Cyber Stalking, Cyber Harassment and Adult Mental Health: A Systematic Review

Francesca Stevens (MSc), Jason R.C. Nurse (PhD) and Budi Arief (PhD)

University of Kent, UK

Email: fstevens275@gmail.com, J.R.C.Nurse@kent.ac.uk, B.Arief@kent.ac.uk

Abstract

As Internet use increases, there is a growing risk of online harms, including cyber stalking and cyber harassment. However, there has been limited research investigating the impact of such online harms upon adults' well-being. This paper engages in a systematic literature review concerning the mental health impact of online stalking and harassment for adult victims to further understand their experiences and the effects these have on their lives. Our research utilised the PRISMA technique to review papers published in eight online databases. A total of 1,204 articles were extracted, and ultimately 43 articles analysed. Forty-two of the reviewed articles reported that victims of cyber stalking and/or harassment experienced a multitude of harmful and detrimental consequences for their mental health including depression, anxiety, suicidal ideation and panic attacks. Victims recounted the lack of support they received from the criminal justice system, and their subsequent distrust of technology post abuse. Only one study found no relationship between cyber abuse victimisation and the well-being dimensions they examined. Our research highlights the need to devise practical solutions to tackle and minimise this victimisation. Furthermore, it underlines the necessity for adult education concerning safer technology use, as well as for researchers to be transparent regarding the platforms that victims have been abused on so we can better infer where and how exactly individuals need support to interact safely online.

This article has been accepted for publication in the Journal of Cyberpsychology, Behavior, and Social Networking, 2020/21.

1. INTRODUCTION

The Internet and online applications have become fundamental parts of society. While undoubtedly beneficial, they also present threats to children, adolescents and adults alike. Cyber stalking and cyber harassment are two of these dangers[1]. Cyber stalking can be defined as "the use of the Internet, e-mail or other electronic communications devices to stalk another person"[2]. Cyber harassment and cyber bullying have been used analogously[3], with cyber bullying defined as "the repeated and intentional use of various forms of technology such as cell phones, pagers, e-mail, instant messaging, and Web sites by individuals or groups to harm others"[4].

Traditional (offline) stalking and harassment have long been associated with causing a myriad of negative impacts upon victims' mental health, including anxiety, depression, nightmares, flashbacks and suicidal thoughts[5,6,7]. Periodically, it is essential to reflect on what existing research states about mental health of victims, and examine what research is missing within the cyberpsychology field. Most research focuses on adolescents and school-aged children[8,9], but there is a lack of understanding on *adults'* experiences.

Using the WHO's definition of mental health[10], we aim *to examine the impact that being a victim of cyber stalking or harassment has on adults' mental health and well-being*. Therefore, our research question (RQ) is: **How does cyber stalking and harassment impact the mental health of adult victims?**

Systematic reviews have been conducted examining cyber victimisation and adolescents' mental health[11,12]. Furthermore, a systematic map was recently conducted examining the relationship between cyberbullying and mental health both in children and young people[13]. To our knowledge however, a review regarding the impact of cyber stalking and harassment on the mental health of *adult* victims (i.e. aged 18 and over) has not yet been conducted. Such a review would provide greater insight into adult victims' experiences of cyber abuse, which may differ to children and adolescents.

The contributions of our paper are:

- A systematic review of existing research on the mental health impact of cyber stalking and harassment for adult victims.
- A compilation of the psychological harms experienced by adult victims of online stalking and harassment.
- A highlight of the distrust towards technology felt by individuals after victimisation and the need for this to be addressed regarding future technology use.
- An outline of related areas for future cyberpsychology research.

2. METHODS

Systematic review

Our systematic review utilised the parameters established by Preferred Reporting Items for Systematic reviews and Meta-Analysis (PRISMA) group[14], ensuring the search process was rigorous and without researcher selection bias[15]. PRISMA was selected because its 27-stage checklist (some key stages depicted in **Figure 1**) provides a robust and thorough platform for a critical review[14].

