

This item is the archived peer-reviewed author-version of:
Fictitious online victimization : exploration and creation of a measurement instrument
Reference:  Erreygers Sara, Symons Michelle, Vandebosch Heidi, Pabian Sara Fictitious online victimization: exploration and creation of a measurement instrumen New media and society - ISSN 1461-4448 - London, Sage publications ltd, (2020), 1461444820960079  Full text (Publisher's DOI): https://doi.org/10.1177/1461444820960079  To cite this reference: https://hdl.handle.net/10067/1716470151162165141

uantwerpen.be

# Fictitious Online Victimization: Exploration and Creation of a Measurement Instrument

Sara Erreygers<sup>a</sup>, Sara Pabian<sup>a</sup>, Michelle Symons<sup>a</sup>, Heidi Vandebosch<sup>a</sup>

<sup>a</sup> Department of Communication Studies, Faculty of Social Sciences, University of Antwerp,

Belgium; <sup>b</sup> Tilburg center for Cognition and Communication, Tilburg School of Humanities

and Digital Sciences, The Netherlands.

Corresponding author: Sara Erreygers, Department of Communication Studies, University of Antwerp, Sint-Jacobstraat 2, 2000 Antwerpen, Belgium. E-mail: sara.erreygers@uantwerpen.be. Phone: +32 3 265 50 36.

All authors have agreed to the submission and the article is not currently being considered for publication by any other print or electronic journal.

#### Abstract

Reports of a handful of tragic cyberbullying cases, where assumed victims have committed suicide, have revealed that purported cyberbullying attacks are sometimes actually created by the victim him- or herself (using a fake name or posting anonymously). This phenomenon has been named *self-cyberbullying*, *fictitious cyberbullying*, *digital self-harm*, or *digital Munchausen*. To date, only a few studies have examined this phenomenon to a limited extent. Via a qualitative and quantitative survey, this study further explored forms, motives, contents, means, platforms, and pretended identities of fictitious online victimization in adolescents. Additionally, in order to support future research on this topic, first steps were taken to develop and validate an index to assess fictitious online victimization. Positive correlations were found with traditional and cyberbullying and self-harm, and negative correlations with self-esteem, subjective well-being, and life satisfaction. These results add to our understanding of the phenomenon and may lay the groundwork for future studies.

Keywords: self-cyberbullying, fictitious cyberbullying, digital self-harm, digital Munchausen, fictitious online victimization

3

Fictitious Online Victimization: Exploration and Creation of a Measurement Instrument

Research on online harm experienced during adolescence has mostly paid attention to online aggressive behavior. More in particular, research has concentrated on a specific form of online aggression, namely cyberbullying. Cyberbullying has been defined as "an aggressive, intentional act carried out by a group or individual, using electronic forms of contact, repeatedly and over time against a victim who cannot easily defend him or herself" (Smith et al., 2008: 376). It can entail acts such as: insulting or threatening someone, sending unwanted pictures, outing intimate information about a person, creating a fake account to pretend to be or to mislead the victim, and spreading false rumors (Vandebosch and Van Cleemput, 2009). Research shows that cyberbullying is mostly committed by or aimed at peers (Smith et al., 2008), is often performed anonymously (Whittaker and Kowalski, 2015), and may have a serious impact (Ortega et al., 2005). However, investigations related to a handful of tragic cases, where assumed victims of cyberbullying committed suicide, revealed that (at least part) of the purported attacks were actually created by the victim using a fake name or posting anonymously (Brantley, 2017; Davies, 2014). This phenomenon has been described as self-cyberbullying, fictitious cyberbullying, digital self-harm, or digital Munchausen. Preliminary evidence suggests that especially adolescents might engage in this type of behavior and that it correlates with other problematic behaviors, and poor mental health (Englander, 2012; Pacheco, Melhuish and Fiske, 2019; Patchin and Hinduja, 2017). In this article we aim to further explore this phenomenon by assessing forms, motives, contents of victimization messages, the means undertaken to perform this behavior, and the platforms and pretended identities that are used. Second, in order to support future research on this topic, we aim to take first steps in the development and validation of an index for the prevalence of this phenomenon, which we propose to name fictitious online victimization (FOV).

# **Literature Review**

# **Labelling and Definition**

Researcher dana boyd (2010) was the first to write a post on her blog about incidents on the online platform Formspring that she labeled as digital self-harm: "there are teens out there who are self-harassing by "anonymously" writing mean questions to themselves and then publicly answering them." (para. 3). Englander (2012) later referred to this phenomenon, using the same term, but also labelling it as self-cyberbullying and digital Munchausen, using the latter term because of its resemblance to the psychiatric disorder known as Munchausen's Syndrome. Characteristic for this syndrome is that the patient inflicts self-harm in a quest for sympathy, attention, and admiration for their ability to cope with their (so-called) "victimization". Patchin and Hinduja (2017: 2) opted for the term digital self-harm, which they defined as "the anonymous online posting, sending, or otherwise sharing of hurtful content about oneself." They added that this conceptualization encompassed self-harm that occurred through "SMS, email, social media, gaming consoles, web forums, virtual environments, and any other online platform yet to be conceived." Bjornsen (2018: 239) described "self-cyberbullying or fictitious cyberbullying" as a "disturbing online phenomenon that crosses the boundary between catfishing and cyberbullying." Finally, Pacheco, Melhuish and Fiske (2019: 1) used the term digital self-harm to refer to "the anonymous online posting or sharing of mean or negative online content about oneself."

As this overview shows, the use of different labels to describe the same phenomenon, seems to reflect scholars' attempts to compare it with existing, yet different, phenomena: cyberbullying, self-harm and Munchausen syndrome. By referring to the phenomenon as self-cyberbullying, authors seem to emphasize that those who engage in this behavior pretend to be cyberbullied by someone else (while actually doing this themselves, hence the prefix "self"), by committing negative acts (such as writing mean questions or negative comments)

via online channels, that resemble common forms of cyberbullying. By using the term self-harm, scholars implicitly position this online phenomenon against an offline phenomenon that involves people (intentionally) harming themselves physically (e.g., by cutting or burning themselves). The online variant then refers to verbal or non-verbal online behavior that rather appears to aim at causing psychological harm. By drawing parallels with Munchausen syndrome (and *factitious disorder* or *catfishing*), the misleading character of the behavior is put central: People are "pretending" to be victimized online, and the possibility to act anonymously or to use a pseudonym online is helpful to this end.

From here on, we prefer to refer to this behavior as *fictitious online victimization* (FOV). This term integrates some of the elements that have been put forward as typical for this behavior (e.g., its misleading character and its link with online aggression or harm) and are only partly covered by each of the previously used labels. Moreover, these different labels might also evoke expectations that are not described as typical or necessary for the phenomenon under study, or might actually (also) be used to refer to very different phenomena.

