



CYBER VICTIMIZATION OF ADULT WOMEN

A SYSTEMATIC REVIEW

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Internet technology has paved new diversion in crime and victimization. There is voluminous data related to cyber victimization of adolescents and college students, however there is dearth of research related to cyber victimization of adult women. The purpose of this systematic review was to investigate the prevalence of cyber victimization of adult women other than by intimate partner or ex-partner and to find out their risk factors as well as consequences. Articles were searched between January, 2010 to April, 2020 from ProQuest, PsycInfo, CINAHL, Web of Science, JSTOR, ASSIA and PubMed databases. A total of 2988 studies were extracted, after initial screening, 140 were left for full text review. A total of 14 studies were finally reviewed and qualitatively assessed according to Standard quality assessment criteria for evaluating primary research papers (Kmet et al., 2004). Three were discarded for not meeting the desired quality rating of $> .75$. Review comprised of multiethnic and multinational sample of 6019 participants, aged between 17 to 68yrs. Results revealed that women are cyber victimized more as compared to males especially sexual victimization is more prevalent among women than men. The important risk factors identified are age, sexual orientation, lack of social support, low self-esteem, control imbalance, opportunity and risky behaviors. Due to cyber victimization emotional distress, pathological ruminations and depression are reported as consequence.

Key words: Cyber-victimization, Adult women, Prevalence, Risk, Depression

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INTRODUCTION

There is no doubt that internet has changed the world (Li et al., 2012). It has paved its way into all aspects of our lives (Madden et al., 2013). That's why it is considered as 'the most significant and pervasive' issue' which is creating problems in schools, workplace and in every social environments (Robinson and Patherick, 2017). It has been reported that internet use in America (Hitlin, 2018) and Canada (Statistics Canada, 2017) among adults ranged to 89% and 84 – 94% respectively. It has not only changed the social interaction rather it has paved new ways of crimes and modes of victimization as well. There are abundant benefits of internet, but some people have discovered some counterproductive (cyber victimization) means as well out of this highly productive technology. The internet provides anonymity to offenders and offenders are making worst use of it. They have access to crime to an extent which is much beyond the traditional offline victimization (Postmes & Spears, 1998; Bartlett, 2013).

Cyber victimization refers to the process of getting victimized through cyber world. The term cyber refers to broader meaning when referring to victimization i.e. any victimization generated through technology (Langos, 2012). It includes victimization both via internet and cellphone. Some researchers while referring to cyber victimization preferred to limit the term cyber to only internet. That's why Robinson & Pathrich (2018) gave the suggestion of using the term *telecommunications* to overcome this problem of terminology so that it could endorse all types of victimization that comes through technology.

Patchin and Hinduja (2012) defines cyber victimization as an *intentional harm* carried out repeatedly through electronic means like text message, blogs, email etc. against which a person is unable to defend himself/ herself. However, Grigg (2010) defined cyber victimization somewhat differently by omitting the term repetition. He defined cyber victimization as an *intentional harm* caused through electronic means to a person or a group of people which is considered by the victim as *offensive, derogatory, harmful or unwanted*. Moreover both criminal (image based sexual abuse like distributing or threat to distribute sexual images without consent, cyber stalking etc.) and noncriminal (name calling, or offensive language etc.) behaviors are all included in the prevalent empirical literature while referring to cyber victimization (Powell, Scott & Henry, 2018).

Moreover in empirical literature different terms were used while referring to different online victimizing behaviors such as cyber bullying (Aoyama et al. ,2012), sexting (Croft et al., 2015), electronic victimization (Fredstrom et al., 2011), electronic aggression (Bennett et al., 2011), cyber aggression (Machmuow et al., 2012), cyber harassment (Beran et al., 2012), online harassment (Lindsay et al., 2016), cyber bullying (Cheng et al., 2011) and internet harassment (Turner et al., 2011).

There is no standard definition of cyber victimization (Cesaroni, et al., 2012) yet. Different researchers defined it differently according to their scope of study. However on the basis of available literature it can be deduced that cyber victimization is an umbrella term, which refers to intentional digital harm or teasing or threats or harassment or masquerading or stalking through electronic media either in the form of text message or pictures or video or audio via chat rooms or emails or phone or websites due to which the person feels uncomfortable, threatened or abused.

It was reported in a study that one third of people who use internet report that they are approached by unknown people through internet and many of them don't feel comfortable about those approaches (Kowalski et al., 2012). In an online survey (Staude-Muller et al., 2012), with 9760 participants, whose ages were between 10 and 50, reported that 68% experience cyber harassment.

Salient features of cyber victimization

There are three main features of cyberbullying victimization identified by Olweus (1999): 1) The perpetrator has intention to harm; 2) There is repetition of victimizing behavior; 3) There should be an imbalance of power between the perpetrator and victim i.e. the victim is unable to defend himself/herself from aggression (Grigg, 2010).

The intent to harm has been widely criticized because intention is something on which court and legal system depends on and consider it as an essential feature (Menesini et al., 2012; Dworkin, 2012) for labeling any act as victimization. However, researchers (Stewart, 2010) categorically reject this notion because the intention of perpetrator is not always to harm rather just the need to control and dominate (Sebella et al., 2013). They argued that it is not just the intention to harm which should be considered as an essential feature while working on victimization rather the perception of the victim regarding that act should be considered as an essential feature of cyber victimization. That's why some researchers while working on victimization just included repetition and imbalance of power over time while defining cyber victimization. (Ybarra et al. 2012)

Types of cyber victimization

Willard (2007) has developed the taxonomy of 7 different behaviors which could be exhibited in cyber victimization: 1) fighting online (*flaming*); 2) Sending offensive messages repeatedly (*harassment*); 3) Stealing personal informations of an individual or group and sharing those electronically with others without the consent of the individual or group concerned (*outing and trickery*); 4) Blocking an individual from friends lists (*exclusion*); 5) Pretend to be a victim and communicate electronically false or inappropriate information as those were from victim (*impersonation*); 6) Stalk someone and send threatening messages repeatedly to person being stalked (*stalking*); 7) Sending nude pictures of another person without his/her consent (*sexting*).

Traditional victimization vs cyber victimization

Traditional victimization and cyber victimization are often reported as similar (Kowalski et al. 2012) but in real there are marked differences between the two.

Cyber world is quite different from traditional world. It is considered as an uncontrolled world (ibid) because here nobody serves as a moderator or intervener when cyber aggression lead to aggressive one. Whereas in real world situation that there are chances that people around may step in to intervene. Moreover in face to face interaction the hurt of victim may deter the perpetrator from proceeding further by having an empathy that his/her action has damaging effect on the victim (Sourander et al. 2010).

Moreover in cyber victimization the term *repetition* conveys a different meaning. In traditional victimization, repetition means the same behavior again and again (Dracic, 2009) whereas in cyber victimization repetition doesn't work in the same way. Here multiple persons can post harmful message to one victim or just one message can be accessed by multiple people (Robinson & Patherick, 2017) for multiple times till it is deleted.

