2015). To share or not to share? Adolescents' self-disclosure about peer relationships on Facebook: An application of the Prototype Willingness Model. *Computers in Human Behavior*, *44*, 230-239. https://doi.org/10.1016/j.chb.2014.11.036

Van Ouytsel, J., Ponnet, K., & Walrave, M. (2018). Cyber dating abuse victimization among secondary school students from a lifestyle-routine activities theory perspective. *Journal of Interpersonal Violence*, 33, 2767-2776. https://doi.org/10.1177/0886260516629390

Van Ouytsel, J., Van Gool, E., Walrave, M., Ponnet, K., & Peeters, E. (2016). Exploring the role of social networking sites within adolescent romantic relationships and dating experiences. *Computers in Human Behavior, 55*(Part A), 76-86. https://doi.org/10.1016/j.chb.2015.08.042

Van Ouytsel, J., Walrave, M., Ponnet, K., & Temple, J. R. (2016). Digital forms of dating violence: What school nurses need to know. *NASN School Nurse, 31*, 348-353. https://doi.org/10.1177/1942602X16659907

Vandekerckhove, R. (2007). 'Tussentaal' as a source of change from below in Belgian Dutch. A case study of substandardization processes in the chat language of Flemish teenagers. In S. Elspass, N. Langer, J. Scharloth, & W. Vandenbussche (Eds.), *Germanic language histories "from below" (1700-2000)* (pp. 189-203). Berlin, Germany: De Gruyter.

Vaterlaus, J. M., Tulane, S., Porter, B. D., & Beckert, T. E. (2018). The perceived influence of media and technology on adolescent romantic relationships. *Journal of Adolescent Research, 33,* 651-671. https://doi.org/10.1177/0743558417712611

Vorderer, P., Krömer, N., & Schneider, F. M. (2016). Permanently online – Permanently connected: Explorations into university students' use of social media and mobile smart devices. *Computers in Human Behavior, 63*, 694-703. https://doi.org/10.1016/j.chb.2016.05.085

Walrave, M., & Heirman, W. (2011). Cyberbullying: Predicting victimisation and perpetration. *Children & Society, 25*, 59-72. https://doi.org/10.1111/j.1099-0860.2009.00260.x

Whitty, M. T. (2003). Cyber-flirting: Playing at love on the Internet. *Theory & Psychology, 13*, 339-357. https://doi.org/10.1177/0959354303013003003

Zimmer-Gembeck, M. J., Siebenbruner, J., & Collins, W. A. (2001). Diverse aspects of dating: Associations with psychosocial functioning from early to middle adolescence. *Journal of Adolescence, 24*, 313-336. https://doi.org/10.1006/jado.2001.0410

Zweig, J. M., Dank, M., Yahner, J., & Lachman, P. (2013). The rate of cyber dating abuse among teens and how it relates to other forms of teen dating violence. *Journal of Youth and Adolescence*, 1063-1077. https://doi.org/10.1007/s10964-013-9922-8

Zweig, J., Lachman, P., Yahner, J., & Dank, M. (2014). Correlates of cyber dating abuse among teens. *Journal of Youth and Adolescence, 43*, 1306-1321. https://doi.org/10.1007/s10964-013-0047-x

Appendix

Key Questions

Can social media, such as Facebook, Snapchat and Instagram, cause jealousy? In which ways can this happen?

Are there certain things that you cannot do online anymore once you have a romantic partner? If so, why? Do you have an example?

In which ways could someone control/monitor their romantic partner via social media and the mobile phone?

Some young people ask their romantic partner's password for Facebook or other social media. What is your opinion on this?

Did you ever hear that someone looked at their romantic partner's e-mail messages, cell phone messages, or messages on social networking sites without their permission?

Facebook Messenger and WhatsApp allow you to see whether a 'message' has been 'read' do you ever look at that?

When you think about romantic relationships, the Internet, and the mobile phone, do you think of moments that conflict can occur between partners for something that they have done online?

Can you provide an example of something that happened between a couple of which you thought: this is unacceptable/unhealthy?

Correspondence to:
Joris Van Ouytsel
Department of Communication Studies
Sint-Jacobsstraat 2
2000 Antwerp
Belgium
Email: joris.vanouytsel(at)uantwerp.be
Phone: +32 – 32655279

About Authors

Joris Van Ouytsel, PhD., is a postdoctoral researcher at the University of Antwerp. His work is supported by the Research Foundation - Flanders. Joris focuses his research on the influence of digital media on relationship experiences and sexuality among adolescents. More specifically, he investigates the role of sexting, the exchange of self-made sexually explicit pictures, and cyber dating abuse, the use of digital media within romantic relationship to control or harass a romantic partner.

Michel Walrave, PhD., is a professor at the Department of Communication Studies of the University of Antwerp. He is responsible for the research group MIOS. His research is centered around online self-disclosure and privacy. He investigates individuals' self-disclosure and privacy in interpersonal online communication on social network sites. More particularly, his research focuses on self-disclosure's opportunities (e.g., social capital) as well as risks (e.g., cyberbullying). He also investigates sensitive disclosures (e.g., sexting), their motives and consequences. Next to interpersonal self-disclosures, he also studies internet users' entrusting of personal data to businesses and how consumers deal with new forms of interactive marketing.

Koen Ponnet, PhD., works at the Faculty of Social Sciences, Ghent University, and conducts research in Health Psychology, Media Psychology and Social Psychology. He examines the determinants of online and offline health and risk behaviors of adolescents and adults (e.g., sexting, online self-disclosure, depressive symptoms, drug use, unsafe and unsecure behavior, attitudinal changes). Koen Ponnet deliberately conducts research that has implications for theory-building as well as relevance for practice and policy.

An-Sofie Willems, MSc., obtained her bachelor's degree Communication management from AP University college Antwerp and her master's Communication studies from the University of Antwerp. She currently works as Marketing assistant at Pomax, a Belgian leading interior brand

Melissa Van Dam, MSc., obtained her master degree in communication studies at the University of Antwerp in 2016. She is currently working in the HR Industry as a Payroll Consultant.