The term *self-cyberbullying*, for instance, seems partly adequate to describe the phenomenon under study, because its concrete manifestations (e.g., insults, threats, ridicule ...) indeed closely resemble the acts of *real* cyberbullying behaviors (originating from powerful others, who have the intent to (repetitively) hurt the victim). However, using the pre-fix *self* in combination with *cyberbullying* also has disadvantages as it is - sensu stricto impossible to bully oneself, because the perpetrator and the victim are actually one and the same. The element of power imbalance is therefore only a *pretended* power imbalance. Similarly, the intent to hurt is something that is faked to actually achieve other goals (e.g., gaining attention from others). Finally, using the term *cyberbullying* implies repetitiveness, while someone might pretend to be aggressed by someone else only once.

The terms *digital self-harm* and *digital Munchausen*, on the other hand, seem to relate the behavior under study with offline behaviors that are quite different: e.g., digital self-harm (e.g.; insulting oneself) with (physical) self-harm (e.g., cutting or burning oneself) and digital Munchausen (pretending to be the victim of online aggression) with Munchausen (pretending to be ill or making oneself sick). Moreover, both terms sometimes incite associations with other types of online behavior, such as posting pictures or tips about physical self-harm (Pater and Mynatt, 2017) or pretending to be sick online (e.g., telling others on online for a that one is a cancer patient, while this is not the case).

# **Operationalization and Prevalence**

The number of empirical studies on FOV is still very limited and very few have been published and peer-reviewed. In the study that Englander (2012, non-peer reviewed) conducted in 2011-2012 amongst 617 (18-19-year-old) freshman university students in the U.S., she asked the participants whether they had falsely posted a cruel remark against themselves, or cyberbullied themselves, during high school. She found that 8% of the female and 13% of the male students had engaged in (at least one of) these behaviors in high school. Between August and October 2016, Patchin and Hinduja (2017) conducted an online survey amongst a nationally representative sample of 5,593 English-speaking 12- to 17-year-old students in the U.S. They measured the involvement in digital self-harm via two items: (1) "In my lifetime. I have anonymously posted something online about myself that was mean," and (2) "In my lifetime, I have anonymously cyberbullied myself online." Respectively 6.2% and 5.3% of the respondents reported to have engaged in these behaviors, with respectively 51.3% and 44.4% saying they only did this once. In line with the findings of Englander (2012), boys were slightly more likely to participate in these two behaviors than girls (7.1 and 6.3% of the boys, and 5.3 and 4.2% of the girls). In the online survey conducted by Pacheco, Melhuish and Fiske (2019, non-peer reviewed) in New-Zealand between 20 July and 30 September

2018, amongst 1,110 participants aged 13-17, respondents were asked "whether they have anonymously posted or shared online mean or harmful content about themselves in the past year." Six percent of the respondents indicated they had engaged in this behavior, with 65% of them having done it more than once. There was no significant gender difference.

This overview shows that the existing studies often aim to measure FOV using only one or two items (including an item that refers to the act of self-cyberbullying) and stressing the hidden or misleading character of the behavior by referring to its anonymous or false character. The reference period varies significantly, from *in the past year*, over *during high school*, to *in my lifetime*. The prevalence rates suggest that FOV is not uncommon amongst adolescents (with some studies suggesting a slightly higher involvement of boys than girls in this behavior) and might include one-time-acts as well as repetitive behaviors.

#### **Motives**

Drawing from literature on motives for self-harm, boyd (2010) hypothesized that adolescents might engage in this behavior because (a) they wanted others to notice them and pay attention to them, support them and validate them (i.e. "a cry for help"), (b) they wanted to look cool (as only the cool would attract many negative comments, because of hate or jealousy), or (c) they were trying to trigger positive support, compliments, and other loving messages from their friends in response to their (presumed) victimization.

Englander's study (2012) revealed that the main reason was "to gain the attention of a peer." They were least likely to do this "as a joke." Girls more often wanted to prove they could take it, to encourage others to worry about them and to get adult attention; whereas boys were more likely to say they did this because they were mad, as a way to start a fight.

Patchin and Hinduja (2017) queried the motives of digital self-harmers with an open question, which revealed that "self-hate" was most common, followed by "to be funny", "looking for reaction", "depressive feelings" (i.e., having negative feelings, and wanting to

express how one really feels about oneself) and "attention seeking". As stated by Patchin and Hinduja (2017) a common theme in the motives was the reference to others (mentioned in 73 of the 160 answers), suggesting that self-harmers were expecting, or in need for, a response.

Finally, the study in New-Zealand (Pacheco, Melhuish and Fiske, 2019), in which motives were assessed via a closed question, revealed the following responses: "It was a joke" (33%), "I wanted to show others I could take it" (24%), "I was looking for sympathy from friends" (23%), "I wanted to see if someone was really my friend" (22%), "I don't know why I did it" (18%), "I was looking for attention" (12%), "I was looking for help" (8%), "Another reason" (5%). Boys more often indicated "it was a joke". Girls, on the other hand, more often reported that they anonymously posted mean content online to show others "I can take it", to look for their friends' sympathy, and to seek reassurance of friendship.

As this overview shows, engagement in FOV thus often seems to be motivated by attempts to gain attention, support, and validation from others. In addition, the online expression of negative feelings towards oneself might not only be an "instrument" to attract positive feedback or admiration from others, but also a genuine display of self-hate, or a way to "entertain" others or to start a fight. While young people thus seem to engage in the behavior to attain certain goals, the success in achieving the desired outcomes is rather limited: According to the study of Englander (2012) 48% of the boys and 16% of the girls indicated they achieved their goals.

#### **Correlates**

The existing studies also reveal associations between engagement in FOV and various background characteristics, (problematic) behaviors, and mental health issues. Englander (2012), for instance, reported that digital self-harmers were more likely to have had three or more psychiatric issues during high school and to report being frequent users of drugs and alcohol. Patchin and Hinduja (2017) found statistically significant positive correlations with

non-heterosexual orientation, experience with school bullying and cyberbullying as a victim, drug use, participation in various forms of adolescent deviance, and depressive symptoms. In a study of Fischer and Hamilton (2017), cited by Bjornsen (2018), in which university students' tendencies to use alternative identities on social media were examined, 2.2% reported using the secret identity to post harmful statements to or about their real identity, and the majority of those also used the false identity for self-flattery or self-promotion. Similarly, 2.3% said they used their secret identity to cyberbully someone else so that their real online self could come to the victim's defense. Exploratory analyses of the traits of the fictitious cyberbullies indicated they had lower self-esteem and were more likely to endorse items describing traits of borderline personality disorder.