The *anonymity* of perpetrator is also a unique feature of cyber victimization which may cause the feeling of powerlessness in victim (Dooley et al. 2009). The anonymity feature is considered as the most threatening feature which has aggravated cyber victimization more than the traditional victimization (Bartlett, 2013). The anonymous person may do or say something which he/she may not in real face to face interaction. Moreover the anonymity may tend to reduce the factor of empathy (Sourander et al. 2010). In traditional victimization the person has face to face interaction and the perpetrator may get deterred to exceed if he/she finds that his/her behavior has hurt the victim whereas in cyber world that doesn't seem possible.

Accessibility to victim is another unique and different feature of cyber victimization. In cyber world the perpetrator can access the victim 24/7 whenever he/she like to. Moreover the modes of victimization e.g. access to websites or blog gives the perpetrator the access to greater audience as compared to traditional victimization (Kowlaski et al., 2014).

Adverse effects of cyber victimization

Kowalski et al., (2014) in a meta-analysis found that cyber victimization leads to stress and suicidal ideation. Jenaro et al. (2017) and Na et al. (2015) have identified the symptoms of depression and anxiety in cyber victimized sample. Selkie et al. (2015) maintained that victims of cyber victimization experience three times more the symptoms of depression and anxiety as compared to victims of traditional offline bullying.

Women and cyber victimization

Like traditional victimization, gender is an important risk factor in cyber victimization too (Douglass et al., 2018; Beckman et al. 2013). In traditional victimization it was reported that women are victimized more as compared to men (Mellgren et al., 2017; Citron, 2009). In a study on newspaper articles, Citron (2014) interviewed women bloggers and he found too that the use of female names trigger sexualized abuse and a lot of women reported that they had received messages narrating that these women deserve to be raped

UNESCO (2015) in a report on female cyber victimization expressed serious concern over the rise of female victimization through internet. The report maintained that 73% of the women experience online victimization. Moreover 74% of the countries which were included in the sample have failed to take adequate action against this victimization.

Theoretic background

One of the widely researched theory of victimization in the field of criminology is *life style exposure theory* by Hindelang et al. (1978). The perspective of life style exposure theory maintains that demographic differences in victimization are due to differences in lifestyles. People with different ages, gender, occupation etc. have different life styles. Lifestyle refers to 'routine daily activities' at work, home, leisure etc. These routine activities tend to expose one to risky situation that increases the chances of victimization.

Routine activity theory by Cohen and Felson (1979) too referred to these situational factors. Both routine and lifestyle exposure theories seem to address the same, i.e., the '*pattern of routine activities and lifestyle*' which tend to determine the '*opportunity structure*' of crime. They are just using different terms but referring to the same meaning (Meier & Miethe, 1993). The only major difference between the two is that routine activity theory refers to the changes in rate of crime whereas lifestyle exposure theory refers to change of crime in different social groups. However both emphasize the importance of situational factors instead of personality traits. They believe that change in any of those factors can minimize the risk of victimization.

There are three features of routine activities that make one vulnerable to victimization: Motivated offender, exposure to crime and lack of guardian ship. The victim is supposed to be perceived as a suitable target by the offender: 1) If he/she is in close proximity to offender; 2) He/she is considered as attractive target by the offender; 3) There is a lack of guardianship around target/victim.

Proximity

Proximity refers to the physical closeness of victim to areas where potential offenders reside (Cohen et al., 1981). A large empirical evidence is available that support the relationship between proximity and victimization (Miethe & Meier, 1990). In the cyber world it can be attributed to having accounts/log in to different social media sites as studies (Abaido, G. M., 2019) have shown that Instagram and facebook are the most used mediums of social media through which victimization is carried out

Exposure to crime

As proximity refers to the distance between victim and offender, exposure to crime refers to the personal qualities of the victim that make him/her more vulnerable e.g it can be the time spent outside by the person i.e. one's daily routine or lifestyle (Cohen & Cantor, 1980). In cyber world the daily routine of the person determines the frequency of victimization e.g. sharing personal information online to unknown people or to remain online all the time etc. (Miro, 2012).

Cohen and Felson (1979) identified different ecological and symbolic attributes of the victim which make him/her more prone to victimization than others. There are four attributes of the target which identifies the likelihood of victimization: 1) *Visibility* refers to those qualities of the target that offenders consider important for attack; 2) *Inertia* refers to physical aspects of the target e.g. a disabled person is easy to victimized due to less ability to resist; 3) *Access* refers to the place of a target that makes it accessible, e.g. unemployed are more at risk of victimization may be because they live in residential proximity to such places where offenders live; 4) *Value* refers to qualities from offender's point of view i.e what offender considers worth attacking. Routine activities theory of victimization has been seconded by multiple researchers (McNeelay, 2015).

Capable guardianship

Capable guardianship refers to the ability of the person that prevent him from victimization. The presence of more people around in social situation may be more helpful in preventing the person from the act of victimization as compared to being alone in the crime scene. Guardianship doesn't refer to only social dimensions rather the physical dimension of guardianship like guard dogs or burglar alarms etc is equally important and may prevent the act of victimization. There are different options on twitter that a person can employ to save his/her privacy and prevent victimization (Reyns & Fissel, 2019)

METHOD

The aim of this study was to conduct systematic review on the cyber victimization of adult women. It is quite different from traditional literature review. There is difference of methodology (Robinson & Lowe, 2015). Unlike literature review, in this systematic review the focus would be on collecting evidence against precise research questions. For data collection too instead of random search some specified databases would be used through specified search terms. The data would be extracted and analyzed with the help of standardized protocol. The whole methodology would be quite clear and transparent in order to avoid error and bias and could easily be replicated.

Cyber victimization of women has been the objective of a lot of researches and a lot of systematic reviews have also been written. But most of these reviews are related to a particular aspect of victimization, that is, cyber victimization by intimate partner or ex-partner or cyber victimization related to children and adolescent girls (Sarah & Yen, 2018; Kwan et al., 2020; Modecki et al., 2014). However there is a dearth of research and reviews related to adult women victimization in general. It seems researchers might have followed the traditional trend of women victimization, according to which women are victimized more by intimate partners or ex intimate partners (Walby & Olive, 2014) although studies have shown that too that most of the perpetrators of cyber victimization were unknown to the victims (Walker et al. 2013). This review would fill this gap.

Moreover in case of female cyber victimization, a common view is that that cyber victimization decreases with increase of age (Fleming & Jacobsen, 2010) and women victimized by strangers on cyber world are likely to be of younger age group, i.e. from 12 to 24 yrs (Harrell, 2012). However Nilson et al. (2013) maintained that there is no link between age and cyber victimization. So without having empirical synthesis such ambiguities related to demographics of cyber victimization of adult females can't be addressed.

Without having empirical evidence nothing can be planned and implemented by clinicians for the prevention and intervention of victimization adequately. Researchers have already maintained that cyber victimization is more violent as compared to traditional victimization (Bartlett, 2013; Stontag et al., 2011). For clinicians in order to plan assessment and management of victims such a review was needed so that they could have better understanding of the etiology of the issue.

