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Online correlates of cyberhate involvement among young people from ten European countries: An application of the Routine Activity and Problem Behaviour Theory

Sebastian Wachs [a,b,*], Angela Mazzone [b], Tijana Milosevic [b], Michelle F. Wright [c,d], Catherine Blaya [e], Manuel Gámez-Guadix [f], James O'Higgins Norman [b]

[a] Department of Educational Studies, University of Potsdam, Germany
[b] National Anti-Bullying Research and Resource Centre, Dublin City University, Ireland
[c] Department of Psychology, Pennsylvania State University, USA
[d] Department of Psychology, DePaul University, United States
[e] Institut Supérieur Du Professorat et de L'Education, Université Côte D'Azur, France
[f] Department of Biological and Health Psychology, Autonomous University of Madrid, Spain

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ABSTRACT

Recent evidence shows that young people across Europe are encountering hateful content on the Internet. However, there is a lack of empirically tested theories and investigation of correlates that could help to understand young people's involvement in cyberhate. To fill this gap, the present study aims to test the Routine Activity Theory to explain cyberhate victimisation and the Problem Behaviour Theory to understand cyberhate perpetration. Participants were 5433 young people (M_{age} = 14.12, SD_{age} = 1.38; 49.8% boys from ten countries of the EU Kids Online IV survey). Self-report questionnaires were administered to assess cyberhate involvement, experiences of data misuse, frequency of contact with unknown people online, problematic aspects of sharenting, excessive Internet use, and sensation seeking. Results showed that being a victim of cyberhate was positively associated with target suitability (e.g., experiences of data misuse, and contact with unknown people), lack of capable guardianship (e.g., problematic facets of sharenting), and exposure to potential offenders (e.g., witnessing cyberhate, and excessive Internet use). Findings support the general usefulness of using Routine Activity Theory to explain cyberhate victimisation. Being a perpetrator of cyberhate was positively associated with several online problem behaviours (e.g., having contact with unknown people online, excessive Internet use, and sensation seeking), which supports the general assumption of the Problem Behaviour Theory. The findings of this research can be used to develop intervention and prevention programmes on a local, national, and international level.

1. Introduction

The Internet constitutes a useful tool for young people to stay connected with their peers (Areepattamannil & Khine, 2017), to facilitate social interactions, and, to encourage civic participation and digital literacy (Daoud et al., 2020). This opens up to several opportunities in terms of social communication and education that were unthinkable only three decades ago. Despite these benefits, online communications also pose a number of risks. The online environment can be conceived as a virtual playground where rules can be relatively blurry and where adult supervision is lacking or missing entirely (Baldry et al., 2019). This specific context might bring some benefits in terms of developing autonomy and separation from parents, which is an important developmental task for young people; however, it could also pose many challenges for young people, who might not be equipped to deal with some of the online risks they may encounter (Vandoninck et al., 2013). One such risk is cyberhate, which young people across Europe are frequently exposed to (Machackova et al., 2020). Recent research defines cyberhate as the intentional devaluation and advocacy of hostility or violence against social groups (individual or vicarious). On the basis of assigned or selected group characteristics (i.e., ethnicity, nationality, gender, sexual orientation, disability, religion) through the use of

* Corresponding author. Department of Educational Studies University of Potsdam, Germany.
E-mail address: wachs@uni-potsdam.de (S. Wachs).

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information and communication technologies (ICTs) (Blaya, 2019; Wachs & Wright, 2018). Cyberhate shares some common features with cyberbullying (i.e., aggressive and repeated behaviour carried out using electronic means by a group or an individual against a target who cannot easily defend him/herself; Smith et al., 2008), including the expression of negative acts by posts, text messages, images (e.g., memes, stickers) or videos (Krause et al., in press). However, as outlined above, a distinctive element of cyberhate is that it targets individuals on the basis of their background characteristics (e.g., ethnicity; gender; religious belief, etc.). This is not the case of cyberbullying, which is deliberate and directed against an individual person rather than being motivated by hate towards certain social groups (Wachs, Wright, & Vazsonyi, 2019).

While research on cyberhate has increased in the last five years, the understanding of potential correlates of cyberhate involvement among young people and the empirical testing of theoretical frameworks is still limited because previous research was based mainly on samples with young adults (Celik, 2019; Costello et al., 2017). Building on the Routine Activity Theory (Cohen & Felson, 1979) and Problem Behaviour Theory (Jessor & Jessor, 1977), the present study investigates a wide range of online related correlates of involvement in cyberhate as victim and perpetrator. The findings might help to develop evidence-based prevention programmes to protect young people from cyberhate and inform support systems on a local, national, and international level.

2. Understanding cyberhate victimisation

Routine Activity Theory (RAT; Cohen & Felson, 1979) was originally developed in the field of criminology to explain the risk factors that contribute to victimisation in an offline context. Despite the differences between offline and online environment interactions (Keipi et al., 2016), the RAT has been successfully applied to explain cyberhate victimisation (Costello et al., 2017; Hawdon et al., 2017, 2019; Wachs et al., 2021). According to the RAT, the possibility that a certain individual will be victimised can be determined by three core elements, namely target suitability, a lack of capable guardianship and exposure to potential offenders (Cohen & Felson, 1979). These elements will be explained in more detail in the following sections.

2.1. Target suitability

The first element of RAT focuses on actions that render individuals more vulnerable to (online) victimisation by increasing their target suitability (Cohen & Felson, 1979). In the present study, we operationalised target suitability by considering data misuse and contact with unknown people.

Data misuse and cyberhate victimisation. Data misuse acts (e.g., stealing a password to access someone else's information) can result in deliberate actions aiming to harm an individual (Stoilova et al., 2019). Data misuse may co-occur with other forms of online and offline victimisation (Hamby et al., 2018; Machimbarrena et al., 2018; Montiel et al., 2016). There is growing evidence that young people who tend to disclose their data online are more likely to become the target of cyberhate and other forms of cybervictimisation (Wachs et al., 2021; Álvarez-García et al., 2015). For example, motivated offenders could steal personal information of young people who actively use social media websites (Christofides et al., 2012) and use this information to threaten, call them names and make fun of them (Mesch, 2009). Similarly, ill-intentioned individuals may use young people's personal information to commit acts of cyberhate. However, there is no empirical support for the postulated association between data misuse and cyberhate victimisation.