# **This Study**

As is clear from the literature overview, research on FOV is still limited. It often departs from a basic (single-item) measurement of the behavior and (thus) also provides little to no details about the concrete forms it can take (e.g., insults versus threats), the subject it relates to (e.g., one's appearance or personality), the way it is performed (e.g., what type of deception or impersonation), and the platforms that are used for it. More research on this topic is important, because the preliminary findings suggest that FOV is not uncommon, possibly serves several individual goals, and might be indicative of other problematic behaviors and poor mental health.

The first goal of our study is therefore to further explore the behavior that has previously been labeled as digital self-harm, self-cyberbullying, fictitious cyberbullying and digital Munchausen, by examining the nature and prevalence of several features (i.e., forms, motives, contents, means, platforms, and identities). A second goal is to make a beginning in the development and validation of a measurement instrument, as to promote further research on this topic.

To meet the aforementioned goals, we followed a two-step methodological approach. We first conducted a retrospective survey with open questions amongst emerging adults. The qualitative data from this preliminary study were used to create adequate closed questions and response options for a standardized questionnaire on FOV. This questionnaire was subsequently used in a survey amongst adolescents. The data from this quantitative study provide insight into the prevalence of several FOV features and permit a preliminary validation of the FOV measurement instrument.

# Method

# **Preliminary Study**

Participants (N = 504, 64.88% female) were recruited via MTurk (N = 284) and via electronic learning platforms and mailing lists of four higher education institutions in [BLINDED] (N = 220), from March till June 2018, in order to collect a sample of emerging adults with different types of occupations. The institutions were selected based on personal contacts of the researchers within these schools. Participants were 18 to 25 years old (M = 22.04; SD = 1.77). Four out of ten (40.67%) had the [NATIONALTY RESEARCHERS] nationality, 34.92% was American, 8.53% Indian, 3.18% Dutch and 12.70% indicated to have another nationality.

The questionnaire consisted of yes/no questions and open questions regarding FOV, starting with a short description of the behaviors under study: "The online environment offers the possibility to post or send messages (text, photo, video) anonymously, using an alibi, or using someone else's name. Sometimes people send or post negative things to or about themselves. For instance, John presents himself as "@unicorn" online and then posts a negative comment about John." Then participants were asked whether they had ever pretended to be laughed at, hurt, offended, threatened, ignored, stalked, or ridiculed by someone else online, while they were doing this themselves. Those who answered "yes" were

asked what they did exactly, why and when they did this, for whom it was visible, and how others reacted. Respondents were also asked whether they knew if someone else had ever engaged in this kind of behavior and, in case they did, what that person did exactly. 7.2% of the respondents had victimized themselves online in the past, while 14.4% knew of others engaging in this behavior, resulting in descriptions of 83 FOV cases. The answers on the open questions were thematically analyzed in order to generate adequate (closed) questions and response options for the standardized questionnaire. First, two authors independently coded the answers. Then the coding schemes were compared, combined, and refined, resulting in one code for each answer. All codes were then listed and compared. We aimed for the most diverging as possible range of FOV behaviors and motives, therefore also low-frequency codes were retained, and highly similar codes were merged.

# **Definitive Study**

Participants. The quantitative study focused on middle and late adolescents, as the literature indicates that this is a fundamental period for the development of risk behavior (Arnett, 1992), including digital self-harm (Patchin and Hinduja, 2017), cyberbullying (Kowalski, Giumetti, Schroeder et al., 2014), and self-harm (Ross and Heath, 2002). In addition, several of the respondents in the preliminary study indicated they had (mostly) victimized themselves online "as a teenager" and the average reported age of FOV was between 16 and 18.

Participants were recruited via a convenience sample of schools from one province in [BLINDED]. Seven out of 21 contacted schools agreed to participate. Active informed consent was obtained from the school head and from the respondents, and passive informed consent from the parent(s). The school head decided which classes (within the age range) were eligible to participate (taking into account practical issues such as timetables and exams). Each participant had to actively consent to the processing of their anonymous data. Ten students

refused (two paper-pencil, eight online) and therefore did not take part in the study. This study followed APA Ethical Guidelines for research with human subjects and received approval from the Ethics Committee for the Social Sciences and Humanities of [BLINDED]. No compensations were given for participation.

The data collection took place between November 2018 and February 2019. Of the 942 adolescents who completed the questionnaire, 112 respondents with suspicious answer patterns or non-serious answers on the open questions and 17 respondents with missing values on the socio-demographic characteristics were deleted. Twelve respondents older than 20 were also omitted from the sample, as the focus of the present study was on middle and late adolescents. As such, the analytical sample consisted of 801 respondents (52.2% girls), with ages ranging from 14 to 20 years (M = 14.85, SD = 1.18). The majority of the participants (71.5%) were enrolled in general education, 5.9% were in technical education, and 22.6% in vocational education. Most participants (66.5%) indicated that the mother of their mother was born in [COUNTRY OF ADMINISTRATION].

**Procedure.** Administration of the paper-and-pencil questionnaire took place in school during school hours. The principal of one school preferred an online version of the questionnaire that was completed by the students at home. Respondents were guaranteed verbally and in writing that their responses were confidential.

# Measures.

FOV involvement. First, a general description of FOV was provided: "Sometimes people act as if someone laughs at / hurts / offends / threatens / ignores / stalks / ridicules / bullies them online, while they are actually doing this to themselves." Then, participants were asked whether they had ever done this themselves (one-item FOV measure). Most participants (86.5%) answered No, never, 7.4% reported Yes, once, 4.4% Yes, a few times, 1.2% Yes, many times, and 0.5% Yes, very often.

FOV index. Next, we provided the respondents with an extensive list of specific FOV behaviors, derived from our preliminary study. These specific FOV behavior items (see Table 1) were preceded by the question "Have you ever done any of the following things to yourself online, while pretending to be someone else?" A 5-point Likert scale ranging from No, never to Yes, very often was offered as answer format. A text box was also provided so that participants could add any other form of FOV, if applicable.

We propose that these items constitute a FOV *index*, rather than a scale (Diamantopoulos and Winklhofer, 2001), because in our view FOV is inferred if a person demonstrates specific behavior, rather than that an underlying FOV inclination *gives rise to* certain observable acts. It follows that the items constituting the index are formative (rather than reflective) indicators (Bollen and Lennox, 1991). As the items of the index are not expected to correlate (i.e., it is perfectly possible that a person would cyberbully him- or herself only in one particular way), participants' scores on the items (with answers recoded 0 for *No, never* to 4 for *Yes, very often*) were summed. The mean index score in this sample was 0.41 (range: 0 - 9; SD = 1.25), with 15.1% of participants (41 missings excluded) reporting to have engaged in some form of FOV at least once.