This review would help policy makers to plan for the prevention by developing measures for making the cyber world safer as UNESCO (2015) has advised that steps should be taken for prevention of cyber victimization of women by making the cyber world safer. Without having empirical overview of the situation of adult women nothing adequate could be done.

Design and research method

A systematic review study was carried out. Systematic review was used for getting answer to a specific research questions by collecting all informations related to specific topic on the basis of predefined eligibility criteria (Moher et al., 2015). In order to have clear and unambiguous protocol for the review of quantitative studies, PICO tool (Methley et al. (2014) was used:

P	Population	Adult women
I	Exposure	Cyber victimization
C	Comparison	Not relevant
O	Outcomes	Not relevant

Review questions

To estimate the prevalence, to determine the risk factors, and to summarize the effect of cyber victimization in adult females following review questions were developed:

- 1) What is the prevalence of cyber victimization reported by adult female?
- 2) What are the reported risk factors in the cyber victimization of adult women?
- 3) What is the impact of cyber victimization on adult women?

Search strategy

For this review search through electronic literature was carried out in April, 2019. Literature was searched by using CINAHL, ASSIA, PsychINFO, PubMed, ProQuest, Web of Science and JSTOR databases. These databases were selected for search because these integrate more articles from the area of criminology, psychology, social sciences and health and these are quite relevant to aims of this study.

In order to develop a good understanding for the search terms a hand search of random articles was carried out. For enhancing the search sensitivity, search terms were combined with Boolean operators. Truncations (*) and wild card (?) were used to broaden the search results. Table 1 shows the search terms and searching measures opted for databases search.

Table 1. Concept and relevant search terms used for data search

Concept	Search terms
Women	Female, wom?n
Cyber victimization	Cyber victimi*ation, cyber aggression, cyber harassment , cyber bullying, cyber aggression, online victimi*ation , online aggression, online harassment, online bullying , online aggression , online bullying , cyber bullying, internet bullying, cyber sexting, online sexting, Internet sexting, electronic victimi*ation, electronic bullying, electronic harassment, electronic aggression
Distress	?stres, anxiety, depression, pathology, psychological, psychiatric, disorder, illness, suicide, mental, ailment

The Boolean operator AND was used to make the serach terms separated which will increase the search sensitivity; OR was used to connect synonyms related to search term; *Truncations were used to broaden the search result; ?Wildcard was used for replacement of characters in search terms.

Selection criteria

All articles which were written in English and were published in peer reviewed articles, between 2010 and 2020 and met the selection criteria mentioned in table 2 were included in this review study.

Data extraction (selection and coding)

It was a multistage process. Firstly articles were extracted according to the search terms. A total of 2988 articles were extracted from different data bases (CINAHL, ASSIA, PsychINFO, PubMed, ProQuest, Web of Science and JSTOR). Removal of duplicate articles was done. Those were 53. The title and abstraction screening was carried out with the help of checklist shown in Appendix A. During screening each item was marked as either ‘yes’ or ‘no’ or ‘undecided’. The term ‘undecided’ is considered as yes for inclusion in the full text study in order to avoid missing out of any data/detail. If an article has ‘yes’ on all items that was included in the list of full text review. Those which seemed to match the inclusion and exclusion were saved for further evaluation. After initial screening of abstract it was found that 2795 articles didn’t match the criteria. Most of the articles were not meeting the inclusion criteria of age and gender.

However 275 articles were selected for full articles access. The full text articles were further reviewed against the checklist shown in Appendix B. If the article score yes

Table 2. Table showing selection criteria for articles

	Inclusion criteria	Exclusion criteria
Population	Women above age 17 years	Men, women under age 17 years
Exposure	All articles which were related to cyber victimization of adult women All articles which were related to victimization of adult women and men	Articles which were related to general/ offline /traditional victimization Articles which were explicitly related to intimate partner victimization in the cyber world Articles related to cyber victimization of men only Articles related to only cyber bullying perpetration and not about cyber bullying victimization
Study design Publication type	Published between 2010 -2020 All peer-reviewed, full text articles Published in English articles	Case reports, book chapters, unpublished dissertations, conference proceedings, theoretical papers or reviews. Articles in language other than English

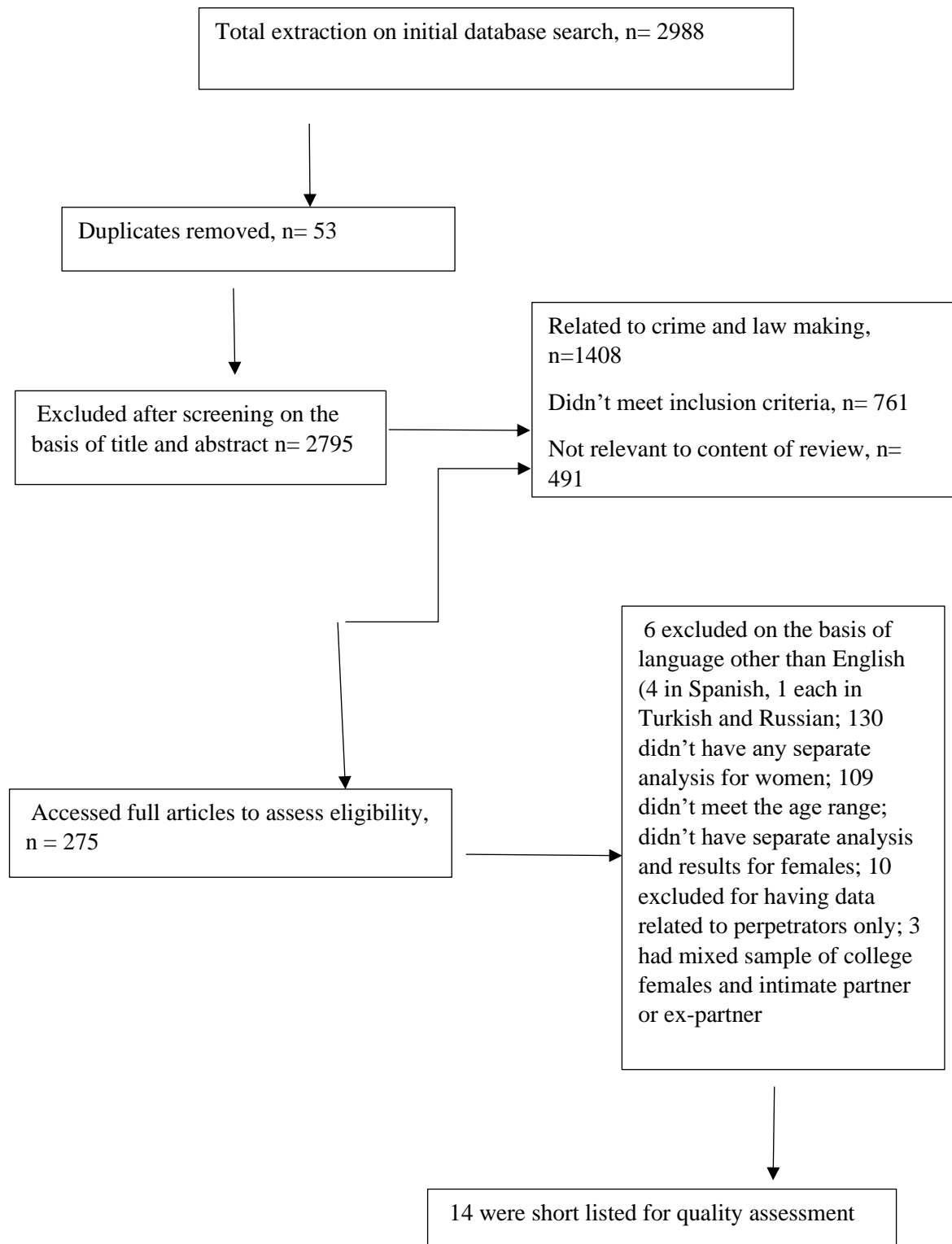
on all items it is selected for quality assessment. It was found that 6 articles were in languages other than English although the article and abstract were in English. 109 didn't have the required range. 130 studies were rejected because those were not having separate statistical analysis for females rather had a composite analysis for both genders was given. More over 3 studies had mixed sample of females who were victimized by intimate partner or ex-partner, 10 were about perpetrators and 2 were on medium of victimization. Finally 14 studies were short listed for quality assessment. The procedure of selection is presented in Figure 1.