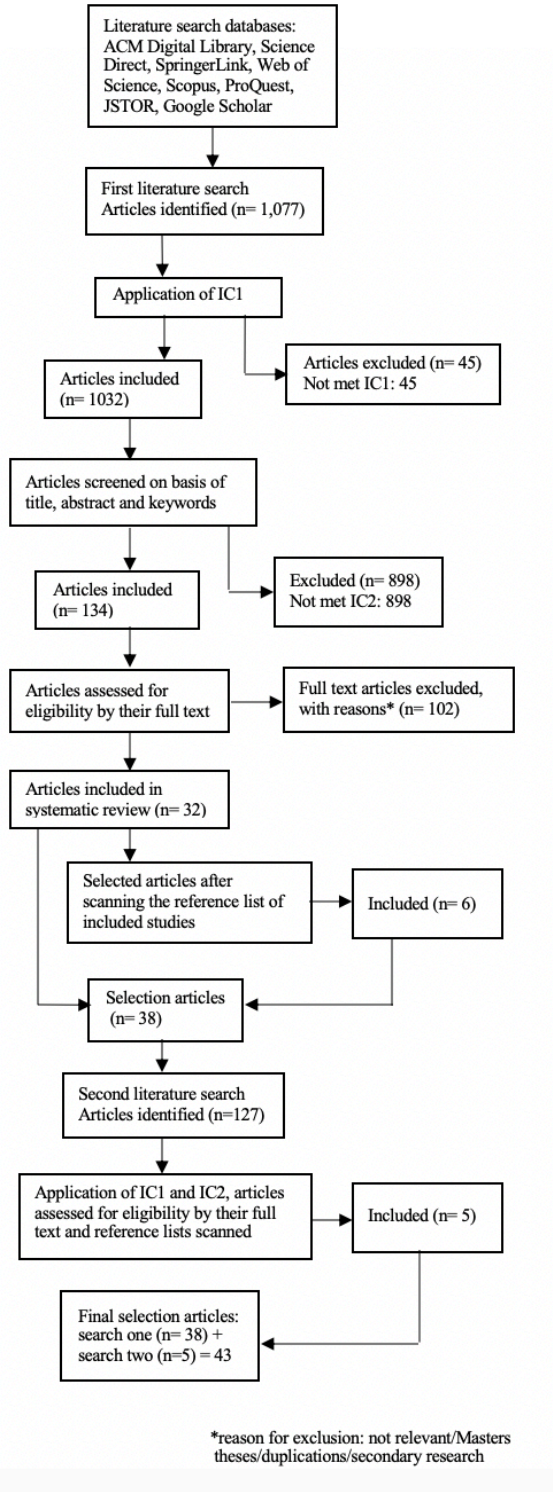

Figure 1: PRISMA Flow Diagram

Eligibility criteria

We defined two study inclusion criteria (IC): the articles were in English (IC1) and of relevance to the RQ (IC2). These ICs were chosen as we (the authors) speak English, and were seeking to answer how cyber stalking and harassment impacts adult victims' mental health. Additionally, the articles had to be peer-reviewed, and consist of primary research (where researchers collected original data themselves), to be eligible for the final qualitative synthesis.

Data sources

We used eight databases to find relevant articles: ProQuest, Scopus, JSTOR, Web of Science, Science Direct, SpringerLink, ACM Digital Library and Google Scholar. The search was conducted between December 2019 and January 2020.

Article selection and data collection

The article selection and data collection processes were as follows:

1. Searching the databases above, using the terms: *(("cyber stalking" OR "cyberstalking" OR "online stalking" OR "internet stalking" OR "internet harassment" OR "online harassment" or "cyber harassment") AND victim AND "mental health")* (with the application of IC1). It should be noted here that as cyber bullying usually refers to children and adolescents, *"harassment"* was selected instead[16].
2. Screening the articles based on their title, abstract and keywords (application of IC2).
3. The remaining articles were read in their entirety to establish eligibility.
4. Each of the eligible articles were read again, whilst data was extracted and compiled into a data table.
5. The reference lists of the final articles were examined to ensure no further relevant literature was missed. Stages 2 and 3 were repeated, while keeping the remainder of the eligibility criteria.

Discussions took place between the authors if any hesitation arose concerning whether an article should be included, to ensure we agreed with the final selection.

Data items

The data items (aspects of interest within each article) collected are: how cyber stalking and/or harassment are defined; research methods utilised; types of participants; types of cyber stalking and harassment victimisation; mental health effects victims' experienced; platforms the abuse occurred on; and key research contributions. These data items were selected as they highlighted key areas related to our RQ.

3. RESULTS

Study selection

The first literature search produced 1,077 articles. Forty-five were excluded as they were not written in English (IC1). The outstanding 1,032 articles were screened on the basis of their title, abstract and keywords. Next, 898 articles were removed as they were not relevant (IC2). The remaining 134 articles were then assessed for eligibility based on their full text, with a further 102 articles excluded for one or more of the following reasons: not relevant, not peer-reviewed, a duplication or consisted of secondary research. Thirty-two articles remained, and their reference lists were scanned to ensure all possible appropriate literature was searched for; a further six articles were found to be relevant, adhering to IC1 and IC2. Therefore, the number of selected articles was 38[8,9,17-52].

A second search, using the identical article selection and data collection processes, was conducted in July 2020 to determine whether there were any recently published papers of relevance. Five additional papers[53-57] were added, bringing the total number to 43 articles.

Figure 1 shows our PRISMA flow diagram, illustrating the method and results for both searches.

Study characteristics

Once the final set of articles were selected, the data items were collected. **Table 1** displays an excerpt of the final data table for three articles. Over half (24) of the articles were published within the last five years, illustrating the growth in this research area, and the increasing problems faced whilst interacting online. A cross-sectional research design was commonly employed.

TABLE 1: EXCERPT OF EXTRACTED DATA ITEMS

References	*Methodology*	*Mental health impacts experienced by victims*	*Technology/ platform abuse occurred on*	*Forms of cyber abuse taking place*
				Participants had the following happen to them by their partners:
34	Online survey	Results demonstrated the negative relationship between dating abuse and well-being among emerging adults, and were consistent with the study's main hypothesis that cyber dating abuse (CDA) is a significant negative predictor of self-esteem. Also, that CDA is a significant positive predictor of emotional distress, and that emotional distress fully mediated the relationship between CDA in predicting self-esteem.	Facebook, Myspace, YouTube, mobile phone (calls & texting), Instant Messenger and WebChat	Received text messages checking up on them (to know where they are/what they are doing/who they are with), been shouted at over the phone, been made to feel afraid when they did not respond (to calls, texts, postings on social networking page or IMs), been sent IMs or chats that made them feel scared, been harassed or put down on social networking site, been sent threatening text messages, had their social networking account used without permission, been sent so many messages (texts, emails, chats) that it made them feel scared, had embarrassing photos/videos posted of them online, had a video taken of them and then had it sent to partner's friends without their permission, spread rumours about them (using a cell phone, IM, Webchat or social networking site), had nasty things written about them on partner's profile page, had a profile page (like Facebook, Myspace or YouTube) about them knowing it would upset them, been threatened (through a cell phone, text message or social networking page) that they would be physically harmed.
35	Online survey	Cyberstalking victimisation predicted psychological trauma and impairment in academic/career functioning; significant predictors of both outcomes included self-defined victimisation and the number of distinct cyberstalking behaviours experienced.	Email, blogs, GPS device in phone/ car, Facebook, Myspace, Google, chat rooms, AOL/AIM, Yahoo, univ. directory/ website and text message	Being sent poetry, song lyrics, e-cards, or messages implying a more intimate relationship than one had with the stalker, being sent needy/demanding/ threatening messages, being sent messages with inappropriate info., having rumours spread via email, IM, blog etc., having photos posted/shared without consent, being sent sexually harassing messages, being sent threatening pictures/images, perpetrator obtaining/exposing private info. and monitoring online profiles, having their identity online taken over, being falsely represented online, enlisting others to electronically harass them, trying to disable their device, 'bugging' their car/home/office, tracking them via GPS.
52	Survey (in-person)	Approximately 45% of the participants who reported experiencing cyberbullying reported feeling angry, 41% felt sad, 32% reported experiencing an increase in stress, and 9% reported experiencing a loss of productivity. Only 6% reported experiencing no effects.	Text message, email, websites, chat rooms	No details given* *Article stated: "Section 2 of the questionnaire consisted of 14 questions that inquired about cyberbullying experiences and individuals interested in obtaining a copy of the survey may contact the authors".