Contents, motives, means, identities, and platforms of FOV. If participants reported to have engaged in (any form of) FOV, they were asked about the contents, motives, means, identities, and platforms. More precisely, respondents indicated how often, on a 5-point Likert scale ranging from No, never to Yes, very often, their FOV messages contained the listed content (see Table 2). A text box allowed the participant to add other contents. Subsequently, participants were asked why they had done this by indicating their agreement with the motives (see Table 3) on a 7-point Likert scale ranging from Totally disagree to Totally agree, or by adding an alternative reason in a text box. After the motives, respondents were asked to indicate (yes/no) the way(s) they disguised their identity (means), the identity they

used to present themselves, and, finally, the platforms they used for FOV (see Table 4).

Multiple answers were possible for these questions. Again, open text boxes were provided to add additional means, identities, and platforms.

Convergent and discriminant validity measurements. Preliminary research findings on FOV suggest associations of FOV with self-harm (Patchin and Hinduja, 2017), victimization of traditional and cyberbullying (Patchin and Hinduja, 2017), hidden online self-promotion (Fischer and Hamilton, 2017), low self-esteem (Fischer and Hamilton, 2017), and psychiatric issues during high school (Englander, 2012). Therefore, as a preliminary validation of the index, we assessed the convergent validity of the FOV index via bullying involvement and self-harm; and the discriminant validity via self-promotion, self-esteem, subjective well-being, and overall life satisfaction.

Furthermore, preliminary findings and hypotheses on the motives of individuals engaging in FOV suggest that they often do this to gain attention of peers, to elicit compliments, and because they are looking for sympathy from friends (boyd, 2010; Englander, 2012; Pacheco, Melhuish and Fiske, 2019), which seems to indicate that narcissism and need to belong play a role in triggering this behavior. Therefore, we also measured narcissism and need to belong to explore whether these constructs might be associated with FOV.

The measurements were translated from English to Dutch by one of the authors and back-translated to English by another author. Next, the two English versions were compared during a research group meeting with other native Dutch speakers highly experienced in English scientific writing. Discrepancies between the two English versions were discussed and this resulted in small adjustments to the Dutch version.

The mean score for each construct, as well as the reliability score for multiple item constructs are presented in Table 5.

(Cyber)bullying involvement. In accordance with previous research (e.g., Pabian and Vandebosch, 2015), first a definition (Olweus, 1993) and some examples of bullying were provided. Next, one-item questions were used to assess participants' traditional and cyber bullying victimization and perpetration. For example, traditional bullying victimization was measured via "Have you ever been bullied in the real world (offline)?" For each of the four questions, respondents indicated whether they had ever been involved on a 5-point scale with response options ranging from 1 (no, never) to 5 (yes, very often).

Self-harm. Self-harm or non-suicidal self-injury was measured with a single item (Muehlenkamp, Claes, Havertape et al., 2012): "Have you ever intentionally hurt yourself, for example, cut yourself, burned yourself, or scratched yourself, without the intention to kill yourself?" Five answer options were provided, ranging from 1 (no, never) to 5 (yes, very often).

Narcissism. Narcissism was measured with the Dutch version of the ten-item Childhood Narcissism Scale of Thomaes and colleagues (2008). Responses are scored using a 4-point scale ranging from 1 (not at all true) to 4 (completely true).

*Need to belong*. The need to belong was measured with the ten-item Need to Belong Scale (Leary, Kelly, Cottrell et al., 2012). Answer options ranged from 1 (*strongly disagree*) to 5 (*strongly agree*).

Self-promotion. The items to measure self-promotion were based on the self-promotion subscale of the impression management scale of Bolino and Turnley (1999). This scale is developed for adults and therefore the items were adapted. Self-promotion was measured with the following four items: "Have you ever talked proudly about your school results?", "Have you ever talked proudly about your appearance and your look?", "Have you ever made others aware of your talents and achievements?", "Have you ever made others

aware of how important and popular you are?" Five answer options were provided, ranging from 1 (*no*, *never*) to 5 (*yes*, *very often*).

Self-esteem. The ten-item self-esteem scale from Rosenberg (1965) was used to measure self-esteem. Four answer options were provided, ranging from 1 (totally disagree) to 4 (totally agree).

Subjective well-being. Adolescents' subjective well-being was measured with the Satisfaction with Life Scale (Diener, Emmons, Larsen et al., 1985). The scale consists of five statements with answer options ranging from 1 (*strongly disagree*) to 7 (*strongly agree*).

Overall life satisfaction. A single-item measurement was used to investigate adolescents' general life satisfaction, based on Przybylski and colleagues (2013). Respondents indicated their overall life satisfaction on a scale ranging from 0 (totally unsatisfied) to 10 (totally satisfied).

#### **Results**

#### **Features of FOV**

FOV behavior. When asked whether they had ever engaged in FOV via the direct, one-item measure, most participants (86.5%) answered *No, never*, 7.4% reported *Yes, once*, 4.4% *Yes, a few times*, 1.2% *Yes, many times*, and 0.5% *Yes, very often*. The relative frequencies of the participants' answers on the specific FOV items are displayed in Table 1. All acts are each reported infrequently, with only a small number of participants (less than 5% per behavior) reporting to have acted in this way at least once. Overall 15.1% of participants (41 missings excluded) reported to have engaged in some form of FOV at least once. "I pretended to be hacked" was reported as an additional form of FOV in the open-ended question.

Relative FOV Item Frequencies (Missings Excluded)

Table 1

Yes, Item No. Yes, Yes, a Yes. few never once many very times often times Have you ever done any of the following things towards yourself online, while pretending to be someone else? I asked myself mean / hateful / 1.9 0.6 0.5 0.1 96.8 humiliating questions 0 I bullied myself 98.6 0.8 0.3 0.4 I reacted in a mean / hateful way to my 0.1 96.8 2.2 0.8 0.1 own online content (posts, photos) I disliked my own messages 97.3 0.9 0.3 0 1.6 I lied about being bullied 96.9 2.3 0.4 0.1 0.3 I posted explicit photos of myself 98.6 0.8 0.5 0.1 0 I posted mean / hateful / offending 99.2 0.6 0 0.1 0 messages on my own wall (profile) I posted mean / hateful things about 99.6 0.4 0 0 0 myself I posted screenshots of (fake) mean 98.6 1.3 0.1 0 0 messages that were supposedly sent to me I pretended that others were posting 99.6 0.1 0 0 0.1 negative things about me on their page 0 0.3 I pretended to be arguing with someone 97.7 1.6 0.5 I pretended to be ignored by others 0.1 97.7 1.7 0.4 0.1 I pretended to be sexually assaulted 99.6 0.4 0 0 0 I pretended to be stalked 98.8 0.9 0 0 0.3 I pretended to be trolled 98.7 0.3 0.5 0.5 0 I sent mean / hateful / threatening 99.1 0.4 0.3 0.1 0.1 messages to myself I tagged myself in negative posts / 99.0 0.4 0 0 0.7 messages I pretended that others revealed / 99.7 0 0.3 0 0 disseminated personal / intimate information about me Other 99.2 0.3 0 0 0.5

**FOV motives.** Table 2 displays the descriptive statistics of the responses to the 18 items on FOV motives (answered by 85 participants). The most popular motives were "for fun" and "to see how others would react", followed by "because I felt it was true and others ought to know," "to stop others from bullying me because someone else was taking care of it," "to fish for compliments," and "to get to know others' real thoughts about me." The least

frequent motive was "to gain popularity". An additional motive, provided by a male participant, was "to take revenge". There appeared to be some gender differences, although these were all non-significant, perhaps related to the small subsample size.