Quality rating

Prospective eligibility of each article was retrieved and thoroughly read or reread (if required). Then a quality assessment was done following the Standard Quality Assessment Criteria for Evaluating Primary Research Papers (Kmet et al., 2004). The standard applies two separate review procedures for quantitative and qualitative research. Since all studies extracted for quality assessment were quantitative so quantitative checklist was used. Each paper was evaluated with regards to the quality of the research question, sample, assessment tools, design, analysis, results etc.

Each article was reviewed based on 14 criteria; each scored between 0 and 2, where 0 means not meeting the requirements at all, 1 means partially meeting the criteria and 2 means completely meeting the criteria. Besides the score of 0 to 2, there is one category of N/A as well for the area which is not applicable in the required research. The total score is obtained by dividing the total achieved score with the expected total score (expected score varies from study to study depending on how many quality

Figure 1. Flow chart showing the process of selection of articles



criteria questions, out of 14, are applicable in the research). Studies with a score of .75 or more were considered as reliable.

Total score of each study is obtained by dividing total sum with total possible score. Total sum refers to the score each study achieved by adding score obtained on each domain (aims/objectives, research design etc) whereas total possible score refers to the score achieved by subtracting number of N/A category after multiplying with 2 (total possible sum = number of "N/A" * 2).

The quality of each study is assessed by evaluating on following guidelines:

Was the study objective clearly defined? If it was available in the beginning of the method section or was clearly identified in the introduction of the study then it would get score of 2 but if it was not clearly described in the beginning of the methodology and one got its idea after reading other parts of the research that would get a score of 1, i.e. partially described study question/objective. If there was no clearly defined research questions/objectives than that would be scored 0. N/A would be assigned if it was not required in that research.

Was the research design appropriate for the research objectives/questions? If the design used in the study was according to need of research questions than it would be scored 2 and if it was partially fulfilling the need of research question and was not grossly inappropriate then it would get a score of 1.

Was the sampling carried out adequately and was described adequate as well? If the sampling strategy was clearly described and was unbiased and appropriate than it would get score of 2 but if its sampling strategy was unclear or it seemed to create bias but to an extent that it would not grossly distort results than it would get a score of 1. The score of 0 will be assigned if there was no mentioning of sampling strategy or it seemed that the sample selection was quite biased that it would grossly distort results.

Was the sample described adequately? If the sample was clearly described and the exclusion/ inclusion criteria were clear and appropriate than it would get a score of 2. But if it was partially described and inclusion /exclusion criteria was not clear then that would get the score of 1. If no information about the sampling strategy and detail of sample was available or the sample seemed biased to an extent that it seemed it would distort results that that would be scored as 0.

Was the data collection methods clearly explained? If it was clearly described as how would data be collected, which assessment measures would be used and if the procedure of data collection was appropriate than it would get score of 2 and if it was partially mentioned or was partially clear from methodology section than a score of 1 would be given. Absence of detail regarding data collection will be awarded with 0. Was the data analysis described appropriately? If the analysis were described and were appropriate then a score of 2 would be assigned but if it was not clearly described or were to be guessed through results than it would get the score of 1. In case of absence of any analysis or inappropriate analysis would be scored 0.

Was estimate of variance e.g. standard errors or confidence interval or range reported? If it was reported and was appropriately addressing the research objective that that would be scored 2. But if it was partially reported i.e. some variable in the model were included than that would be scored 1. No information will be scored as 0.

Were the results described sufficiently? If all the major and secondary outcomes were described than that would get a score of 2 and if only some outcomes were described but seemed appropriate than it would be awarded 1. If only the result of sub sample was reported quantitatively or some major outcome was reported only qualitatively than that would be scored as 0.

Were conclusion based on results? If conclusions are relevant to research questions and were based on results that would be scored 2 and if it conclusion were partially supported by the data than it would be scored 1. Absence of conclusion or reporting of conclusion not supported by the data would be scored as 0.

Ethical considerations

Ethics are the main ingredient of any valid and reliable research study. The absence of ethical consideration makes the research material quite invalid and unreliable. However the ethical consideration required for carrying out systematic reviews are rarely emphasized (Vergnes et al., 2010) unlike the Declaration of Helsinki (1964), which every researchers is bind to follow for getting his paper accepted in empirical literature. Although ethical considerations for systematic review have been immensely encouraged by Weingarten et al. (2004) so that unethical review studies (having insufficient ethical standard) could be avoided from being the part of empirical overviews but nothing has been implemented yet. There was a broad consensus of the researchers on the assessment criteria proposed by Weingarten et al. (2004) but still it is not declared as the mandatory part of systematic reviews.

Weingarten et al. (2004) proposed a four point ethical criteria for systematic reviews: First one was related to aims and objectives of the research which included the conflict of interest, financial support, and publication bias of the study; Second is related to the investigator's moral duty; Third was concerned about the rights of the subjects; Last was about the approval of study from ethical committee/board.

All researches included in the systemic review were from peer reviewed scholarly journals and had followed the ethical standards emphasized by Weingarten et al. (2004). Authors had declared that there was no conflict of interest regarding their authorship and publication. All studies had taken approval from their respected ethical boards and committees. Four studies (Feinstein et al., 2014; Gamez-Guadix, et al., 2015; Powell & Henry, 2019 and Reyns et al., 2018) received financial support for their research project and they had declared that. The quality of methodology regarding methodology and results revealed that researchers took care of moral standards and had unbiased approach.

Risk of bias had been qualitatively assessed. It was observed that all studies had clearly mentioned the process of sample selection, exclusion and inclusion criteria

along with drop outs as well. For data collection assessment was carried out through standardized questionnaires. Results were also quite transparent and complete. No selective reporting was observed.

Wager & Wiffen (2011) had identified a couple of ethical considerations as well that reviewer should follow, that is ; 1) the reviewer must avoid duplicate publication, 2) plagiarism must be avoided and 3) if there is any funding for the study then that must be mentioned.