Definitions of cyber stalking and harassment

Many of the articles acknowledge the lack of definitional consistency of cyber stalking and harassment (or cyber bullying). A significant difference is the specification (or absence) of how frequently the offence must occur to be deemed stalking or harassment. For example, one study defines cyber stalking generally as "threatening behaviour or unwanted advances directed at another"[24], whilst another stipulates that it is the "repeated pursuit (2 or more times), by the same person"[32].

Research study methods and participants

Thirty studies used a survey research method as their sole, or one of their methods to gather data, making it the most common approach. Eight utilised questionnaires, seven studies conducted interviews and two ran focus groups, again as their sole, or as part of their mixed or multi-method procedure. One study utilised a mixed-method approach[23], and two selected multi-method[27,39].

Thirty-seven studies were conducted in Western countries, predominantly within the United States and Canada. Only one study had a nationally representative sample[8], with convenience and purposive sampling being the predominant choice. Twenty-four studies' samples comprised exclusively of university/college students; one with students and faculty members[27] and two with just faculty members[23,26]. Therefore, a total of 27 of the 43 studies concerned themselves solely with university/college personnel. **Table 2** displays the publication dates, geographical locations the research was conducted in, and research methods used.

Nineteen studies described samples' racial/ethnic background, with 17 samples having a majority of Caucasian participants, and only one having more African American participants than Caucasian[38]. 34 studies provided their samples' gender breakdown, with 27 having a majority of female participants, three having more males than females[28,33], and four having solely female[9,25,39,43].

Use of different technologies to perpetrate cyber victimisation

I. Platforms cyber abuse occurs upon

A multitude of platforms were utilised by perpetrators: email (listed by 26 studies), text messages (21), Facebook (16), chat rooms (8), blogs (7) and GPS applications, such as Find My Friends50 (3). Eleven studies did not provide specific information, stating "digital technologies"9, the "internet"8,21 and "social networks"21. **Table 3** summarises platforms used by perpetrators.

II. Forms of online stalking and harassment

Thirty-one articles provided a myriad of cyber stalking and harassment examples, including receiving threatening and abusive messages, having their accounts hacked (including social media, email and online banking), and degrading comments posted about themselves. Eighteen articles referenced examples of abuse involving intimate images/photographs, including non-consensual pornography[9,36,50], a victim's face being photoshopped onto another person's body[27] and profiles being set up in a victim's name on "sexually explicit websites inciting men to make contact with her"[40]. Four articles mentioned passwords issues, including being changed to prevent the victim from accessing their accounts[45,49], stolen[22] or demanded[50] so the perpetrator could access the victim's private information.

However, 12 articles did not specify examples, instead using vague terms including "online messages"[37] and "cyberbullying experiences"[52].

TABLE 2: OVERVIEW OF ARTICLES

Characteristics of articles (n=43)	*No. of articles*	*References*
Date of publication		
2005	1	19
2008	1	35
2011	3	22, 24, 48
2012	2	44, 47
2013	1	31
2014	8	23, 26, 28, 30, 33, 41, 45, 52
2015	3	29, 43, 46
2016	4	25, 36, 37, 49
2017	8	8, 17, 27, 34, 38, 40, 50, 51
2018	2	9, 18
2019	5	20, 21, 32, 39, 42
2020	5	53, 54, 55, 56, 57
Geographical location		
USA	14	22, 25, 32, 35, 36, 37, 38, 41, 43, 44, 49, 52, 54, 57
Canada	10	8, 9, 23, 26, 27, 30, 31, 34, 39, 55
UK	6	19, 24, 40, 45, 46, 51
Italy	2	20, 21
Germany	2	28, 47
Pakistan	2	33, 42
Australia	1	50
New Zealand	1	29
Turkey	1	48
Nigeria	1	18
Egypt	1	17
Spain	1	56
Myanmar	1	53
Research method used		
Survey	30	8, 9, 18, 22, 23, 24, 26, 27, 28, 29, 30, 32, 33, 34, 35, 36, 37, 42, 43, 44, 45, 46, 48, 49, 50, 51, 52, 54, 55, 57
Questionnaires	8	17, 19, 20, 21, 31, 47, 53, 56
Interviews	7	23, 25, 27, 38, 39, 40, 41
Focus groups	2	27, 39