Table 2

Descriptive Statistics of the FOV Motives

Motive	M	SD
For fun	1.93	1.81
To see how others would react	1.92	1.77
Because I felt it was true and others ought to know	1.69	1.51
To stop others from bullying me because someone else was taking care of it	1.66	1.54
To get to know others' real thoughts about me	1.61	1.32
To fish for compliments	1.61	1.44
To act like I didn't care	1.59	1.36
To prove I can upstand bullying	1.54	1.24
To feel powerful	1.53	1.22
To get others to care for me	1.46	1.19
To make someone defend me	1.44	0.94
To feel important	1.41	1.09
To get attention	1.39	1.00
To gain sympathy	1.31	0.89
To gain friends	1.30	0.95
To look cool	1.27	0.88
To defame and accuse someone	1.25	0.89
To gain popularity	1.19	0.58

Other FOV features: content, means, platform, and identity. Participants who had engaged in FOV were asked to indicate what they victimized themselves for. As the results in Table 3 indicate, participants' FOV was most often directed at their appearance, physical condition, and behavior. There were no significant differences between girls and boys, although boys seemed to target their own appearance and physical condition in particular more than girls.

Table 3

Descriptive Statistics of FOV Content

Content ("What was it about?")	M	SD
My appearance	1.47	0.88
My physical condition (the shape I'm in)	1.38	0.88
My behavior / habits	1.36	0.89
My personality	1.34	0.79
My whole person	1.32	0.87
My (academic) results / performance	1.27	0.78
My intelligence	1.24	0.75
My ethnicity	1.21	0.74
My romantic / sexual behavior	1.11	0.49
My sexual orientation	1.11	0.52
My religion	1.10	0.48
My political preference	1.07	0.33

We also asked participants who engaged in FOV to indicate how they victimized themselves (*means*), whom they pretended to be (*identity*), and which platform they used (*platform*; see Table 4). Most participants reported that they victimized themselves anonymously. Other reported means were the use of fake accounts or names and the use of real accounts of other people, places, organizations, or events. Participants who engaged in FOV most often pretended to be a stranger, followed by a friend. Instagram, Snapchat, and Facebook were the most popular platforms for FOV.

# Table 4

Other FOV feature frequencies

Feature	n
Means	
I did this anonymously	23
With a self-created fake account/page/profile/screen name	9
With the account/page/profile of someone I knew	9
I used a fake name/alibi	8
With the account of a non-existing organization/place/company/event	5
With the account of a real organization/place/company/event	5
I created multiple fake accounts	4
With the account/page/profile of someone I did not know in real life but who does	3
exist	_
Identity	
A stranger	21
A friend	12
My best friend	6
An enemy	5
A classmate	3
An acquaintance	3
My partner	3
Myself	3
A celebrity	3 2
My pet	2
Someone with a romantic interest in me	2
	_
Platform	
Instagram	18
Snapchat	16
Facebook	13
An app that allows posting anonymously	10
Instant messaging (e.g., Whatsapp Facebook Messenger)	9
Youtube	9
Fortnite	6
Text messaging	4
A website where you can ask questions (e.g., Ask.fm)	3
Reddit	2
Twitter	2
Pinterest	1
Quora	1
Sayat.me	1
Skype	1
Steam	1
TeamSpeak	1
Tumblr	1
Video chat	1

*Note.* n = 48. Respondents could check multiple answers per question.

# **Preliminary FOV Index Validation**

Index evaluation. The classic methods to evaluate scales are not appropriate to evaluate indexes (Diamantopoulos and Winklhofer, 2001). For example, the items constituting an index do not need to correlate with each other, therefore evaluating internal consistency with Cronbach's alpha is not appropriate. Additionally, because each formative indicator has a unique contribution to the construct, deleting items because of low inter-item-correlations alters the composition of the index and may have a negative influence on the content validity of the scale (Bollen and Lennox, 1991).

According to Diamantopoulos and Winklhofer (2001: 271) "four issues are critical to successful index construction: content specification, indicator specification, indicator collinearity, and external validity." With regards to content specification, we refer to our definition of FOV (cf., supra) as specification of the domain of the construct. Second, for indicator specification, the indicators should cover the whole range of possible FOV behavior. Online behavior evolves rapidly, following the pace of technological advancements. Because of that, we realize that it is impossible to create an instrument that assesses all possible, current acts of FOV. However, we tried to cover as many forms of FOV as possible through the exploratory qualitative study, and we allowed for additional forms of FOV behavior to be reported via open-ended questions in the quantitative study. Third, indicator collinearity was evaluated via inspection of the variance inflation factors, which reached a maximum of 2.33, which is far below the common threshold of 10. Finally, external validity was evaluated via computing the correlations of the FOV index with (cyber)bullying involvement, self-harm, narcissism, need to belong, self-promotion, self-esteem, subjective well-being, and overall life satisfaction, as discussed below.

**Validation.** The ranges, means, standard deviations, and reliabilities of the study constructs are displayed in Table 5.

Table 5

Descriptive Statistics

Mea	sure	Min	Max	M	SD	α
1	FOV index	0	9	0.41	1.251	-
2	FOV OIM	1	5	1.22	0.63	-
3	TB perpetration	1	5	1.42	0.73	-
4	TB victimization	1	5	1.98	1.15	-
5	CB perpetration	1	5	1.14	0.49	-
6	CB victimization	1	5	1.31	0.72	-
7	Self-harm	1	5	1.31	0.81	-
8	Self-promotion	1	5	2.12	0.74	.68
9	Self-esteem	1	4	2.92	0.57	.89
10	Narcissism	1	3.5	1.97	0.50	.81
11	Need to belong	1	5	3.33	0.64	.75
12	Subjective well-being	1	7	4.54	1.33	.83
13	Life satisfaction	0	10	7.36	1.76	-

*Note*. OIM = one item measure; TB = traditional bullying; CB = cyberbullying

Concurrent validity. As to date a validated instrument to measure FOV has not been developed yet, there was no benchmark measurement available to evaluate the concurrent validity of the FOV index. However, we did ask participants one straightforward, general question about FOV with high face validity: "Sometimes people act as if someone laughs at / hurts / offends / threatens / ignores / stalks / ridicules / bullies them online, while they are actually doing this to themselves. Have you ever done this?" Most participants (86.5%) answered *No, never*. This 86.5% is close to the 84.9% zero-scores on the FOV index, which can be interpreted as preliminary evidence for the concurrent validity of the FOV index. However, the correlation between the variables, measured by Spearman's rho because the variables are highly skewed, is only .292 (p < .001). To further investigate this finding, we first dichotomized both variables by recoding the *No, never* responses to 0 and all other responses to 1 for the one-item question, and all scores of 1 and above to 1 for the FOV index. Then we cross-tabulated these dichotomized variables. As displayed in Table 6, although the large majority of the participants either responded negatively or positively to both variables, 17.5% of the responses were inconsistent across the variables, with participants (7.8%)

admitting to have engaged in FOV when responding to the general question, but not when rating particular FOV behaviors, or vice versa (9.7%).