Contact with unknown people and cyberhate victimisation. Although young people use the Internet primarily to interact with people who they know (e.g., friends, acquaintances, family members, romantic partners) (Subrahmanyam & Greenfield, 2008), they also interact with unknown people online. A recent multi-country study conducted in 19 European countries showed that being in contact with unknown people online is a common experience among young people (Smahel et al., 2020). Nonetheless, young people who are in contact with unknown people online (e.g., adding online people who were not met in person before; sharing private information with unknown people online, such as full name, address or phone number; discussing personal matters and befriending unknown people) might show a higher risk for cyberhate victimisation because their openness to unknown people can also be misused by potential cyberhate perpetrators (Craig et al., 2020). Cyberhate victims have also shown to have a higher likelihood to experience cyberbullying victimisation which might indicate a lack of positive peer relationships and might make them socially more vulnerable (Blaya et al., 2020; Wachs, Wright, & Vazsonyi, 2019). Indeed, some research found a positive association between contact with unknown people online and exposure to hate messages online (Harriman et al., 2020) and cyberbullying victimisation (Craig et al., 2020; Festl & Quandt, 2016). Thus, we hypothesised that:

Hypothesis 1: Target suitability (e.g., experiences of data misuse, contact with unknown people online) is positively related to the risk of being a victim of cyberhate.

2.2. Lack of capable guardianship

The second element of RAT postulates that individuals are more likely to be victimised if they lack capable guardianship which can be defined as the absence of a "human element which acts – whether intentionally or not – to deter the would-be offender from committing a crime against an available target" (Hollis et al., 2013, p. 76). It also includes the use of protective measures carried out by guardians that might reduce the risk of victimisation (Hollis et al., 2013) which is why capable guardianship has been often operationalised in studies with adolescents as parental online and offline behaviour (Li et al., 2020; Navarro & Jasinski, 2012). Hence, in the present research, we operationalised this element by considering problematic facets of sharenting.

Problematic facets of sharenting and cyberhate victimisation. Sharenting involves parents sharing sensitive and personal information about their children online (Kopecky et al., 2020). The phenomenon of parents sharing and blogging about their children has become a widespread form of user-generated content and consumption (Blum-Ross & Livingstone, 2017). Sharenting might have many positive elements, including sharing parenting advice and experiences, and improving parents' cooperation, especially in the case of parents whose children suffer from some form of learning or physical disability (Steinberg, 2017). Nonetheless, some forms of sharenting (e.g., excessive sharing of photos without a child's consent; creating online profiles of a child without their consent) could potentially expose young people to a risk of harm (Blum-Ross & Livingstone, 2017; Livingstone & Blum-Ross, 2020). For instance, there are several issues involving the sharing of photos depicting children at political demonstrations, as these could turn children into active participants to a political agenda, even when parents do not aim to politicise their children (Kopecky et al., 2020). In some instances, children's videos and photos might be used to disseminate political views and ideologies, as it could be the case of parents creating and sharing online contents that involve their children conveying extremist and xenophobic messages (Kopecky et al., 2020). Even when parents do not share extremist or hateful contents, one of the main problems with sharenting is the breach of children's privacy. In fact, young people themselves might disagree with their parents sharing their photos or other private contents online (Ouvrein & Verswijvel, 2019). This is especially true for young people who are more concerned about their online privacy, whereas those who disclose more personal information online tend also to approve of sharenting more (Ouvrein & Verswijvel, 2019). Beyond the privacy issues, sharenting might also involve the risk of being attacked by cyberhate perpetrators, as this practice could potentially expose children to the eye of potential haters. Hence, we hypothesised that:

Hypothesis 2: A lack of capable guardianship (e.g., problematic facets of sharenting) increases the probability of being a cyberhate victim.

2.3. Exposure to potential offenders

The final element of the RAT considers (online) routine activities that place individuals at risk of victimisation by exposing them to dangerous people, places, and situations (Cohen & Felson, 1979). In the present study, we investigated witnessing cyberhate, excessive Internet use, and sensation seeking as potential factors that could expose young people to potential offenders.

Witnessing cyberhate and cyberhate victimisation. Overall, the most common experience in terms of cyberhate involvement is witnessing hateful content online (Machackova et al., 2020; Wachs, Wright, & Vazsonyi, 2019). Initial research on cyberhate found that people who visit websites or virtual spaces containing mean or hateful material are more likely to be targeted by cyberhate (Costello et al., 2016). Furthermore, when witnessing cyberhate some young people engage in counter speech and give public support to the targeted person or social group (Gámez-Guadix et al., 2020; Wachs, Gámez-Guadix, et al., 2020). Such behaviours can put young people at risk of being targeted by cyberhate. A few studies showed a positive correlation between cyberhate witnessing and victimisation (Wachs et al., 2021; Wachs & Wright, 2018). This is also in line with longitudinal studies in the field of cyberbullying which showed that being a bystander predicts being a victim of cyberbullying (e.g., Holfeld & Mishna, 2018; Wright & Wachs, 2018).

Excessive Internet use and cyberhate victimisation. Some young people show problems in relation to the excessive use of the Internet, which has been referred to as an uncontrolled and dysfunctional use of the Internet (Smahel et al., 2020). Excessive use of the Internet is characterised by six elements: 1) Salience: The use of the Internet becomes the most salient activity; 2) Mood Modification: Using the Internet to improve one's own mood; 3) Tolerance: The need to increase the online activity over time to reach the desired effect (e.g., improvement of mood); 4) Withdrawal symptoms: Unpleasant feelings after terminating the online activities; 5) Conflict: Being in conflict with caregivers or having an inner conflict in relation to using the Internet. 6) Relapse: Trying to reduce the time spent on the Internet with no success (Griffiths, 2000). Using the Internet compulsively is associated with a number of undesirable correlates, including poor health-related quality of life (Machimbarrena et al., 2019) and decreased wellbeing (Stuart & Scott, 2021). On the opposite, adolescents who show low scores on excessive Internet use are more likely to have positive family and school relationships (Mikuška et al., 2020). At the same time, excessive Internet use could function as a compensatory strategy to deal with social isolation and lack of social support and bonding in the offline world (Stodt et al., 2016). Given the compulsive nature of excessive Internet use, young people might prioritise their social interactions in the online world as opposed to the offline world. This circumstance could increase their chances of being exposed to potential offenders and becoming a victim of cyberhate. Some research showed a positive correlation between time spent online and exposure to hate messages (Harriman et al., 2020), and excessive Internet use and cyberbullying victimisation (Gámez-Guadix et al., 2013; Jung et al., 2014; Machimbarrena et al., 2018; Wachs, Vazsonyi, et al., 2020). However, the association between excessive Internet use and cyberhate victimisation needs further investigation.