TABLE 3: PLATFORMS WHICH PERPETRATORS USED TO UNDERTAKE CYBER ABUSE

Characteristics of articles (n=43)	*No. of articles*	*References*
Platform abuse occurred on		
Email	26	19, 22, 23, 24, 25, 26, 27, 28, 29, 30, 31, 33, 35, 38, 40, 41, 43, 45, 46, 49, 50, 51, 52, 55, 56, 57
Text message	21	22, 24, 25, 27, 30, 33, 34, 35, 38, 40, 41, 43, 44, 45, 46, 49, 50, 52, 53, 55, 57
Facebook	16	22, 25, 26, 27, 30, 34, 35, 38, 39, 40, 43, 45, 49, 50, 51, 53
Instant Messenger	9	24, 25, 31, 33, 34, 35, 41, 45, 46
Social Networking Sites	9	25, 27, 29, 30, 33, 37, 50, 51, 56
Chat rooms	8	22, 25, 26, 27, 28, 30, 45, 52
Phone call	7	24, 33, 34, 40, 44, 45, 46
Blog	7	26, 27, 29, 30, 35, 39, 40
Websites	5	22, 25, 27, 28, 52
Twitter	5	29, 38, 39, 49, 53
Myspace	4	22, 26, 34, 35
Via viruses	4	24, 28, 45, 46
GPS application	3	35, 49, 50
Forums	3	26, 28, 30
AIM Messenger	2	22, 35
Google chat	2	22, 35
College course related website	2	26, 38
Via online gaming	2	38, 43
Professor/faculty websites	2	23, 26
YouTube	2	34, 53
WhatsApp	2	39, 56
WeChat	2	39, 53
Instagram	2	39, 53
Tumbler	1	25
Telegram	1	39
Find my Friends	1	50
Online bank account	1	49
Webchat	1	34
Friendster	1	26
MSN	1	39
Bee Talk	1	53
Viber	1	53

III. Consequential distrust of technology

Six studies mentioned that trust issues developed as a result of their cyber victimisation[24,25,28,41,46,51]. Participants reported how it prevented them from continuing with their regular routine; reducing time spent outside, withdrawing from online life and developing a distrust of technology, and mistrust of people. One woman described how she became very paranoid, further becoming "reluctant to trust indirect communications", whilst another continues to have "flashbacks and experience anxiety when going to my inbox", with her health not being the same since[45]. Other victims stated they no longer owned mobile phones and refused to use social networking sites again, with one declaring they "quit the internet totally"[51]. Withdrawing from technology is a coping mechanism, but can further isolate victims from society and potential support systems[39,50].

Impact of cyber victimisation

Consistently within all of the reviewed articles except one, victims of cyber stalking and/or harassment experienced many harmful consequences for their mental health. The negative emotions and physical symptoms experienced include: anxiety, depression, sadness, anger, fear, shame, embarrassment, isolation, low self-esteem, paranoia, stomach aches, panic attacks, post-traumatic stress disorder (PTSD), self-harming behaviour, and heart palpitations. Nine studies disclosed some victims experienced self-harm or suicidal thoughts, with a few stating they had attempted suicide[25,39,44].

In one study investigating cyberstalking with 6,379 social media users, just 2.5% reported that cyberstalking had no negative consequences for them[28]. Research conducting a thematic analysis of the impact of cyberstalking described one participant explaining due to the extreme fear she had experienced, her "whole life stopped", whilst another became very ill, now suffering from "complex PTSD/depression as a result of the harassment and abuse"[45]. Negative effects of cyber victimisation can endure**,** with participants describing still feeling very anxious whenever they check emails or hear their telephone ring[51]. **Table 4** summaries the most common emotions experienced.

Two studies highlighted female victims experiencing more distress[22,47] and fear compared to male victims[17,48], whilst men were more likely to feel anger and hatred[17]. However, one study described males reporting symptoms of depression and females reporting panic symptoms[20], whereas others found females in particular experienced depression[33,37].

Whilst considering age, one study (with participants aged 15 – 61+) found that correlations between cyber bullying victimisation and poor mental health and substance use were strongest amongst adolescence, weakening across the adult age groups[8], whilst another study reported older participants felt more distressed by their victimisation[47].

When victimisation occurred within an office or university/college environment, adults explained they felt a desire to leave their job (with some actually quitting[26,27,51]), it affected their work[26] or school assignments[30], and found it harder to understand lectures than usual[53]. One student explained cyberbullying caused her to stop playing softball in her senior year at school, which she believes resulted in her losing a chance for a college scholarship[25].

Just one of the reviewed studies found no relationship between the cyber dating abuse victimisation and well-being dimensions they examined (emotional, social and psychological)[56], compared with the 42 studies reporting negative impacts for victims.

TABLE 4: EMOTIONS EXPERIENCED BY VICTIMS

Emotion experienced by victims (n=43)	*No. of articles*	*References*
Depression	23	9, 20, 21, 23, 25, 26, 27, 28, 30, 33, 36, 37, 39, 40, 41, 44, 45, 46, 49, 51, 54, 55, 57
Anxiety	14	9, 19, 23, 25, 26, 27, 30, 37, 39, 44, 45, 46, 51, 57
Stress/post-traumatic stress	13	9, 22, 27, 29, 34, 36, 39, 41, 45, 46, 47, 51, 52
Fear	12	17, 21, 23, 24, 25, 29, 40, 41, 45, 46, 48, 51
Anger	10	17, 21, 25, 28, 40, 44, 45, 48, 51, 52
Self-harm or suicidal ideation*	9	21, 23, 25, 27, 30, 39, 40, 44, 53
Low self-esteem/low confidence	9	24, 26, 27, 30, 33, 34, 41, 46, 55
Embarrassment/shame/self-blame	8	23, 25, 36, 39, 41, 46, 48, 51
Isolated	6	39, 28, 38, 46, 50, 51
Panic	5	20, 21, 28, 45, 51
Sadness	5	17, 21, 25, 44, 52
Paranoia	4	21, 44, 45, 51
Scared	1	48

*some led to self-harm/suicide attempts

Key research contributions

Forty-two of the articles reviewed provide empirical evidence demonstrating cyber stalking and harassment negatively affect adults' mental health in devastating ways. The evidence reinforces how these damaging effects of cyber victimisation can be comparable to offline stalking and harassment[31,46], and therefore must be treated as seriously. Crucially, the distrust of technology reported by victims must be taken into account when considering how individuals will continue to use - or in some cases not use - technology.

Many victims described the lack of support received from friends, and organisations intended to help them. This included universities and law enforcement departments; local police finding the situation amusing, not taking the victim seriously, victims being made to feel they were partly to blame, or overreacting[35,39,40,41,51]. One victim was told it was their "fault for putting the information online in the first place"[45]. Furthermore, some participants contacted Facebook for support, never receiving a response[51].