In this review the duplicates were removed carefully and plagiarism was strictly avoided. There was no funding for this review.

RESULTS

Fourteen studies were shortlisted and evaluated for quality. Three of the studies didn't meet the quality criteria of above .75 and were accordingly excluded from this review. The quality rating of included studies and detail of studies is available in Appendix D and E. Four studies achieved the score of 1 on quality evaluation and remaining studies except one got the score of .93. Since all studies had survey design and none was an outcome study so only 8 objectives of quality rating checklist were applicable. All studies included in the review were having high quality. The only study got the score of .87 because in that the sampling strategy was not sufficiently explained as how the participants were approached, which online forums were used. Moreover results were clear quantitatively but were not explained with sufficient detail in the study which got .87. The score of .93 is assigned to studies which have sufficient detail of methodology except with few exceptions of missing detail regarding drop out of data. Overall studies included in the review had high quality.

In this study instead of quantitative analysis, the qualitative analysis of quantitative studies was carried out. There was so much heterogeneity regarding definition of victimization, the age of participants, and assessment tools that it was not possible to have pooled estimate. So instead of quantitative analysis, the qualitative review was carried out because homogeneity of effects is necessary for conducting metaanalysis/quantitative study (Ahn & Kang, 2018).

There were only 2 two studies (Reyns & Fissel, 2019; Reyns et al., 2018), which have women sample only, the rest of the studies have a collective sample of both males and females. Two studies (Ballard & Welch, 2017; Gamez-Guadix) didn't have a separate regression analysis for each gender so those results were not included. However remains of the results of this research were included, but solely, the result section for which separate independent analysis for females was available.

In total there were 6019 female participants represented a multinational sample, included participants from the USA, Canada, Australia, Croatia, Spain, Malaysia and Israel. Four studies (Livazovic & Hem, 2019; Reyns, 2019; Snaychuk, 2020; Tennant, 2015) mainly used the sample of a student population.

6019 participants had an age range of 17 to 68 yrs. and 2811 were college and university students. Most of the studies included in the review have presented detail of sample characteristics for males and females jointly.

Four studies (Gamez-Guadix, 2015; Powell, 2016; Snaychuk, 2020; Zerach, 2015) mentioned the sexual orientation of participants. Most of the sample was heterosexual. Gamez-Guadix reported 89.9 % heterosexual, 5.8 % homosexual and 4.3 % bisexual. Powell reported 87% heterosexual, 5.3% bisexual, 2.7% gay and 2.7% lesbian. Whereas Snaychuk had a sample of 84% heterosexual, 9.4% bisexual and 3% gay. Zerach divided sample into four groups i.e. homosexual men (n=110), homosexual women (n= 114), heterosexual men (n= 35) and heterosexual women (n=88).

The total sample was quite multiethnic, however the majority of the sample comprised of Caucasian and Asians. Ethnicity had been reported by 6 studies (Balakrishnan, 2015; Ballard, 2017; Feinstein, 2013; Tennant, 2015; Reyns et al., 2018; Snaychuk, 2020). Balakrishnan mentioned that 43.3% of the sample was Chinese, 31.3% was Malays, 17% were Indians and 8.4% belonged to other communities. Ballard reported that the majority were Caucasian (83%), 1.3% were Black, 5.3% were multiracial 3.3% each were Hispanic, Asian and others. Feinstein's study sample had 41% Caucasian, 40% Asian, 6% Latino, 5% Black, 3% Middle Easterner, and 4% other. Tennant reported 50% White and 50% other communities (22% African American, 12% Latino, 7% biracial, 6% Asian American and 3% other or unreported ethnicity). Reyns, Fisher & Randa reported 84.8% as White and remaining as non-white. Snaychuk mentioned that there were 58% Caucasian, 18 % belonged to other ethnicities (African, East Indian, First Nations, Asian, Filipino, Mexican, and Pakistani) and remaining didn't mention their ethnicity. Only one study (Livazovic, 2019) reported that 62% of the participants belonged to an urban area and 38% belong to a rural area.

Assessment of cyber victimization

The prevalence of cyber victimization was assessed through self-administered questionnaires. Five studies (Balarkrishnan, 2015; Games-Guadix et al., 2015; Livozovic & Ham, 2019; Powell & Henry, 2016; Reyns & Fissel, 2019) developed scales for cyber victimization, while Ballard & Welch (2015) adapted a previous scale by Olweus (1996) and remaining used the already available standardized tools for measurement of cyber victimization.

Balarkrishnan developed a scale based on the previous work by Li's (2007) and Calvete et al. (2010) scales. Ballard and Welch 2017 adapted a technology-facilitated sexual violence victimization scale based on Olweus bully/victim questionnaire (Olweus, 1996). Feinstein, Bhatia & David (2013) used a modified version of Internet harassment experiences questionnaire (Ybarra, 2004) with Cronbach alpha of .91. Gámez-Guadix et al. 2015 developed an online sexual victimization scale which had a Cronbach alpha of .08. Livozovic & Ham, 2019 developed a scale with a Cronbach alpha of .79.

Powell & Henry (2016) constructed technology facilitated sexual violence victimization scale which had Cronbach alpha of .93. Snaychuk and O'Neill (2020) also used a technology facilitated scale of sexual violence by Powell & Henry (2016) with the Cronbach alpha of .91. Tenant et al. (2015) used Cyberbullying and victimization survey scale by Brown, Demaray & Secord (2010). Zerach, 2015 use Cyberbullying victimization scale (Hinduja & Patchin, 2013) and had Cronbach alpha .93.

Prevalence of cyber victimization

Four studies focused mainly on sexual harassment and sexual victimization (Ballard & Welch, 2017; Gamez-Guadix et al. 2015; Powell & Henry, 2017; Snaychuk & O'Neil, 2020) and one primarily on cyberstalking (Reyns et al., 2018).

Two studies used chi square for the analysis (Feinstein et al. 2013; Powell & Henry, 2016) and two studies (Ballard & Welch, 2017; Tennant et al., 2015) used t-test. One study (Zerach, 2015) used MANOVA. Rest of the studies provided descriptive statistical representation for prevalence. Table 3 showed the details of the analysis and the results. According to five studies (Balakrishnan, 2015; Ballard & Welch, 2017; Livazovic & Ham, 2019; Powell & Henry, 2016; Snaychuk & O'Neill, 2020), more than 50% of the women had experienced cyber victimization. Two studies (Feinstein, Bhatia & Davis; Gamez-Guadix et al. 2013) reported between 36% and 42% respectively.

Ballard & Welch (2017), Feinstein, Bhatia & Davila (2013), Gamez-Guadix et al. 2015; Tennant et al., (2015) Powell & Henry (2016) and had reported that women experience more cyber victimization as compared to men. Gamez-Guadix et al. (2015) further reported that women were asked significantly more as compared to men to send erotic or sexual photos or videos against their will, to reveal erotic or sexual information about themselves without their will and to commit a sexual act online against their will via web cam.