Sensation seeking and cyberhate victimisation. Sensation seeking has been defined as a biological trait characterised by a need for novel and complex experiences and sensations, and by a tendency to take physical and social risks (Zuckermann, 1990). Individuals who score high on sensation seeking are inclined to take risks and to engage in new activities and experiences; they are also disinhibited and susceptible to boredom (Zuckermann, 1990). Young people with high levels of sensation seeking tend to upload more provocative content on the Internet, resulting in more negative feedback from others (Koutamanis et al., 2015). They might also take part in heated discussions online, visit online forums and websites with hateful online material, and be more likely to confront others who disseminate hateful online material. Although no studies investigated the relationship between sensation seeking and cyberhate victimisation, there is evidence that sensation seeking exacerbates online risks such as cyberbullying victimisation (e.g., Görzig & Frumkin, 2013; Görzig & Machackova, 2015; Yu et al., 2020). Thus, we formulated the following hypothesis:

Hypothesis 3: Exposure to potential offenders (e.g., witnessing cyberhate, excessive Internet use, sensation seeking) is positively correlated with being a cyberhate victim.

3. Understanding cyberhate perpetration

The Problem Behaviour Theory (PBT) (Jessor & Jessor, 1977) postulates that the presence of one form of problem behaviour increases the likelihood of the occurrence of another. Problem behaviour is defined as behaviour that is against the societal and legal norms and that tends to elicit some form of social control (Jessor, 1987a, 1987b). According to the PBT, the propensity for problem behaviours manifest itself in a variety of interrelated deviant, norm-violating or health-compromising behaviours (Vazsonyi et al., 2008). While the PBT has been originally developed to explain addiction, it has also been adopted to understand the co-occurrence of different forms of online problem behaviours (Craig et al., 2020; Gámez-Guadix et al., 2016; Kircaburun et al., 2018; Wachs, Wright, Sittichai et al., 2019). In the present study, we use the PBT as a theoretical framework to investigate the relationship between various forms of problematic online behaviours, namely sensation seeking, contact with unknown people, excessive Internet use, and cyberhate perpetration.

Contact with unknown people and cyberhate perpetration. Contact with unknown people online could constitute a potential risk for young people, in terms of being exposed to extremist groups and hateful content (Hassan et al., 2018) and/or being involved in cyberhate episodes (Costello et al., 2016). Indeed, hate groups actively recruit young people online (Costello et al., 2018). On the other hand, having contact with unknown people online might be an indicator for willingness to engage in more risky online activities. Young people who are willing to contact unknown people online might also engage in norm violating online behaviour such as sharing, forwarding, or posting hateful online content. Cross-sectional findings indicated a positive correlation between contact with unknown people online and cyberbullying perpetration (Craig et al., 2020; Görzig & Ólafsson, 2013). Longitudinal evidence showed that contact with unknown people online predicted cyberbullying perpetration six months later (Gámez-Guadix et al., 2016). However, the association between contact with unknown people online and cyberhate perpetration has not been elucidated in previous studies.

Excessive Internet use and cyberhate perpetration. Excessive Internet use can be considered as an impulse control disorder (Young, 1998). Excessive Internet use is related to impaired self-control, greater irritability, social conflicts with peers and parents, higher levels of negative feelings, lower school achievement and social isolation (Casas et al., 2013; Kammerl et al., 2012; Wartberg et al., 2019; Yu & Shek, 2018). These intra- and interpersonal difficulties associated with excessive use of the Internet can also result in higher levels of aggressive behaviour (Casas et al., 2013). Regarding the relationship between excessive Internet use and cyberhate perpetration, initial research which assessed time spent online as one facet of excessive Internet use showed mixed findings. While one study revealed a positive relationship between the two constructs (Blaya & Audrin, 2019), another study did not show any significant associations (Celik, 2019) and yet another study revealed a negative association between time spent online and involvement in cyberhate (Costello & Hawdon, 2018). None of these studies measured excessive Internet use by considering distinct aspects

of the construct (e.g., salience, mood modification, conflict). Related cross-sectional research on cyberbullying perpetration, which considered excessive Internet use as a multifaceted construct, found a positive correlation between excessive Internet use and cyberbullying perpetration (Casas et al., 2013; Wachs et al., 2015). Longitudinal research also showed that excessive Internet use predicted cyberbullying perpetration six months later (Gámez-Guadix et al., 2016).

Sensation seeking and cyberhate perpetration. A positive association has been found between sensation seeking and posting uncivil comments on social media (e.g., involving stereotypes, accusations) (Koban et al., 2018). Engaging in heated social media discussions might serve the purpose of personal entertainment for young people with high levels of sensation seeking (Koban et al., 2018). Apart from these findings documenting a link between sensation seeking and online behaviours, there is no evidence for a relation between sensation seeking and involvement in cyberhate perpetration. However, based on previous studies, some of the features that are embedded within the construct of sensation seeking might be associated with the involvement in cyberhate perpetration. For instance, young people who are inclined to take risks in general may feel less vulnerable and are less likely to be distressed when they encounter hateful content online (Savimäki et al., 2020). In addition, the virtual environment facilitates disinhibition, which is also a sub-dimension of sensation seeking (Wachs & Wright, 2018). This is because some powerful factors that are typical of cyberspace, including anonymity, invisibility, lack of eye contact, easy escape, and neutralising of status, could facilitate disinhibition of the perpetrators and therefore could facilitate this form of abusive behaviour (Lapidot-Lefler & Barak, 2012). Indeed, recent work has demonstrated that sensation seeking is positively correlated with cyberbullying perpetration (Antoniadou et al., 2016; Görzig & Machackova, 2015; Graf et al., 2019). Based on the literature reviewed above, we formulated the following hypothesis that:

Hypothesis 4: Higher levels of online problem behaviour (e.g., contact with unknown people online, excessive Internet use, sensation seeking) is positively related with being a cyberhate perpetrator.