 Table 6

 Cross-Tabulation (Percent of Total Sample) of Dichotomized FOV Variables

		FOV index		Total
		0	1	
One item question	0	77.0	9.7	86.6
	1	7.8	5.6	13.4
	Total	84.8	15.2	100

Construct validity. Convergent and discriminant validity were evaluated by examining the relations between the FOV index on the one hand, and perpetration and victimization of cyberbullying and traditional bullying, self-harm, self-promotion, self-esteem, narcissism, need to belong, subjective well-being, and life satisfaction on the other hand. Because the FOV index is a highly skewed variable, non-parametric correlation coefficients (Spearman's rho) were computed (see Table 7). Missing data seemed to be missing at random (MAR) and pairwise deletion was used for missing values.

Non-Parametric Correlations (Spearman's Rho)

9 4 6 8 10 .107\*\* .151\*\* .102\*\* .219\*\* .104\*\* -0.030 -.083\* 1 FOV index .088\* -0.045 -.110\*\* -.081\* 2 TB perpetration .107\*\* .229\*\* .381\*\* 0.060 0.029 0.071 0.011 .147\*\* -0.070 -0.054 -.076\* 3 .151\*\* .229\*\* .125\*\* .421\*\* .280\*\* -.079\* -.258\*\* -0.064 0.069 -.239\*\* -.272\*\* victimization .277\*\* 0.049 CB perpetration .102\*\* .381\*\* .125\*\* .077\* -0.025 .101\*\* -0.030 -0.012 -0.065 4 CB .219\*\* 0.060 .421\*\* .277\*\* 5 victimization 6 Self-harm .104\*\* 0.029 .280\*\* 0.049 .288\*\* -0.011 -.411\*\* -.170\*\* 0.023 -.332\*\* -.387\*\* Self-promotion -.079\* .077\* -.077\* -0.011 .261\*\* .430\*\* 0.043 .194\*\* .151\*\* 0.071 0.011 -.258\*\* -0.025 -.230\*\* -.411\*\* .261\*\* .334\*\* -.230\*\* .571\*\* .618\*\* 8 Self-esteem -.083\*  $.088* \quad .147** \quad -0.064 \quad .101** \quad -0.069 \quad -.170** \quad .430** \quad .334**$ 0.061 .200\*\* .208\*\* Narcissism Need to belong -0.045 -0.070 0.069 -0.030 0.074 0.023 0.043 -.230\*\* 0.061 Subjective well- -.110\*\* -0.054 -.239\*\* -0.012 -.236\*\* -.332\*\* .194\*\* .571\*\* .200\*\* -.085\* Life satisfaction -.081\* -.076\* -.272\*\* -0.065 -.257\*\* -.387\*\* .151\*\* .618\*\* .208\*\* -.172\*\* .701\*\*

*Note*. TB = traditional bullying; CB = cyberbullying.

Table 7

Small but significant positive associations of FOV with traditional and cyberbullying, self-harm, and narcissism were found; in contrast to negative correlations with self-esteem, subjective well-being, and life satisfaction. FOV was most strongly associated with cyber

<sup>\*</sup> p < .05, \*\* p < .01

(and traditional) bullying victimization. The correlations between FOV and self-promotion and need to belong were not significant.

#### **Discussion**

The aim of this study was to gain more insight into the recent but relatively unknown phenomenon of fictitious online victimization (FOV). Our first goal was to explore the specific FOV acts, motives, and contents, and the means, platforms, and identities used for FOV. A second aim was to give a first start to the development of a measurement instrument to assess FOV.

First, our qualitative retrospective survey study generated rich data on how people victimize themselves online, what they victimize themselves about, the motives behind this behavior, and the means, platforms, and disguises (identities) they use. Next, a quantitative study based on these data was conducted to quantify these FOV features in a sample of adolescents. The results suggest that FOV appears in many different forms: Almost 20 specific FOV acts were identified. Although each specific act was reported relatively infrequently, about 15% of adolescents reported to ever have engaged in FOV. The prevalence rate of 15% found in this study is remarkably higher than the 6% reported in the studies of Patchin and Hinduja (2017) and Pacheco, Melhuish and Fiske (2019). One straightforward explanation for this is that we measured FOV differently: Patchin and Hinduja (2017) asked (1) whether participants, in their lifetime, had an onymously posted something online about themselves that was mean and (2) whether they, in their lifetime, had anonymously cyberbullied themselves online; and Pacheco and colleagues (2019) asked whether participants had anonymously posted or shared online mean or harmful content about themselves in the past year. In contrast, our survey used a broader definition of FOV: We asked whether participants had ever pretended to be laughed at, hurt, offended, threatened, ignored, stalked, or ridiculed by someone else online, while they were doing this themselves.

25

Our definition does not restrict FOV to anonymous acts, and indeed, our findings indicate that people also victimize themselves by adopting another identity. Our definition also opens up the possibility for forms of FOV besides posting or sharing mean or harmful content, consistent with the literature on different types of cyberbullying.

To gain more insight into why adolescents engage in FOV, we assessed the motives behind this behavior. The most popular motive appeared to be "for fun." The other motives indicate that FOV often serves an interpersonal purpose (e.g., "to see how others would react") or is an attempt to influence one's self-esteem or self-confidence (e.g., "to feel powerful"). Although we found similar motives as previous studies (Englander, 2012; Pacheco, Melhuish and Fiske, 2019), the fact that the most popular motive in our study was "for fun" is in contrast to findings from Englander (2012), who found that "as a joke" was the least popular reason. However, our findings are consistent with those of Pacheco and colleagues (2019), who found a similar range and ranking of motives. A disturbing motive that was not found in previous studies but did emerge here was "because I thought it was true and others ought to know." This points to self-punishment as a reason to victimize oneself online. The variability in the motives suggests different profiles among adolescents who victimize themselves online. Understanding the underlying motives and social dynamics is crucial for a deeper understanding of this behavior and for offering appropriate help and support to those engaging in this behavior. In addition to the motives examined here, future research could also examine more distant predisposing factors, such as depression or personality disorders.