Ballard & Welch (2017) didn't observe higher rates of cyber victimization in women as compared to men but they reported that women and more prone to sexually victimization as compared to men. They identified different behaviors of victimization during multiplayer online games. They reported that victimization was done 52% by name calling 48% of the sample reported of being called with names having sexual meaning, 23% reported sexual harassment and 20% reported exclusion. 11% of the sample reported of being threatened.

Feinstein et al. (2013) while reporting about prevalence of cyber victimization, included both online and text victimization. They maintained that 31% of the total sample (male and female) reported online victimization and 3.7 % reported only text victimization whereas 11.5% reported both text and online victimization. However, women reported more cyber victimization (36%) as compared to men (23%). Powell and Henry (2016) reported in mixed sample (both male and female), the prevalence rate of 62% and did not find any significant difference in the rate of cyber victimization of males and females. However, they have reported that females experience more sexual victimization.

Table 3. Prevalence of cyber victimization in adult women

Study name	Test	Result
Balakrishnan 2015	Descriptive statistics	54% Women experience more cyber victimization than men $\chi^2(1)=2.85$; $p=.09$
Ballard and Welch 2017	Descriptive statistics; t- test	52%; sexual harassment $t(145)=2.94, p <.01$; sexual pursuits $t(145) = 4.62, p < .001$
Feinstein et al. 2013	Chi square	36% Women experience more cyber victimization ($\chi^2(1) = 10.87, p < .001$)
Gámez-Guadix et al. 2015	Descriptive statistics	42% sexual victimization Women experience more sexual victimization than men $\chi^2(1, N=873)=7.43, p < 0.01$
Livazovic and Ham 2019	Descriptive statistics	58%
Powell and Henry 2016	Descriptive; chi square	No difference in men and women in cyber victimization Women experience more sexual harassment ($\chi^2(1, n=563) = 7.586, p < .01$)
Reyns and Fissel 2019	Descriptive statistics	46% than men
Reyns et al. 2018	Descriptive statistics	3.5% cyber stalking
Snaychuk and O'Neill 2020	Descriptive statistics t-test	88% of women experience some form of technology facilitated sexual violence Females ($M=6.90, SD=5.37$) experience more sexual violence as compared to men ($M=3.64, SD=3.73$)
Tennant et al. 2015	T-test	$M=16.55, SD=3.24$; $t(265)=1.65, p > .05$
Zerach 2015	MANOVA	Homosexual women experience more cyber victimization than heterosexual women $M= 2.42, SD = 3.61$ vs $M = .55, SD = 1.24$

Snaychuk and O'Neil (2020) reported that the most common type of sexual victimization was of receiving nay unwanted sexual sexually oriented message, image, email or text. 65% of the total sample (male and female) responded to it as yes and out of those 65%, 73.5% were females. Females specifically more likely than men were forced, multiple times, to send nude or seminude pictures to another person.

Gamez-Guadix et al. (2015) and Zerach (2015) reported that homosexual women experience more cyber victimization than heterosexual women.

Risk Factors of Cyber Victimization

Four studies (Ballard & Welch, 201; Feinstein et al., 2017; Livazovic & Ham, 2019; Powell & Henry) didn't report risk factors separately for the female sample. Since the representation of females in those samples was more than 50% so those results were also included in this review.

Three studies report age as an important risk factor in cyber victimization. Balakrishnan (2015) identified that females aged between 21 – 25 years are victimized more as compared to females with age between 17–20 years and 26–30 years whereas Powell & Henry (2016) reported that females between 18 – 24 yrs were targeted more for cyber victimization. However Gamez-Guadix et al. (2015) maintained somewhat different age range. According to him women between 25 to 34 expereince more cyber victimization and second more victimized age group was 19 to 24 years.

However Livazovic and Ham (2019) and Fisher and Randa, (2018) did not establish any significant difference in the age of victims. For them age is not a significant risk factor.

Gamez-Guadix et al. (2015) and Zerach (2015) reported that homosexual women experience more cyber victimization as compared to heterosexual women. Ballard and Welch (2017) identified game rank as risk factor in the massively multiplayer online gaming world. Game rank referred to the points one earned which playing game. In the gaming world too it was observed that women are more prone to the target of sexually oriented abuse.

Two studies reported that exposure to the cyber world increases the risk of cyber victimization. Females who spend more than two hours online experience more victimization than those who spend less than 2 hours (Balakrishnan, 2015). Similarly Reysn and Fissel (2019) reported that those females who texted regularly experienced more online victimization.

Feinstein et al. (2013) reported that cyber victimization lead to ruminations and these ruminations ultimately resulted in depressive symptoms. They found significant association between ruminations and depressive symptoms. In addition, the indirect effect proposed significant increase in cyber victimization with increase in depressive symptoms through increase in ruminations only in women ($\beta=.03$, bias-corrected 90% CI=[.01, .06], SE=.02). That effect was not significant in men.

Powell and Henry (2016) too reported about the joint sample of male and females that non heterosexual experience more cyber victimization. Moreover youth between 18 to 24 and who spent more time online (2 to 6 hours daily) experience more cyber victimization, however he didn't report about these two variables specifically for women.

Gamez-Guadix et al. (2015) reported that sexting had statistically significant relationship with online sexual victimization ($b=0.77$, $p<0.001$; $OR=2.02$, 95% CI [1.68, 2.77], $p<0.001$). No significant difference between males and females is found in sexting behavior however it was reported that sexting with person one met only online is more strongly related to online sexual victimization. It was further reported that sexting has been observed more (above 63%) in adult having ages between 35 and 45 years.

Table 4. Risk factors of cyber victimization of adult women

Study name	Test	Result
Balakrishnan 2015	Descriptive statistics; chi square	Age (21-25), duration of time spent online
Ballard and Welch, 2017	Regression analysis	Game rank
Gámez-Guadix et al. 2015	Chi square; logistic regression	Age (25-34yrs) Sexting Non heterosexual experience more cyber victimization $OR=2.60$; 95%(CI [1.40, 4.81], $p<0.01$)
Powell and Henry 2016	Chi square	Age (18 -24yrs) Non heterosexual experience more sexual based cyber victimization
Reyns and Fissel 2019	Binary logistic regression	Texting regularly; flirting others online; hook ups with those met online; posting sexual pictures online
Reyns et al. 2018	Generalized structural equation modeling	Opportunity, $Exp(B) = 1.84$ Control deficit, $Exp(B)= 4.436$
Snaychuk and O'Neil 2020	T-test, hierarchical regression	Low social support; low self-esteem; less perceived control
Tennant et al. 2015	Bivariate correlation	Low social support
Zerach 2015	Hierarchical regression; ANOVA	Sexual orientation

Livazovic & Ham (2019) found that peer pressure and lower family life quality are statistically significant risk factors of cyber victimization.

Reyns and Fissel (2019) identified a few risky behaviors i.e., flirting with others and online hook ups with those met online as well as posting sexual pictures online triggered the risk of getting victimized.

Snaychuk and O’Neill (2020) and Tennant et al. (2015) reported low social support as a significant risk factor of cyber victimization. However Snaychuk and O’Neill, in addition, identified low self-esteem and perceived lack of control too as risk factors for cyber victimization. Reyns et al. (2018) reported opportunity variable of routine activity theory and control deficit of control balance theory as a predictor of cyber victimization.