4. Methods

4.1. Participants

The present study used survey data from the EU Kids Online IV (EUKO IV) project (Smahel et al., 2020). The sample consists of self-reports of 5433 young people (ages 12–16 years old; $M_{age} = 14.12$, $SD_{age} = 1.38$; 49.8% male) from ten European countries, namely Belgium (i.e., Flanders region), the Czech Republic, Finland, France, Italy, Lithuania, Norway, Poland, Romania, and Slovakia. Table 1 gives a summary of participants' age and sex by country.

4.2. Measures

4.2.1. Dependent variables

Cyberhate Involvement. Two items were used to measure cyberhate victimisation and perpetration. For victimisation, participants were asked "In the past 12 months, have you ever received hateful or degrading messages or comments online, against you or your community? (This could for example be Muslims, Migrants, Jews, Roma, etc.)?" and for cyberhate perpetration participants were asked the following question: "In the past 12 months, have you ever sent hateful or degrading messages or comments online, against someone or a group of people? (This could for example be Muslims, Migrants, Jews, Roma, etc.)?" Both items used no (0) or yes (1) responses.

4.2.2. Independent variables

Data misuse. Experiences of data misuse were assessed by a scale developed by the EUKO team consisting of seven items (e.g., In the past year, somebody used my personal information in a way I didn't like"). All items used no (0) or yes (1) responses. Kuder-Richardson reliability and McDonald's Omega were respectively .65; and $\omega = 0.66$. Missing data were 1% ($n = 54$).

Contact with unknown people online. For the assessment of contact with unknown people online, a scale consisting of five items developed by Livingstone and Helsper (2007) was administered (e.g., "In the past year, how often have you done these things online? Added people to my friends or contacts I have never met face-to-face"). All items were rated on a scale of 1 (*never*) to 5 (*daily or almost daily*). Cronbach's alpha and McDonald's Omega were respectively $\alpha = .79$ and $\omega = 0.80$. Missing data were 0.8% ($n = 43$).

Sharenting. For the assessment of problematic facets of sharenting, a scale developed by the EUKO team consisting of four items was used (e.g., "I received negative or hurtful comments from someone because of something my parent/carer published online"). All items were rated on a scale of 1 (*never*) to 5 (*daily or almost daily*). Cronbach's alpha and McDonald's Omega were respectively $\alpha = .84$ and $\omega = 0.87$. Missing data were 1.3% ($n = 73$).

Witnessing cyberhate. Participants were asked the following item to measure witnessing cyberhate: "In the past 12 months, have you ever seen hateful or degrading messages or comments online, against people or certain groups of people? (This could for example be Muslims, Migrants, Jews, Roma, etc.)?" using no (0) or yes (1) responses. Missing data were 8% ($n = 436$).

Excessive Internet use. For measuring excessive Internet use, a scale developed by Smahel and Blinka (2012) consisting of seven items was applied (e.g., "I have felt bothered when I cannot be on the internet"). All items were rated on a scale of 0 (*never*) to 4 (*daily or almost daily*). Cronbach's alpha and McDonald's Omega were respectively $\alpha = .87$; and $\omega = 87$. Missing data were 0.9% ($n = 50$).

Sensation seeking. A scale consisting of two items developed by Slater (2003) were used to measure sensation seeking (e.g., "How true are these things of you? I do dangerous things for fun"). Both items were

Table 1
Demographics and frequency rates of cyberhate by country.

Country	N	Age M (SD)	Sex (percentage of males)	Cyberhate victim	Cyberhate perpetrator
Belgium	467	14.55 (1.19)	45%	12.6%	2.6%
Czech Republic	1114	14.01 (1.40)	52.7%	5.5%	3.4%
Finland	447	14.51 (1.15)	44.8%	5.7%	1.4%
France	532	13.98 (1.41)	51%	2.8%	1.3%
Italy	572	13.97 (1.39)	49.8%	1.2%	0.7%
Lithuania	420	14.46 (1.13)	51.6%	2.4%	1.4%
Norway	476	14.01 (1.39)	47.2%	4.7%	2.6%
Poland	440	13.90 (1.51)	52.3%	8%	4.5%
Romania	451	13.96 (1.48)	51.7%	8.5%	2.2%
Slovakia	515	14.13 (1.42)	48.4%	4.7%	0.8%
Total	5433	14.12 (1.38)	49.8%	5.5%	2.2%

rated on a scale of 1 (*not true*) to 4 (*very true*). The Spearman-Brown coefficient was 0.85. Missing data were 1.6% (n = 89). All measures used in the present study can be found in the EU Kids Online Technical Report (Zlamal et al., 2020).

4.3. Procedure

Table 2 summarises information on the data collection method (Zlamal et al., 2020). The data in the ten countries were collected between October 2017 and April 2019. In five countries the data were collected in schools; in four countries, data were collected in the household and in one country via an online survey (see Table 2). When data were collected in the household, the child was in a room without the parents/guardians to reduce potential influence of the adults. In seven countries, computer-assisted self-interviewing and computer-assisted web interviewing was used and in three countries, computer-assisted personal interviewing (see Table 2). To exclude potential effects of the place of interview and method of interview, analyses were controlled for both variables.

Approval to conduct this research was obtained from the Institutional Review Boards of the universities and/or educational authorities of the associated researchers. Participants were told that their answers to all questions would be treated confidentially and that the data would be anonymised before publication. Participants were told that partaking in the study was optional, that some questions could be skipped if they did not want to provide an answer and that participation in the survey could be stopped at any time, without the need for giving a reason and without fear of negative consequences. Informed written consent from parents and children's assent were obtained. More details can be found in the EU Kids Online 2020: Technical Report (Zlamal et al., 2020).