Further, our data indicate that when adolescents victimize themselves online, they mostly target their own looks, behavior, and personality. They most often do this anonymously, and less frequently via the use of a fake account or the account of someone

else. They mostly pretend to be someone unknown or a friend, and the most popular platforms for FOV are Instagram, Snapchat, and Facebook.

Unfortunately, the subsample of participants who had engaged in FOV and responded to the subsequent questions on the motives, means, platforms, and identities was too small to carry out further analyses (e.g., factor or regression analysis) with these items. An interesting path for future research would be to examine the underlying dimensions of the motives to construct a scale of FOV motives.

To reach our second goal, i.e., to take first steps towards the development of a measurement instrument to assess FOV, a FOV index was constructed based on the data from our qualitative study. Results from the subsequent quantitative study indicated that the FOV prevalence as measured by the constructed index (15.1%) was similar to the prevalence measured by a one-item FOV question, providing preliminary support for the concurrent validity of the index. However, further analyses indicated that 17.5% of the participants responded inconsistently across these measures. A similar phenomenon has also been reported in the general cyberbullying literature: Reports of specific cyberbullying behaviors (i.e., indirect measures) are often inconsistent with responses to questions that ask about cyberbullying involvement directly (Vandebosch and Van Cleemput, 2009). It could be that respondents did not consider some of the behaviors we listed as FOV to actually be FOV.

The positive correlations of the FOV index with traditional and cyberbullying, and self-harm, and the negative correlations with self-esteem, subjective well-being, and life satisfaction provide tentative support for the convergent and discriminant validity of the FOV index. Although the correlations are in the expected direction, they are rather small. The skewedness, zero-inflation, and low variance of the FOV index might have contributed to these small correlations.

FOV could be seen as an online form of self-harm. Consistent with that idea and with previous findings of Patchin and Hinduja (2017), FOV is positively associated with (offline) self-harm. Self-harm, offline or online, could be a coping mechanism or an emotion regulation strategy for some adolescents who are confronted with stressors or difficult emotions. An important difference between offline self-harm and FOV is that self-harm is often something that happens in private, whereas the latter is (meant to be) publicly visible to a wide or selected audience.

FOV also correlates positively with traditional and cyber bullying perpetration and victimization. In other words, victims and perpetrators of offline and online bullying more often engage in FOV than those not involved in bullying. These findings are consistent with those reported by Patchin and Hinduja (2017) and with evidence for the co-occurrence of aggression and self-harm (O'Donnell, House and Waterman, 2015). It could be that there is a general vulnerability underlying all involvement in bullying, related to personality or contextual factors. Alternatively, victims and perpetrators of bullying may more easily victimize themselves because they know out of their own experience what bullies do and say and what effect it has on others. As such, they might try to recreate effects they have seen in others or experienced themselves, such as eliciting reactions from others, or they might victimize themselves as a form of self-punishment. Bullies might also try to change their social image and attempt to elicit sympathy from others, whereas victims might attack themselves in order to show others that they can stand up to bullying.

FOV also correlates positively with narcissism. Previous studies have shown that narcissism is related to online self-disclosure (Sanecka, 2017) and higher levels of social activity on social network sites (Buffardi and Campbell, 2008), and that narcissists engage in online behavior to draw attention to themselves (DeWall, Buffardi, Bonser et al., 2011). However, previous studies have mostly found that narcissists use online platforms for self-

promotion (Buffardi and Campbell, 2008) rather than self-harm, although it has been shown that facets of pathological narcissism are related to self-harm (Dawood, Schroder, Donnellan et.al, 2018). Future research could further investigate this relation between narcissism and online self-defeating behavior.

As expected, FOV correlates negatively with self-esteem, subjective well-being, and life satisfaction. Adolescents who feel bad about themselves or are unhappy might victimize themselves online as a sort of public self-punishment. As such, a negative vicious cycle might develop as being a victim may confirm and aggravate negative feelings and self-image. Alternatively, it could be that troubled adolescents victimize themselves online because they want to show they can react to it and feel important or powerful in doing so, or because they want to elicit supporting reactions from others.

Although a previous study (Fischer and Hamilton, 2017) reported that students who used a secret identity to bully themselves online also used that identity for self-promotion, the correlation of FOV with (offline) self-promotion was not significant in this study. Perhaps once individuals have a fake account for FOV, the step to online self-promotion with that same account is smaller than to offline self-promotion.

Although we expected that adolescents with a higher need to belong would be more inclined to victimize themselves online as a desperate attempt to gain sympathy from others, the correlation between FOV and need to belong was not significant either. Consistent with this finding, the motives "to gain popularity" and "to gain sympathy" were also two of the least frequently endorsed.

The present paper is not without limitations. Although the questionnaire was administered among a sample of more than 900 adolescents, this was a non-representative convenience sample, and only a small portion was involved in the behavior under study. As noted earlier, this limited our data analyses possibilities and, therefore, the results of the

present paper are descriptive in nature. More advanced data analyses techniques could not be applied. Because the FOV index is a variable with a high number (> 84%) of "no, never" answers (i.e., zeros), zero-inflated statistical models are most appropriate (Loeys, Moerkerke, De Smet et al. 2012). We tried negative binomial regression, zero-inflated poisson regression, and zero-inflated negative binomial regression, but these models were too complex for the data, resulting in suspicious, unreliable results with low fit indices for the models under study or instable relationships between variables.

#### **Conclusion**

This study aimed to gain more insight into the phenomenon of FOV, which has received scant research attention so far. The combination of a qualitative and a quantitative survey shed light on several features of FOV, including the different forms, the motives behind it, and the means, identities, and platforms used to victimize oneself online. These findings extend our knowledge of how adolescents victimize themselves online and which motives lie beneath their behavior. Secondly, the data were used to make a beginning in the development of an index to measure FOV among adolescents, which can help to further advance research on the prevalence and correlates of this phenomenon. Despite the exploratory nature of this study and the relatively small sample size, this study adds to our understanding of the phenomenon of FOV and may lay the groundwork for future studies on this topic.

#### **Funding**

The authors disclosed receipt of the following financial support for the research, authorship, and/or publication of this article: This work was supported by the Research Foundation Flanders under grant [FWO G.0335.14N].

#### References

- Arnett J (1992) Reckless behavior in adolescence: A developmental perspective.