Consequences of cyber victimization

Five studies (Livazovic and Ham, 2015; Powel & Henry, 2016; Snaychuk & O’Neill, 2020; Tennant et al., 2015) have studied the effects of cyber victimization whereas rest of the studies didn’t report about the consequences. Statistical analysis employed by these articles was analysis of variance. Detail of consequences is shown in table 3.

Table 5. Consequences of cyber victimization

Study name	Test	Result
Feinstein, Bhatia and Davila 2013	Series of independent t-test, generalized structural equation model	Ruminations (standardized path coefficient =.08, p=.04) Ruminations associated with depressive symptoms (standardized path coefficient=.36, p<.001)
Livazovic and Ham 2019	ANOVA	Emotional distress
Snaychuk and O’Neill 2020	Hierarchical regression	Depression
Tennant et al. 2015	Multiple hierarchical regression	Depression
Powell and Henry 2016	Chi square	Distressing X ² (1,=584)=48.23, p<.01

However Livazovic and Ham (2015) and Powell and Henry reported emotional distress due to cyber victimization. Furthermore Powell and Henry (2016) maintained that cyber victimization is more distressing for women as compared to men. Snaychuk and Tennant et al. (2015) also reported that cyber victimization causes depression. Snaychuk further reported that the high frequency of technology

facilitated sexual victimization, low self-esteem, poor social support tend to mediate between cyber victimization and depression.

Discussion

Eleven studies were used in this review. All studies have a quality rating of above .80 and all are ethically quite sound. It can be said that the information gathered from those are quite valid and authentic and can be used to reach a confident understanding of cyber victimization of adult women.

The samples in the reviewed articles is quite diversified including representation of multiple nationalities as well as ethnicities. Accordingly studies with a collective sample of male and female population were extracted. The sample characteristics are representative of collective sample except in two studies (Reyns & Fissel, 2019; Reyns et al., 2018) which has only female sample. However this is also a fact that in each study except two (Balakrishnan, 2015; Ballard, 2017) the female population was more than 50%. In a survey by Balakrishnan (2015) there were 202 males and 191 females whereas in the study of Ballard (2017) there were 36 females and 110 males.

For assessing cyber victimization, standardized tools with Cronbach alpha above .70 were used by all studies. A variety of cyber victimization (e.g. cyber harassment, cyber aggression, cyberstalking, sexting, sexual victimization and harassment, recurring sexual harassment and cyberbullying through different platforms (receiving unwanted emails, text messages, photos and videos through internet chat or online interactive games etc. have been assessed in these studies.

The researchers who identified risk factors, in this review, have for the main part used mostly regression analysis while a few (Snaychuk & O'Neill, 2020; Zerach, 2015) have used analysis of variance for exploring risk factors related to women. Since the data related to risk factors of cyber victimization of adult women are to a large extent unavailable, the general predictors of cyber victimization are considered as risk factors of female cyber victimization.

The review maintained that adult women too experience cyber victimization on different internet platforms. They are experiencing more cyber victimization as compared to men. The traditional risk factors of victimization of women like age, gender and minority groups are also salient risk factors here. Besides that lifestyle and daily routine activities along with control imbalances have been reported as important risk factors. Adult women, due to cyber victimization are experiencing emotional distress and depression.

Age and gender have always been a strong risk factor of victimization. Regarding age there is mixed information. According to developmental perspective of victimization, the peak age of offending and getting victimized is 18 to 25 years is (Piquero et al., 2002) and 20 to 24yrs (Perreault, 2015). These theories also maintained that the risk of victimization in general decreases with the increase in age (Perreault, 2015). Three

studies (Balakrishnan, 2015; Gamez-Guadix, 2015; Powel & Henry, 2016) reported age as the significant risk factor but Reynolds et al. (2018) didn't report age as a significant risk factor in cyber stalking victimization, although the sample of their study aged between 18 to 24yrs, which is generally considered by developmental theorists as the peak age of victimization. Gamez-Guadix (2015) identified online sexual victimization more common among 25 to 34 years old people. It seems the age norms of cyber victimization are a little different from traditional offline victimization because here older women data is also reporting victimization.

The difference in prevalence rate can be attributed to the way cyber victimization had been defined in the study and the type of victimization referred to in the study. Reynolds et al. (2018) found the prevalence of 3.4% cyberstalking among female sample. In that study researchers only assessed one type of victimization i.e. cyber stalking. Whereas in another study (included in this review) by Reynolds and Fissel (2019), it was reported that 46% of the females suffer cyber victimization. The data was collected for repeat victimization in different mediums such as sexual advances, harassment, unwanted contact or any online victimization. So different definitions of construct is giving different results.

Multivariate analyses have revealed that women are at higher risk of cyber victimization as compared to men. Powell and Henry (2016) and Snaychuk and O'Neill (2020) have reported 62% and 88% women victimization respectively. It seems the cyber world too is governed by the principles of gendered based norms (Thompson, 2018) and men do not want women to move freely in the cyber world (Drakett et al., 2018). This misogynist culture has been observed in gaming world too (Ballard and Welch, 2017) and otherwise (O'Leary, 2012). It had been maintained in the review studies that women experience more sexual victimization online just for being a woman (Ballard and Welch 2017; Gámez-Guadix et al. 2015; Powell & Henry, 2016; Snaychuk & O'Neill 2020). The power/control that is exerted by informal social institutions perhaps tries to make women conform to dominant cultural norms. If she doesn't do so, she is supposed to be punished by threatening or harming (Brownmiller, 1975). These cultural norms are grounded in sex categories and are misogynist. These are not harmonious to formal social controls e.g. there are cyber laws in most of the countries to condemn and punish cyber victimization but informal controls at one hand condemn and denounce such acts and at the other hold women responsible for triggering such victimization. The same pattern applies to gender-based control in the cyber world where women are expected to follow those gendered-based norms (Thompson, 2018) and are not allowing them to move freely in the cyber world (Drakett et al., 2018).

Zerach (2015) was the only one among review studies who studied the effect of sexual orientation specifically on cyber victimization and he found that women with homosexuality are at more at risk of victimization as compared to heterosexual women. Powell & Henry (2019), too maintained that there was a moderately strong relationship between non heterosexual respondents and offensive messages about sexual identity, gender and sexual harassment. Sexual orientation is one of the individual traits that has always been an important risk factor of both offline and

online victimization. People from minority groups like LGBT experience more hate crime victimization (Iganski, 2001) and same applies to online victimization as well.

Balakrishnan (2015) Reyns & Fissel (2019) and Reyns et al. (2018) have reported that being present in the cyber world and regularly for a longer duration increase women risk of being victimized. For Balakrishnan (2015), females who spent 2 to 5 hours online are more prone to cyber victimization. The presence of women in the cyber world has made them opportunistic for being victimized. Life style theorists (Clarke, 2012) argued that the traits of situations and environment aggravate the chances of victimization e.g. hotspots increases the chances of getting victimized. The availability of a suitable target is considered as an opportunity. Although these theories don't blame the victim, they maintain the view that victims' characteristics are an essential dimension of victimization e.g. availability of individual online increases the risk of cyber victimization.