4. DISCUSSION

Summary of evidence

The main features of our systematic review are considered below.

I. Definitions of cyber stalking and harassment

The range of definitions presented demonstrates the lack of a universal understanding of what constitutes an act of cyber stalking and/or harassment. This can be problematic concerning prevalence rates. Estimations of cyber stalking victimisation have ranged from 3.7%, to 82%[28]. This absence of definitional consistency also results in individuals who have experienced such forms of cyber abuse not necessarily recognising it as such[39]. When victims do not identify their experiences as abuse, this can cause victimisation to continue, especially because victims feel confusion and shame, without realising they are not to blame. Perception issues pertaining to what cyber abuse actually is can also arise when individuals deliberate whether to tell peers, and officially report such offences.

TABLE 5: MEASUREMENT/SCALE USED TO MEASURE DEPRESSION

Measurement/scale utilised (n=23)*	*No. of articles*	*References*
N/A. Participants reported experiencing depression in answer to being asked in a survey	8	26, 27, 30, 33, 37, 45, 46, 51
N/A. Participants reported experiencing depression during their interviews	4	25, 39, 40, 41
The Center for Epidemiologic Studies-Depression Scale (CES-D)	2	49, 54
Depression, Anxiety and Stress Scale (DASS-21)	1	9
General Health Questionnaire (GHQ)	1	20
The shortened Beck Depression Inventory (BDI)	1	21
N/A. Participants reported they felt depressed in answer to being asked in a survey and/or interview	1	23
The WHO-5 Well-Being Index	1	28
The Center for Epidemiologic Studies Depression Scale Revised (CESD-R)	1	36
The Symptom Checklist-90-R (SCL-90-R)	1	44
The Beck Depression Inventory-II (BDI-II)	1	55
Hopkins Symptom Checklist (HSCL-58)	1	57

*23 of the reviewed studies referenced depression as an experienced emotional impact

Furthermore, various scales are used to assess participants' emotional impacts across the articles. **Table 5** illustrates the measurements utilised to define depression from the 23 studies that reference it as an experienced outcome. This is challenging when analysing mental health impacts as measurements are either inconsistent, or no scale is used therefore it relies on self-reporting. These validity issues are also a concern for anxiety and other emotions participants experienced.

II. Research study methods and types of participants

Surveys were the most common method for conducting research, with the majority of the 30 surveys run online. These enable researchers to capture information from many participants simultaneously. However, as our systematic review has found, victims of cyber abuse sometimes remove themselves from technology as a coping mechanism, therefore these individuals may not be represented in such surveys[51].

One study utilised a mixed-methods approach: an online quantitative survey and qualitative interviews[23]. Research which collects and combines both close-ended and open-ended data allows for a greater understanding of the research problem[58]. Quantitative statistics from a large survey sample, brought together with rich data elicited from in-depth interviews with a smaller number of individuals, is an ideal approach if time and resources enable it.

The samples within the 43 articles highlight the need for a wider range of participants, instead of predominantly Caucasian females within a Western country. When samples lack diversity, the circumstances of the victims' abuse may not be thoroughly understood, as factors like race, ethnicity, gender, sexuality, and disabilities could mean individuals experience abuse in different ways[41,44,49]. Contradictory findings regarding age and gender were found regarding emotional harms experienced. This is also the case for prevalence rates concerning gender and the country the research was conducted within. Two studies reported much higher victimisation rates among females[26,28] (Canada and Germany) whilst one reported the opposite[22] (USA). However, the only study with a nationally representative sample where results can be generalised, found it to be very similar between the two genders[8] (Canada), highlighting conflicting findings within Canada alone. The lack of representative samples, that more than half of the samples consisted of students, and that seven of the countries we reviewed articles from had just one relevant study that had been conducted, illustrates how more research is needed to reach conclusive findings concerning victimisation factors and prevalence rates.

III. Use of different technologies to perpetrate cyber victimisation

a. Platforms cyber abuse occurs upon

Although certain technologies may not have been created to cause harm, many are now used maliciously. GPS applications, such as Find My Friends, were intended for friends to share their location, but is now also used to stalk individuals[50].

It is valuable to consider how platforms chosen by perpetrators change over time. Chat rooms were listed by participants in eight studies, which all conducted their research prior to 2016. However, of the 10 most recently published studies (2019-2020), only five listed the platforms the perpetrators used, and chat rooms were not included[39]. Being privy to greater detail would mean we could make inferences regarding technologies and platforms involved, including changes that may occur. Furthermore, no article mentioned technology-facilitated abuse via smart devices, yet societies are witnessing an increase in this form of abuse[59]. Future research must take such abuse into account.

It can also be difficult to make inferences whether the mental health impact differs depending on the technology the perpetrator chose without being privy to platform use. For example, one study listed email, text messages and Facebook, but did not list any emotional impacts, instead describing outcomes including alcohol/substance abuse[22]. Another study listed the same three platforms, but depression, anxiety and fear were reported emotional outcomes experienced by victims[25].

b. Education to ensure safer technology interaction

Victims' distrust of technology must be tackled and reduced to facilitate healthier relationships with it in the future; isolating oneself from technology can prove to be more harmful[50]. This illustrates the need for education around technology use, to help prevent individuals from becoming a victim, or from re-victimisation. Some participants identified needing "to become more cautious" with their technology use[41], whilst others were keen for an education surrounding cyberbullying[52]. One study showed that 38.5% of participants (235 individuals) gave their telephone number to a stranger online[52], suggesting a requirement for greater public awareness regarding online security.

We must further consider how to educate adults who are not at university/college. Examples from the reviewed articles include The Technology Safety Project[49] and the Domestic Violence Resource Centre Victoria (DVRCV)[50], which provide education and technology safety resources to victims of domestic abuse. These projects are of the utmost importance, but we must also ensure that educational programmes exist for victims of cyber abuse if they are not part of domestic violence.