4.4. Data analyses

Correlation analyses were conducted to investigate the bivariate associations between the independent variables, namely cyberhate victimisation, cyberhate perpetration, data misuse, contact with unknown people online, sharenting, witnessing cyberhate, excessive Internet use, and sensation seeking, and the dependent variable was cyberhate involvement.

Multicollinearity among predictors can reduce the probability to assess the individual importance of a predictor. Therefore, a correlation matrix was evaluated in order to examine multicollinearity (see Table 3). The results indicated that all variables were suitable for consideration as independent variables in one multinomial regression analysis since no high correlations (>0.70) were detected.

To investigate the multivariate associations between cyberhate involvement and the independent variables we used a multinomial logistic regression analysis while controlling participants' age, sex, and country of origin. For this multinomial regression analysis, the dichotomous cyberhate victimisation and perpetration variables were recoded into one multinomial variable with four distinct groups. Pure cyberhate victims answered on the cyberhate victimisation item "yes" and on the cyberhate perpetration "no", pure cyberhate perpetrators vice versa, and participants who were classified as not involved in cyberhate answered on both items with "no".

The data were nested within 10 clusters (countries), ranging from 420 to 1114 participants. For cyberhate victimisation, the variance at the country level was 0.002 resulting in ICC = 0.025. For cyberhate perpetration, the variance at the country level was 0.001 resulting in ICC = 0.021. These findings indicate that mono level modelling is adequate (Peugh, 2010). All analyses were conducted using IBM SPSS Statistics software version 27 for Mac.

Table 2
Data collection method by country.

Country	Place of Interview	Data collection	Method of Interview	Approval ethical body
Belgium	School	March 2018 to November 2018	CASI/CAWI	Yes
Czech Republic	School	October 2017 to February 2018	CASI/CAWI	Yes
Finland	School	January 2019 to April 2019	CASI/CAWI	Not required
France	Online survey	May 2018 to June 2018	CASI/CAWI	Yes
Italy	Household	November 2017 to December 2017	CAPI	Not required
Lithuania	Household	January 2018 to May 2018	CAPI	Yes
Norway	Household	June 2018 to October 2018	CASI/CAWI	Yes
Poland	School	May 2018 to June 2018	CASI/CAWI	Yes
Romania	School	April 2018 to April 2019	CASI/CAWI	Yes
Slovakia	Household	April 2018 to June 2018	CAPI	Not required

Note. CASI (Computer-Assisted Self-Interviewing), CAWI (Computer-Assisted Web Interviewing, CAPI (Computer-Assisted Personal Interviewing).

5. Results

Overall, 5.5% (n = 290) of participants were classified as pure victims, 2.2% (n = 117) as pure perpetrators, and 92.3% (n = 4895) as not involved. Table 1 gives a summary of involvement as cyberhate victim or perpetrator by country. All correlations were in the expected direction (see Table 3). Higher levels of cyberhate victimisation were positively correlated with higher levels of cyberhate perpetration, data misuse, contact with unknown people, sharenting, witnessing cyberhate, excessive Internet use, and sensation seeking. In addition, higher levels of cyberhate perpetration were positively correlated with higher levels of data misuse, contact with unknown people, sharenting, witnessing cyberhate, excessive Internet use, and sensation seeking. Higher levels of data misuse were correlated with contact with unknown people, sharenting, witnessing cyberhate, excessive Internet use, and sensation seeking. Higher levels of sharenting were positively correlated with higher levels of witnessing cyberhate, excessive Internet use, and sensation seeking. Higher levels of witnessing cyberhate were also positively correlated with excessive Internet use and sensation seeking and excessive Internet use was also positively correlated with sensation seeking.

The multinomial regression model (see Table 4) was significant, Log likelihood (null) = 2969.79; LR (full) = 2480.44; LR χ^2 = 489.34, df = 34, p < .001, Nagelkerke's R^2 = 0.210. After controlling for participants' age, sex, and country of origin, place and method of interview, the regression model showed several theoretically relevant independent variables which were significant.

In the first step, the findings were interpreted regarding the application of the Routine Activity Theory to explain cyberhate victimisation. *Target Suitability*: Young people who experienced data misuse were more likely to be a victim of cyberhate (OR = 6.12, $CI_{95\%}$ [2.88–12.97]). Young people who had contact with unknown people online showed higher odds of being a victim of cyberhate (OR = 1.24, $CI_{95\%}$ [1.01–1.53]). Sensation seeking did not increase young people's likelihood of being a victim by cyberhate actions. *Lack of capable guardianship*: Problematic aspects of sharenting increased the risk of being a cyberhate victim (OR = 1.58, $CI_{95\%}$ [1.20–2.09]). *Exposure to offenders*: Young people who witnessed cyberhate showed higher odds of being a victim of cyberhate (OR = 6.45, $CI_{95\%}$ [4.65–8.94]). Excessive Internet use increased the probability of being a victim of cyberhate (OR = 1.28, $CI_{95\%}$ [1.02–1.43]).

In the second step, we tested the core assumption of the Problem Behaviour Theory to understand cyberhate perpetration. We found that young people who reported that they had contact with unknown people

Table 3
Intercorrelations, means and standard deviations for the main variables.

Variable	1	2	3	4	5	6	7	8
1. Cyberhate victimisation	–							
2. Cyberhate perpetration	.36**	–						
3. Data misuse	.26**	.22**	–					
4. Contact with unknown people online	.17**	.17***	.28**	–				
5. Sharenting	.23**	.19**	.41**	.36**	–			
6. Witnessing cyberhate	.25**	.19**	.16**	.15**	.13**	–		
7. Excessive Internet use	.19**	.18**	.33**	.30**	.32**	.26**	–	
8. Sensation seeking	.16**	.20**	.26**	.28**	.24**	.21**	.28**	–
M (*SD*)	0.08 (0.26)	0.05 (0.20)	0.07 (0.15)	1.57 (0.66)	1.15 (0.41)	0.39 (0.48)	1.70 (0.73)	1.52 (0.73)

Note. **p < .01.