  Developmental Review 12(4): 339-373.
- Bjornsen CA (2018) Social media use and emerging adulthood. In: Zupančič M and Puklek Levpušček M (eds) Prehod v odraslost: sodobni trendi in raziskave [Emerging adulthood: Current trends and research]. Ljubljana: Znanstvena založba Filozofske fakultete, pp. 223-261.
- Bolino MC and Turnley WH (1999) Measuring impression management in organizations: A scale development based on the Jones and Pittman taxonomy. Organizational Research Methods 2(2): 187-206.
- Bollen K and Lennox R (1991) Conventional wisdom on measurement: A structural equation perspective. Psychological Bulletin 110(2): 305–314.
- boyd d (2010) Digital self-harm and other acts of self-harassment. In: danah boyd | Apophenia making connections where none previously existed. Available at: www.zephoria.org/thoughts/archives/2010/12/07/digital-self-harm-and-other-acts-of-self-harassment.html (accessed 22 August, 2018).
- Brantley K (2017) Scores of teens are SELF-bullying online, report reveals and experts warn it could be driving up suicide rates. *Daily Mail, 1 November*, Available from: https://www.dailymail.co.uk/health/article-5039859/Huge-increase-teens-self-cyberbullying-report-warns.html#ixzz4zT7ZVHKC
- Buffardi LE & Campbell WK (2008) Narcissism and social networking web sites. Personality and Social Psychology Bulletin 34(10): 1303-1314.
- Davies C (2014) Hannah Smith wrote 'vile' posts to herself before suicide, say police. *The Guardian*, 6 May, Available from: https://www.theguardian.com/uknews/2014/may/06/hannah-smith-suicide-teenager-cyber-bullying-inquests

- Dawood S, Schroder HS, Donnellan MB and Pincus LA (2018) Pathological narcissism and nonsuicidal self-injury. Journal of Personality Disorders 32(1): 87-108.
- DeVellis RF (1991) Applied social research methods series, Vol. 26. Scale development: Theory and applications. Thousand Oaks, CA: SAGE Publications.
- DeWall CN, Buffardi LE, Bonser I and Campbell WK (2011) Narcissism and implicit attention seeking: Evidence from linguistic analyses of social networking and online presentation.

  Personality and Individual Differences 51(1): 57-62.
- Diener E, Emmons RA, Larsen RJ and Griffin S (1985) The Satisfaction with Life Scale. Journal of Personality Assessment 49: 71-75.
- Diamantopoulos A and Winklhofer HM (2001) Index construction with formative indicators:

  An alternative to scale development. Journal of Marketing Research 38(2): 269–277.
- Englander E (2012) Digital Self-Harm: Frequency, Type, Motivations, and Outcomes. Report

  Massachusetts Aggression Reduction Center (MARC) Research Reports. Report no. Paper

  5, June. Available at: https://vc.bridgew.edu/marc\_reports/5
- Fischer R and Hamilton JC (2017) My own worst enemy: Prevalence and correlates of factitious cyberbullying. In: 29th Annual Convention of the Association for Psychological Science, Boston, MA, 25 28 May 2017.
- Jones DN and Paulhus DL (2014) Introducing the short dark triad (SD3) a brief measure of dark personality traits. Assessment 21(1): 28-41.
- Kowalski R, Giumetti GW, Schroeder A and Lattanner M (2014) Bullying in the digital age: A critical review and meta-analysis of cyberbullying research among youth. Psychological Bulletin 140(4): 1073-1137.
- Leary MR, Kelly KM, Cottrell CA and Schreindorfer LS (2012) Individual differences in the need to belong: Mapping the nomological network. Unpublished manuscript, Duke

- University, USA. Available at: http://www.midss.org/content/need-belong-scale (accessed 20 September 2018).
- Loeys T, Moerkerke B, De Smet O and Buysse A (2012) The analysis of zero-inflated count data: Beyond zero-inflated Poisson regression. British Journal of Mathematical and Statistical Psychology 65: 163–180.
- Muehlenkamp JJ, Claes L, Havertape L and Plener P (2012) International prevalence of adolescent non-suicidal self-injury and deliberate self-harm. Child and Adolescent Psychiatry and Mental Health 6(10): 1-9.
- O'Donnell O, House A and Waterman M (2015) The co-occurrence of aggression and self-harm: systematic literature review. Journal of Affective Disorders 175: 325-350.
- Olweus D (1993) Bullying at school: What we know and what we can do. Malden, MA: Blackwell Publishers Ltd.
- Ortega R, Elipe P, Mora-Merchán JA, Genta ML, Brighi A, Guarini A, ... Tippett N (2012).

  The emotional impact of bullying and cyberbullying on victims: A European cross-national study. Aggressive Behavior, 38(5): 342–356.
- Pabian S and Vandebosch H (2016) An investigation of short-term longitudinal associations between social anxiety and victimization and perpetration of traditional bullying and cyberbullying. Journal of Youth and Adolescence 45(2): 328-339.
- Pacheco E, Melhuish N and, Fiske J (2019) Digital self-harm: Prevalence, motivations and outcomes for teens who cyberbully themselves. Wellington, New Zealand. Available at: SSRN: https://ssrn.com/abstract=3374725 or http://dx.doi.org/10.2139/ssrn.3374725 (Accessed 20 September 2018).
- Patchin, JW and Hinduja S (2017) Digital self-harm among adolescents. Journal of Adolescent Health 61(6): 761-766.

- Pater JA and Mynatt ED (2017) Defining digital self-harm. CSCW '17: Proceedings of the 2017

  ACM Conference on Computer Supported Cooperative Work and Social Computing: 15011513.
- Przybylski AK, Murayama K, DeHaan CR and Gladwell V (2013) Motivational, emotional, and behavioral correlates of fear of missing out. Computers in human behavior 29: 1841 1848.
- Rosenberg M (1965) Society and the adolescent self-image. Princeton, NJ: Princeton University Press.
- Ross S and Heath N (2002) A study of the frequency of self-mutilation in a community sample of adolescents. Journal of Youth and Adolescence 31(1): 57-77.
- Sanecka E (2017) The dark side of social media: Associations between the Dark Triad of personality, self-disclosure online and selfie-related behaviours. The Journal of Education, Culture, and Society (2): 71-88.
- Smith PK, Mahdavi J, Carvalho M, Fisher S, Russell S and Tippet N (2008) Cyberbullying: It's nature and impact in secondary school pupils. Journal of Child Psychology and Psychiatry 49(4): 376-385.
- Thomaes S, Stegge H, Bushman BJ, Olthof T and Denissen J (2008) Development and validation of the Childhood Narcissism Scale. Journal of Personality Assessment 90(4): 382-391.
- Vandebosch H and Van Cleemput K (2009) Cyberbullying among youngsters: Profiles of bullies and victims. New Media & Society 11(8): 1349-1371.
- Walrave M and Heirman W (2011) Cyberbullying: Predicting victimisation and perpetration.

  Children & Society 25: 59–72.
- Whittaker E and Kowalski RM (2015) Cyberbullying via social media. Journal of School Violence 14(1): 11-29.