IV. Impact of cyber victimisation

The wide scope and high prevalence of negative mental health impacts demonstrate that cyber stalking and harassment adversely affect people psychologically, socially, physically and even financially when job loss or academic interruption occurs. Our research question has been clearly answered by the multitude of negative mental health effects experienced by participants within all but one of the reviewed articles. The impacts range from distress, shame and panic to anxiety, self-harm and attempted suicide. This affects victims' lives in the present moment of the victimisation, and afterwards, with resulting depression and PTSD.

A systematic map exploring cyberbullying and youths' mental health also found that depression and anxiety were the most commonly experienced emotions by victims[13]. However, self-blame/shame was referenced in eight of the articles we reviewed, but not mentioned in the systematic map[13]. This suggests self-blame/shame might be a predominantly adult experienced emotion. Another systematic review of cyberbullying and adolescent mental health likewise found that cyber bulling victimisation was commonly associated with depression[12]. In contrast, only two of the 25 articles in another critical review and synthesis of research examining cyberbullying victimisation of children/adolescents referenced depression[11]. However, it solely synthesised quantitative research, therefore participants may not have had the opportunity to discuss that emotional impact if they were not directly asked.

The authors of the study we reviewed which found no relationship between cyber dating abuse victimisation and well-being[56], stated this was surprising, potentially being a consequence of the victims not identifying these experiences as serious as other types of aggressive behaviours[56].

V. Key research contributions

It is concerning that research illustrates how victims have not been adequately supported. Participants commented that without "physical attack"[51], police do not feel compelled to act. Our review has highlighted that victims of online stalking and harassment suffer from many negative mental health effects, in the same way that victims of traditional means of stalking and harassment do, thus criminal justice systems must recognise this. Platforms like Facebook and Twitter, and newer ones including Snapchat and TikTok, must truly comprehend the seriousness of such crimes, and have a legal obligation to aid victims as best they can. This lack of support needs to be rectified to better support victims and help with their reintegration regarding technology use.

5. CONCLUSIONS AND FUTURE WORK

This systematic review has answered our research question: *how does cyber stalking and harassment impact the mental health of adult victims?* Forty-two of the 43 studies reviewed illustrate the negative impact that such victimisation has had on mental health**.** Furthermore, as is the case with adolescent and child victims, adults' well-being suffers from such abuse. We have identified and analysed the wide range of psychological harms this cyber abuse causes, whilst reviewing and critiquing existing research that has been conducted in this field. It is widely understood that offline stalking is a significant public health issue[51] and online stalking

and harassment must also be treated as such due to the harmful consequences of cyber abuse being akin to offline abuse.

Future research and outstanding challenges

Definitional consistency: The range of definitions of cyber stalking and harassment – and scales measuring such victimisation – greatly affects prevalence rates. Future research should seek to determine a widely-accepted definition/measurement. This could be achieved by asking victims what they consider cyber abuse to be and their definitions. Involving relevant government personnel, charities and non-governmental organisations would also be of benefit. Furthermore, scales/measurements utilised to assess emotional impacts including depression and anxiety must have uniformity to improve the validity of these findings.

Longitudinal research: Employing a longitudinal research design in future research would allow for the consideration of *causality*, not solely correlational relationships. Cross-sectional research only looks at samples in one moment in time[35]. While a cross-sectional design means several variables can be examined simultaneously, it leaves the possibility that an alternative variable could be (or at least part of) the reason for the experienced negative mental health impact. For example, within university/college environments, it can be difficult to attribute problematic alcohol use to cyber victimisation when it can be associated generally with wider "collegiate culture"[43].

Platforms utilised: Future research should give sufficient attention to the platforms used by perpetrators of cyber abuse to better understand where victimisation is occurring. This would also aid the formation of adult educational programmes regarding safer technology use.

Exploring different factors: Factors including age, race, and gender must be further researched whilst exploring cyber victimisation to greater determine their relationship to prevalence rates, and how they influence emotional impacts experienced. Additionally, a greater diversity of participants for samples is needed.

Usable solutions: This systematic review has drawn attention to the need for usable solutions concerning future technology interaction. Research needs to better understand how cyber abuse victims continue to interact with technology after victimisation, and what solutions could help reduce future risk. The research field is still trying to understand the harms, and has not yet fully moved onto the solutions.

Survey research: Future research exploring the consequential distrust of technology should employ quantitative survey methods to understand the prevalence. The articles highlighting this issue utilised a qualitative and quantitative survey methodology[50], qualitative surveys[45,51] and interviews[39]. This is also relevant for research exploring authorities' dismissiveness, as the studies that demonstrated this utilised an interview method[39-41], a qualitative survey[45,51], and a qualitative and quantitative survey methodology[35].

Limitations

The search terms did not include 'cyber bullying'. Although our searches still found many articles with 'cyberbullying' in the title, we acknowledge that is not possible to ensure we did not miss any research. Secondly, we only included articles written in English thus relevant research written in another language may have been excluded.

AUTHOR DISCLOSURE STATEMENT

No competing financial interests exist.

REFERENCES

1. Pittaro, M., L. (2007) Cyber stalking: An Analysis of Online Harassment and intimidation, International Journal of Cyber Criminology, 1(2), 180-197

2. Hinduja, S and Patchin, J., W. (2008) Cyberbullying: An Exploratory Analysis of Factors Related to Offending and Victimization, Deviant Behavior, 29(2): 129-156

3. Beran, T. and Li, Q. (2005) Cyber-harassment: A study of a new method for an old behaviour, J. Educational Computing Research, 32 (3), 265-277

4. Patchin, J. W. and Hinduja, S. (2006) Bullies Move Beyond the Schoolyard: A Preliminary Look at Cyberbullying, Youth Violence and Juvenile Justice, 4(2), 148-169

5. Pathe., M. and Mullen, P., E. (1997) The impact of stalkers on their victims, The British Journal of Psychiatry, 170(1): 12-17