Table 4
Multinomial regression analysis predicting involvement in cyberhate as victim or perpetrator.

	Effect	B	SE	Wald	p	OR	CI 95%	
Victims [a] (n = 290; 5.5%)	Intercept	−8.46	1.96	18.54	<.001			
	Data misuse	1.81	0.384	22.27	<.001	6.12	2.88	12.97
	Contact with unknown people online	0.217	0.107	4.11	.043	1.24	1.01	1.53
	Sharenting	0.459	0.141	10.61	<.001	1.58	1.20	2.09
	Witnessing cyberhate	1.86	0.141	125.22	<.001	6.45	4.65	8.94
	Excessive Internet use	0.180	0.92	3.89	.040	1.28	1.02	1.43
	Sensation seeking	−0.036	0.09	0.144	.704	0.965	0.800	1.16
	Control Variables							
	Age	−0.067	0.051	1.70	.192	0.935	0.846	1.03
	Sex [b]	−0.077	0.141	0.300	.584	0.926	0.702	1.22
	Being Belgian [c]	−0.253	0.260	0.945	.331	0.776	0.466	1.29
	Being Finnish [c]	0.111	0.304	0.134	.714	1.18	0.616	2.03
	Being Italian [c]	1.58	0.427	13.81	<.001	4.86	2.12	11.31
	Being Norwegian [c]	0.665	0.315	4.44	.035	1.944	1.04	3.60
	Being Polish [c]	−0.087	0.291	0.089	.765	0.917	0.519	1.62
	Being Czech [c]	0.671	0253	7.01	.008	1.95	1.19	3.21
	Being Slovakian [c]	0.252	0.312	0.654	.419	1.28	0.698	2.37
	Being Lithuanian [c]	0.915	0.393	5.42	.020	2.49	1.16	5.39
	Being French [c]	0.738	0.351	4.42	.035	2.09	1.10	4.16
Perpetrators [a] (n = 117; 2.2%)	Intercept	−6.47	3.32	3.81	.051			
	Data misuse	0.760	0.612	1.54	.214	2.14	0.664	7.10
	Contact with unknown people online	0.382	0.149	6.58	.010	1.47	1.09	1.96
	Sharenting	0.185	0.217	0.723	.395	1.20	0.786	1.84
	Witnessing cyberhate	1.62	0.249	42.38	<.001	5.04	3.09	8.21
	Excessive Internet use	0.294	0.129	5.174	.023	1.34	1.04	1.73
	Sensation seeking	0.408	0.123	10.93	<.001	1.51	1.18	1.92
	Control Variables							
	Age	−0.160	0.076	4.42	.036	0.852	0.733	0.989
	Sex [b]	0.456	0.217	4.41	.036	1.58	1.03	2.42
	Being Belgian [c]	0.059	0.482	0.015	.902	1.06	0.412	2.73
	Being Finnish [c]	0.253	0.553	0.208	.648	1.29	0.435	3.81
	Being Italian [c]	0.942	0.644	2.14	.143	2.56	0.727	9.06
	Being Norwegian [c]	0.052	0.481	0.011	.915	1.05	0.410	2.70
	Being Polish [c]	−0.441	0.469	0.886	.347	0.642	0.257	1.61
	Being Czech [c]	−0.187	0.395	0.224	.636	0.829	0.382	1.80
	Being Slovakian [c]	0.860	0.670	1.65	.200	2.36	0.635	8.78
	Being Lithuanian [c]	0.138	0.568	0.059	.808	1.15	0.377	3.49
	Being French [c]	0.035	0.526	0.004	.948	1.03	0.369	2.91

Note. [a] = reference group is young people who were neither victims nor perpetrators of cyberhate (*n* = 4895; 92.3%); [b] = reference group is being female; [c] = reference group is being Romanian. Analyses were also controlled for place of interview and method of interview (not included in the table).

online (OR = 1.47, $CI_{95\%}$ [1.09–1.96]) and who reported excessive Internet use (OR = 1.34, $CI_{95\%}$ [1.04–1.73]) and high levels of sensation seeking showed higher odds of being a cyberhate perpetrator (OR = 1.49, $CI_{95\%}$ [1.17–1.89]). In addition, witnessing cyberhate increased the risk of becoming a cyberhate perpetrator (OR = 5.04, $CI_{95\%}$ [3.09–8.21]). Data misuse and sharenting were both unrelated to cyberhate perpetration.

6. Discussion

Cyberhate is a ubiquitous social problem. Nevertheless, not much is known on its correlates for young people's involvement in cyberhate as victims or perpetrators. Hence, the present study used a large sample of young people from ten European countries, to investigated a broad range of online correlates of cyberhate involvement which have not been investigated before. Overall, the present study revealed several novel findings that can be used for the development of prevention programmes.

6.1. Findings regarding cyberhate victimisation

To understand cyberhate victimisation, we adopted the Routine Activity Theory (Cohen & Felson, 1979) as a theoretical framework. More specifically, we found support for our first hypothesis, that target suitability (e.g., experiences of data misuse, contact with unknown people online) is positively related to the risk of being a cyberhate

victim. Our finding regarding the positive correlation between experiences of data misuse and cyberhate victimisation extends previous research that showed an association between various forms of cybervictimisation (Hamby et al., 2018; Machimbarrena et al., 2018; Montiel et al., 2016) and other research that found a positive relationship between traditional/cyberbullying victimisation and cyberhate victimisation (Blaya et al., 2020; Wachs, Wright, & Vazsonyi, 2019). Cyberhate perpetrators might use personal information of their potential victims to attack them with hateful messages and posts. Alternatively, experiencing data misuse might be partially explained by young people's willingness to disclose private information online which has also been shown to be positively related to cyberhate victimisation (Wachs et al., 2021).

As expected, we also found a positive association between contact with unknown people online and cyberhate victimisation. We propose that the unknown people met online could take advantage of the vulnerability of their potential targets (e.g., in terms of young people's search for political identity) (Bauman et al., 2021). Cyberhate victims who show a higher risk for traditional bullying and cyberbullying, including social exclusion from online and offline peer activities (Blaya & Audrin, 2019; Wachs, Wright, & Vazsonyi, 2019) might try to compensate the lack of social interaction by looking online for new people to socialise with. Our finding extends the extant literature showing a positive association between contact with unknown people online and exposure to hate messages (Harriman et al., 2020) and cyberbullying victimisation (Craig et al., 2020; Festl & Quandt, 2016).

Coherently with our second hypothesis, problematic facets of sharenting were positively associated with being a cyberhate victim. As shown above, sharenting, can be interpreted as a lack of capable guardianship, especially when parents do not take enough privacy measures and publicly share their children's contents online (Kopecky et al., 2020). On the opposite, previous research showed that parents who appraise their children in relation to the harm of certain online activities and instruct children about the appropriateness of sharing some personal information online are less likely to be the victims of cyberhate (Wachs et al., 2021) and increase young people's ability to cope effectively with cyberhate victimisation (Wright et al., 2021). These parents might also be more aware of online risks themselves, which could prevent problematic facets of sharenting (e.g., sharing their children's private information online).

In line with our third hypothesis, we expected that exposure to potential offenders in the form of witnessing cyberhate, excessive Internet use, and sensation seeking would be positively related to being a cyberhate victim. Findings partly confirmed our hypothesis. A positive correlation was found between witnessing cyberhate and victimisation. This finding corresponds to previous research (Costello et al., 2016; Wachs et al., 2021; Wachs & Wright, 2018) and it signals that the higher the exposure to cyberhate, the higher young people's chances to be victimised by hateful contents online are. An explanation could be that some young people might engage in counter speech, while giving public support to the targeted person or social group (Gámez-Guadix et al., 2020; Wachs, Gámez-Guadix, et al., 2020). This might expose them to the risk of becoming victims of cyberhate themselves. Another possible explanation is that young people's behaviour in cyberhate situations changes according to the online context. For instance, young people might be either targeted or act as bystanders depending on the attributes that the perpetrator aims to target in a specific online context.

In line with our hypothesis, we found a positive association between excessive Internet use and cyberhate victimisation. We propose that young people who use the Internet excessively and show social vulnerability (e.g., lack of offline peer contacts) might become cyberhate victims more easily. In accordance with the RAT (Cohen & Felson, 1979), spending excessive time in online environments that could be framed as "dangerous" increase their chances to being exposed to hateful online contents (i.e., bystander). This finding extends research that revealed a positive relationship between time spent online and exposure to hate messages (Harriman et al., 2020) and it is consistent with research on excessive Internet use and cyberbullying victimisation (Gámez-Guadix et al., 2013; Jung et al., 2014; Machimbarrena et al., 2018; Wachs, Vazsonyi, et al., 2020). Another explanation might be that young people who use the internet excessively, try to compensate lack of social peer contacts (Stodt et al., 2016) which in turn increases their risk for cyberhate victimisation.

Findings regarding the relationship between sensation seeking and cyberhate victimisation were ambiguous. While the bivariate analysis revealed a significant positive correlation, the multivariate regression did not. A positive relationship seems reasonable and could signal that victims of cyberhate might be involved in arousing Internet experiences (e.g., coming into contact with hate groups), which might expose them to the risk of cyberhate victimisation. However, given the lack of significant results in the multivariate analysis, further research investigating this link is needed.

Overall, the findings suggest the usefulness of RAT to explain cyberhate victimisation among young people. The present study extends previous research conducted with young adults and adopting the RAT as a theoretical framework (e.g., Costello et al., 2017; Hawdon et al., 2019). The current investigation also extends past research among adolescents (e.g., Wachs, Costello et al., 2021) by including different countries and distinct correlates to operationalise the three core elements of RAT.

6.2. Findings regarding cyberhate perpetration

The Problem Behaviour Theory (Jessor & Jessor, 1977) was adopted as a guiding theoretical framework to investigate the associations between several forms of online problem behaviours (e.g., contact with unknown people online, excessive Internet use, sensation seeking) and cyberhate perpetration. Overall, the findings supported our fourth hypothesis, that online problem behaviours are positively associated with cyberhate perpetration. More specifically, we found a positive correlation between contact with unknown people and cyberhate perpetration. This is a novel finding in the literature that resonates with related cyberbullying research (Craig et al., 2020; Gámez-Guadix et al., 2016; Görzig & Ólafsson, 2013).

Although the present study did not assess whether the people met online belonged to extremist or hater groups, it could be advanced that being in contact with unknown people online might expose young people to the risk of socialising with haters and starting to spread hate content online. Previous research has shown that young people might be willing to post cyberhate comments online in exchange for a financial remuneration (Jabłońska & Kozak, 2017). Such requests to post cyberhate comments online could come from unknown people. However, given that this study did not assess whether the new people met online had any role in socialising young people to hateful contents, the interpretation of these findings remain speculative. Another potential explanation is that young people involved in cyberhate as perpetrators have experienced offline and social exclusion by peers (Blaya & Audrin, 2019), which could at least partly explain why they may be inclined to meet new people online.

In line with our expectation, we found evidence for a positive relationship between excessive Internet use and cyberhate perpetration. We propose that impaired self-control, greater irritability, social conflicts, social consequences, and aggressive behaviour resulting from excessive Internet use (Casas et al., 2013; Kammerl et al., 2012; Wartberg et al., 2019; Yu & Shek, 2018) might also increase young people's likelihood for cyberhate perpetration. Another explanation might be, that some young people who use the Internet excessively might end up searching for groups who give them a sense of identity, which could make them vulnerable to cyberhate perpetration (Bauman et al., 2021). Our finding is in line with some previous research on cyberhate that investigated the link between time spent online and cyberhate perpetration (Blaya & Audrin, 2019). However, this finding does not meet the conclusions of

other research that found a negative relationship (Costello & Hawdon, 2018) or no significant association (Celik, 2019). Nevertheless, this finding aligns with research that investigated excessive Internet use and cyberbullying perpetration (Casas et al., 2013; Gámez-Guadix et al., 2016; Wachs et al., 2015). More research is needed to understand whether methodological differences (e.g., the way of operationalising excessive Internet use, sample characteristics) influence the findings.