6. Davis, K., E., Coker, A., L. and Sanderson, M. (2002) Physical and mental health effects of being stalked for men and women, Violence and Victims, 17(4), 429-43

7. Kuehner, C., Gass, P. and Dressing, H. (2007) Increased risk of mental disorders among lifetime victims of stalking – Findings from a community study, European Psychiatry, 22(3), 142-145

8. Kim, S., Boyle, M., H. and Georgiades, K. (2017) Cyberbullying victimisation and its association with health across the life course: A Canadian population study, Canadian Journal of Public Health, 108(5-6), 468-474

9. Cripps, J. and Stermac, L. (2018) Cyber-Sexual Violence and Negative Emotional States among Women in a Canadian University, International Journal of Cyber Criminology, 12(1), 171-186

10. World Health Organisation (2004) Promoting mental health: concepts, emerging evidence, practice: summary report. Available at: https://www.who.int/mental_health/evidence/en/promoting_mhh.pdf

11. Tokunaga, R., S. (2010) Following you home from school: A critical review and synthesis of research on cyberbullying victimization, Computers in Human Behavior, 26, 277–287

12. Bottino, S., M, Bottino, C., M., Regina, C., G., Correia, A., V. and Ribeiro, W., S (2015) Cyberbullying and adolescent mental health: systematic review, Cadernos de Saude Publica, 31(3), 463-75

13. Kwan, I., Dickson, K., Richardson, M., MacDowall, W., Burchett, H., Stansfield, C., Brunton, G., Sutcliffe, K. and Thomas, J. (2020) Cyberbullying and Children and Young People's Mental Health: A Systematic Map of Systematic Reviews, Cyberpsychology, Behavior, and Social Networking, 23(2), 72-82

14. Liberati, A., Altman, D., G., Tetzlaff, J., Mulrow, C., Gotzsche, P., C., Ioannidis, J., P., A., et al., (2009) The PRISMA statement for reporting systematic reviews and meta-analyses of studies that evaluate healthcare interventions: explanation and elaboration, BMJ, 339: b2700

15. Moher, D., Liberati, A., Tetzlaff, J., Altman, D., G. and the PRISMA Group (2009), Preferred Reporting Items for Systematic Reviews and Meta-Analyses: The PRISMA Statement, Annals of Internal Medicine, 151(4), 264-270

16. Hazelwood, S., D. & Koon-Magnin, S. (2013) Cyber Stalking and Cyber Harassment Legislation in the United States: A Qualitative Analysis, International Journal of Cyber Criminology, 7(2): 155-168

17. Arafa, A, E. and Senosy, S., A. (2017) Pattern and correlates of cyberbullying victimisation among Egyptian university students in Beni-Suef, Egypt, The Journal of the Egyptian Public Health Association, 92(2), 107-115

18. Amalu, M., N. (2018) Cyber Bullying and Psychological Well-Being among Undergraduates in the University of Calabar, International Journal of Educational Benchmark (UEB), 9(2), 29-40

19. Baruch, Y. (2005) Bullying on the net: adverse behaviour on e-mail and its impact, Information and Management, 42, 361-371

20. Bastiani, F., Romito, P. and Saurel-Cubizolles, M-J. (2019) Mental distress and sexual harassment in Italian university students, Archives of Women's Mental Health, 22, 229-236

21. Begotti, T. and Maran, D., A. (2019) Characteristics of Cyberstalking Behavior, Consequences, and Coping Strategies: A Cross-Sectional Study in a Sample of Italian University Students, Future Internet 2019, 11, 120

22. Bennett, D., C., Ramos, M., C., Guran, E., L. and Margolin, G. (2011) College Students' Electronic Victimisation in Friendships and Dating Relationships: Anticipated Distress and Associations with Risky Behaviors, Violence and Victims, 26(4), 410-429

23. Blizard, L., M. (2014) 'Faculty Members' Perceived Experiences and Impact of Cyberbullying from Students at a Canadian University: A Mixed Methods Study', PhD Thesis, Simon Fraser University, Canada

24. Brown, A. and Short, E. (2011) Cyberstalking: Fear of Physical Confrontation and its Effects on Trauma, IADIS International Conferences Web Based Communities 2011, Collaborative Technologies 2011 and Internet Applications and Research 2011, 285-290

25. Camp, N., C. (2016) 'Restoring Trust: A Grounded Theory Study of Cyberbullying Among Young Women', PhD Thesis, Loyola University Chicago, United States of America

26. Cassidy, W., Faucher, C. and Jackson, M. (2014) The Dark Side of the Ivory Tower: Cyberbullying of University Faculty and Teaching Personnel, Alberta Journal of Educational Research, 60(2), 279-299

27. Cassidy, W., Faucher, C. and Jackson, M. (2017) Adversity in University: Cyberbullying and Its Impacts on Students, Faculty and Administrators, International Journal of Environmental Research and Public Health, 14, 1-19

28. Dressing, H., Bailer, J., Anders, A., Wagner, H. and Gallas, C. (2014) Cyberstalking in a Large Sample of Social Network Users: Prevalence, Characteristics, and Impact Upon Victims, Cyberpsychology, Behavior, and Social Networking, 17(2), 61-67

29. Every-Palmer, S., Barry-Walsh, J. and Pathe, M. (2015) Harassment, stalking, threats and attacks targeting New Zealand politicians: A mental health issue, Australian & New Zealand Journal of Psychiatry, 49(7), 634-641

30. Faucher, C., Jackson, M. and Cassidy, W. (2014) Cyberbullying among University Students: Gendered Experiences, Impacts, and Perspectives, Education Research International, 2014, 1-10

31. Ford, D. (2013) Virtual harassment: media characteristics' role in psychological health, Journal of Managerial Psychology, 28 (4), 408-428

32. Fissel, E., R. and Reyns, B., W. (2019) The Aftermath of Cyberstalking: School, Work, Social, and Health Costs of Victimisation, American Journal of Criminal Justice, 45, 70–87

33. Hafeez, E. (2014) Cyber Harassment & its implications on youth in Pakistan, New Horizons, 8(2), 29-48

34. Hancock, K., Keast, H., and Ellis, W. (2017) The impact of cyber dating abuse on self-esteem: The mediating role of emotional distress, Cyberpsychology: Journal of Psychosocial Research on Cyberspace, 11(2)

35. Hensler-McGinnis, N., F. (2008) 'Cyberstalking victimisation: Impact and Coping Responses in a National Sample', PhD Thesis, University of Maryland, United States of America

36. Holladay, K. (2016) 'An investigation of the influence of cyber-sexual assault on the experience of emotional dysregulation, depression, post-traumatic stress disorder, and trauma guilt', PhD Thesis, University of Central Florida, United States of America

37. Lindsay, M., Booth, J., M., Messing, J., T. and Thaller, J. (2016) Experiences of Online Harassment Among Emerging Adults: Emotional Reactions and the Mediating Role of Fear, Journal of Interpersonal Violence, 31(19), 3174-3195

38. McKennie, S., W. (2017) 'A Phenomenological Study of College Students Subjected to Cyberbullying', PhD Thesis, Northcentral University, United States of America

39. Pashang, S, Khanlou, N. and Clarke, J. (2019) The Mental Health Impact of Cyber Sexual Violence on Youth Identity, International Journal of Mental Health and Addiction. 17, 1119–1131

40. Reveley, K. (2017) '"It's Been Devastating": An Interpretative Phenomenological Analysis of the Experience of being Cyberstalked', PhD Thesis, University of East London, United Kingdom

41. Rivituso, J. (2014) Cyberbullying Victimisation among College Students: An Interpretive Phenomenological Analysis, Journal of Information Systems Education, 25(1), 71-75

42. Saeed, M., Rizvi, M., Saleem, S. and Li, C. (2019) Disasters of Cyber World – A Question on Mental Health, Clinical Research in Psychology, 2(1), 1-6

43. Selkie, E., M., Kota, R., Chan, Y-F. and Moreno, M. (2015) Cyberbullying, Depression, and Problem Alcohol Use in Female College Students: A Multisite Study, Cyberpsychology, Behavior, and Social Networking, 18(2), 79-86

44. Schenk, A., M. and Fremouw, W., J. (2012) Prevalence, Psychological Impact, and Coping of Cyberbully Victims Among College Students, Journal of School Violence, 11(1), 21-37

45. Short, E., Linford, S., Wheatcroft, J., M. and Maple, C. (2014) The Impact of Cyberstalking: The lived experience – A Thematic Analysis, Studies in Health Technology and Informatics, 199, 133-7

46. Short, E., Guppy, A., Hart, J., A. and Barnes, J. (2015) The Impact of Cyberstalking, Studies in media and Communication, 3(2), 23-37

47. Straude-Muller, F., Hansen, B. and Voss, M. (2012) How stressful is online victimization? Effects of victim's personality and properties of the incident, European Journal of Developmental Psychology, 9(2), 260-274

48. Turan, N., Polat, O., Karapirlo, M., Uysal, C. and Turan, S., G. (2011) The new violence type of the era: Cyber bullying among university students; Violence among university students, Neurology, Psychiatry and Brain Research, 17, 21-26

49. Wolford-Clevenger, C., Zapor, H., Brasfield, H., Febres, J., Elmquist, J., Brem, M., Shorey, R., C. and Stuart, G., L. (2016) An Examination of the Partner Cyber Abuse Questionnaire in a College Student Sample, Psychology of Violence, 6(1), 156-162

50. Woodlock, D. (2017) The Abuse of Technology in Domestic Violence and Stalking, Violence Against Women, 23(5), 584-602

51. Worsley, J., D., Wheatcroft, J., M., Short, E. and Corcoran, R. (2017) Victims' Voices: Understanding the Emotional Impact of Cyberstalking and Individuals' Coping Responses, SAGE Open, 1-13

52. Zalaquett, C., P. and Chatters, S., J. (2014) Cyberbullying in College: Frequency, Characteristics, and Practical Implications, SAGE Open, 1-8

53. Khine, A., T., Saw, Y., M., Htut, Z., Y., Khaing, C., T., Soe, H., Z., Swe, K., K., Thike, T., Htet, H., Saw, N., T., Su, M., C., Kaeiya, T., Yamamoto, E. and Hamajima, N. (2020) Assessing risk factors and impact of cyberbullying victimization among university students in Myanmar: A cross-sectional study, PLoS ONE, 15(1), 1-16

54. Melander, L., A., and Marganski, A., J. (2020) Cyber and in-person intimate partner violence victimization: Examining maladaptive psychosocial and behavioural correlates, Cyberpsychology: Journal of Psychosocial Research on Cyberspace, 14(1), Article 1

55. Snaychuk, A., L. and O'Neill, L., M. (2020), Technology-Facilitated Sexual Violence: Prevalence, Risk, and Resiliency in Undergraduate Students, Journal of Aggression, Maltreatment & Trauma, 1-16

56. Villora, B., Yubero, S. and Navarro, R. (2020) Subjective well-being among victimized university students: comparison between cyber dating abuse and bullying victimization, Information Technology & People, Vol. ahead-of-print No. ahead-of-print.

57. Wick, E, S., Nguyen, A., P., West, T., J., Nagoshi, T., C., Jordan, C. and Lehmann, P., College Student Journal, 54(1), 77-87

58. Creswell, J., W. (2008) *A Concise Introduction to Mixed Methods Research*, SAGE Publications Ltd.

59. Tanczer, L., Neria, I. L., Parkin, S., Patel, T. and Danezis, G. (2018) Gender and IoT Research Report: The rise of the Internet of Things and implications for technology-facilitated abuse, https://www.ucl.ac.uk/steapp/sites/steapp/files/giot-report.pdf