The present study revealed a positive association between sensation seeking and cyberhate perpetration. We argue that young people might search for thrilling online content on purpose, with the aim to be accepted by peers, challenge adult authority, affirm their own identity and be in control of their own lives (Sanci et al., 2018). Being involved in cyberhate perpetration could be interpreted as an arousing experience, and this could be especially true for young people with high levels of sensation seeking. These young people might search for stimulation in online activities that could increase their levels of arousal. This finding contributes to the existing literature that indicates a positive association between sensation seeking and cyberbullying perpetration (Antoniadou et al., 2016; Görzig & Machackova, 2015; Graf et al., 2019).

Finally, cyberhate perpetration was positively associated with witnessing cyberhate. Previous research has explained the overlap between these two behaviours in light of the Social Learning Theory according to which observing deviant behaviours is associated with enacting such behaviours (Wachs & Wright, 2018). Adolescents who are exposed to antisocial behaviours online might become desensitised to negative and abusive online comments and behaviours (Pabian et al., 2016), which might facilitate the enactment of cyberhate. The opposite pattern is also possible, namely adolescents who enact cyberhate perpetration online could be desensitised to hate comments and might even tend to normalise harmful online behaviours (Windisch et al., 2021), which could explain why they might witness cyberhate passively.

6.3. Limitations and future directions

Overall, the findings of this study contribute to our understanding of cyberhate victimisation correlates among young people. However, we acknowledge that this study has some methodological limitations. Firstly, one limitation is the adoption of self-assessment measures only, which could contribute to the shared-methods variance issues. Secondly, cyberhate behaviours were assessed with single-item measures. It is hoped that future research will develop and validate further scales to assess adolescent involvement in cyberhate to overcome typical problems which can be related to single-item measures. Thirdly, this study did not disentangle among cyberhate behaviours targeted at different minority groups (e.g., ethnic-based; religion-based; homophobic, ableism etc.). Follow-up research should adopt different scales and should also recruit diverse samples. A mixed-method approach, combining survey questionnaires and in-depth interviews could help to obtain a clearer picture of the types of cyberhate that young people experience and perpetrate online. Fourthly, the present study used a cross-sectional design which does not allow us to determine which of our main variables represent either a risk factor or a consequence of cyberhate. Longitudinal research could help to better explain the temporal ordering between the variables investigated in this study. Fifthly, due to the relatively low frequency rates of cyberhate, we were not able to conduct analyses separated by country. Future research should try to compare the findings between countries and investigate the cross-national validity of the present findings. Finally, we focused only on online-related correlates of cyberhate. We suggest that cyberhate involvement should be investigated from a socio-ecological perspective (Wachs, Schubarth, & Bilz, 2020); hence, follow-up research should investigate the role of distinct social layers in affecting cyberhate. For instance, socialisation processes in the offline world (e.g., media education in school, parenting styles, peer norms) might also have a crucial role in facilitating cyberhate involvement in adolescence. In relation to this, capable guardianship was measured only by one construct in the present study. Follow-up research should try to include more constructs to operationalise this important element.

6.4. Practical implications

This study has a number of practical implications that should be considered. Regarding victimisation, measures that reduce target suitability are needed. One possibility would be to provide information on cybersecurity and cyber protection to young people, including the proper strategies to protect personal data and information online and information on potential risks of online relationships with unknown people. This idea is supported by research showing that raising awareness around the importance of online privacy protection enhances the adoption of privacy measures (Moscardelli & Divine, 2009).

The present study also highlights the need to educate parents in relation to their role in protecting children from potential online risks (e.g., cyberhate victimisation). One strategy could be to improve their media literacy skills and stimulate critical reflection in relation to the possible consequences of sharing their children's information online. In spite of the common-sense assumptions that young people do not care about their privacy, recent research has shown that children and young people struggle to protect their privacy online (Livingstone et al., 2020). Parents should be made aware that sharenting could breach their children's privacy and they should be educated on the safest strategies to share their children's information online. In this regard, parents should be educated in instructive parental mediation that has been shown to be negatively correlated with their children's risk for cyberhate victimisation (Wachs et al., 2021). On a societal level, our findings trigger debates on the views of children: Should children be regarded as property of their parents or as human beings with agency and, as such, inherent rights (e.g., informational self-determination)?

In relation to cyberhate perpetration, prevention should be holistic since different online risk behaviours appear to be related, as this study suggests. Interventions that focus on multiple online risk behaviours (e.g., contact with unknown people online, excessive Internet use, sensation seeking, and cyberhate) may be more effective than those with a more limited focus. Moreover, intervening in the common predictors of related online problem behaviours could reduce the incidence of cyberhate and other associated variables. More research is needed to understand which online life skills might be the most effective to address the issue of online problem behaviours.

7. Conclusion

The present study investigated a broad range of online correlates for cyberhate involvement among young people from ten European countries. We extend the existing literature on significant associations between data misuse, contact with unknown people online, sharenting, witnessing cyberhate, excessive Internet use, and cyberhate victimisation. Hence, the results confirmed the general assumption of the Routine Activity Theory. Furthermore, we found a positive relationship between contact with unknown people online, excessive Internet use, sensation seeking, and cyberhate perpetration which supported the core assumption of the Problem Behaviour Theory. This study also showed that some correlates of involvement as victim and perpetrator are similar (e.g., contact with unknown people online, witnessing cyberhate, excessive Internet use), others seem to be more relevant for either victim (e.g., sharenting, experiences of data misuse) or perpetrator (e.g., sensation seeking). This suggests that beside universal topics, prevention programmes should also include specific prevention elements addressing a particular form of involvement. While the findings of the current study can be used to develop prevention programmes to protect young people from cyberhate involvement on a local, national and international level, more socio-ecological research is needed that also considers offline correlates of cyberhate involvement.

Credit author statement

Sebastian Wachs: Conceptualization, Methodology, Formal analysis, Writing - Original Draft, Writing - Review & Editing, Angela Mazzone: Writing - Original Draft; Tijana Milosevic: Writing - Review & Editing; Michelle F. Wright: Writing - Review & Editing; Catherine Blaya: Writing - Review & Editing; Manuel Gámez-Guadix: Writing - Review & Editing; James O'Higgins Norman: Writing - Review & Editing.

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