Women who get involved in risky behaviors like flirting online or posting sexual pictures in the absence of smart and effective internet privacy information increases the risk of victimization (Henson et al., 2011) are also victimized more. Reyns et al., (2018) reported opportunity and control deficits as risk factors of cyber victimization. Opportunity is defined by Reyns et al. (2018) as the time spent by the person online and control deficit is a situation in which one has less control than one can exercise. They tried to identify the role of three theories of victimization i.e. self-control theory, life style exposure theory and control imbalance theory and ended up in deducing that one who has control deficits put oneself in a situation which would provide opportunity to offender to commit victimization. Reyns et al., (2018) didn't find the role of control surplus in getting victimized.

Snaychuk & O'Neill (2020) also identified perceived loss of control and low self-esteem as significant risk factors. Women with these personal traits are more vulnerable to victimization because offenders may perceive these weaknesses and try to exploit them. Due to low self-esteem they may lack the assertiveness to deal such situations become an accessible and attractive target for the offender. Their low self-esteem and low perceived control may serve as 'visibility' factor in terms of routine activity theorists and make her an attractive target for the offender. Hentig (1979), who introduced the concept of victimization, while identifying the determinants of victimization also theorized that perpetrator perceives the victim's inability to deal with attack of victimization and that lead to victimization attack. Snaychuk & O'Neill (2020) however recommended that clinicians should employ more focused assessment techniques for better understanding of cyber victimized clients and should develop plans to boost up the self-esteem and social support of such victims.

However Snaychuk & O'Neill have identified low social support also as a significant risk factor. Tenant et al. (2015) also reported low social support as a risk factor. Low social support can be attributed to lack of guardianship which also increases the risk of victimization. Routine activities theorist maintained that proximity of the target along with its attractiveness (attractiveness from offenders' point of view) and lack of guardianship aggravate the risk of getting victimized.

Most of the risk factors mentioned by the studies in this review are related to the lifestyle or routine of the victims that make women more vulnerable to victimization and provide perpetrator the opportunity to commit victimization.

Due to victimization adult women report significant emotional distress rather some exhibited pathological symptoms of ruminations and depression as well (Feinstein, Bhatia & Davila, 2013). That's why victimization is considered as health issue as well. The mental turmoil woman passes through due to victimization lead to significant emotional distress.

Although the sample of review has wide age range but still it has identified typical pattern of victimization rather worse because with the increase in age, there is no significant decrease in victimization. Women are still facing the same risks and consequences with high prevalence. Since the sample is from different nations it shows that women across the world (same has been observed by UNESCO, 2015) are facing this problem.

Steps must be to make the cyber world safe and secure by taking steps to get women educated regarding cyber security to save themselves from unknown cyber intruders. Policy makers too should try to implement rules for web designer to take responsibility of ensuring safe use of software. Routine theorists also maintained the same that by increasing the 'level of safely precautions' the access to potential victim will reduce and resultantly there will be decrease in victimization (Augustina, 2015).

CONCLUSION

There is dearth of systematic review regarding cyber victimization of adult women. In particular some studies which focused on adult women those too were about intimate partner violence and were not about adult women victimization by people other than partners or ex partners. This review focused on different dimensions of adult women cyber victimization.

Studies which were synthesized in this study were not all having women sample. Since enough literature particularly for women was not available so mixed data was also included in this study with caution to report females related results specifically.

Most of the studies with few exceptions maintained this fact that women experience more cyber victimization as compared to male. However to this all studies were agreed that women experience more sexual cyber victimization online as compared to men. Those women who are non-heterosexual experience more sexual oriented cyber victimization. The study further synthesize that women who spend more than two hours online are more prone to cyber victimization especially if they employ risky behaviors online like flirting online etc. Women with low self-esteem, poor social support and low control are also target of cyber victimization.

Women who were cyber victimized experience distress and some studies even reported pathological symptoms of depression as well. Studies have also reported that

women experience more psychological and emotional distress to cyber victimization as compared to men.

The traditional risk factors of victimization of women like age, gender and minority groups are also salient risk factors in adult cyber victimization. Besides that lifestyle exposure theory and daily routine activities theory along with control imbalance have been reported as important risk factors and explanation of cyber victimization of adult women in the review studies.

LIMITATIONS AND SUGGESTIONS

Due to shortage of time only databases were searched for articles. In order to get clearer picture of adult women victimization, grey literature too should be explored in future.

Only peer reported articles were used in the review, case reports, unpublished dissertations, conference proceedings and theoretical papers too could be extracted for future review in order to get more information as there is not enough literature available in peer-reviewed articles. This may give a better insight into the issue and unveil new different facts.

Since most of the research included in the review have a mixed sample of male and female so there are some information which couldn't be accessed due to unavailability of separate analysis for each gender. Although the sample was quite multiethnic but still the shortage of female population only calls for additional material.

Due to absence of literature regarding adult women population, mixed data was used and the age range identified in the review is collective and not solely representative of women population, thus the result should be taken with caution.

All studies included in the review are quantitative surveys (due to non-availability), the absence of qualitative data has limited the information regarding the topic. Review did disclose that spending more time online increases the cyber victimization but it couldn't explore as is it just the duration that tend to trigger victimization or nature of activity matters too? Qualitative studies are required regarding adult women cyber victimization in order to get in depth knowledge.

There was no longitudinal study thus the developmental course was missing. It couldn't be determined just through surveys that victims are having these adverse effect of distress just because of cyber victimization or they have some life course changes or personality traits that put them in this pathology. Moreover developmental pattern will give more detail in the development of risk factors.

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APPENDIX

Appendix A. Checklist for selection of studies through abstract and title

Title: Author:			
Topic	Checklist item	Article included	
		Yes	No
Population	Adults		
Exposure	Victimization through any cyber technology		
Study design Publication type	Qualitative/quantitative In English language Peer reviewed Not a case report/book chapter/ unpublished dissertation/ conference proceeding/ theoretical paper/ review.		

Appendix B. Checklist for selection of articles for quality assessment

Title:			
Author:			
Topic	Checklist item	Article included	
		Yes	No
Population	Adult females/females above 17 years		
Exposure	Victimization through any cyber technology/ risk factors of cyber victimization/ effects of cyber victimization		
Study design Publication type	Having separate statistical analysis/ results for female sample Qualitative/quantitative In English language Peer reviewed Not a case report/book chapter/ unpublished dissertation/ conference proceeding/ theoretical paper/ review.		

Appendix C. Criteria for assessing the quality of quantitative studies

Criteria	Yes (2)	Partial (1)	No (0)	N/A
1 Question/objective sufficiently described?				
2 Study design evident and appropriate?				
3 Method of subject/comparison group selection or source of information/input variables described and appropriate				
4 Subject (and comparison group, if applicable) characteristics sufficiently described?				
5 If interventional and random allocation was possible, was it described?				
6 If interventional and blinding of investigators was possible, was it reported?				
7 If interventional and blinding of subjects was possible, was it reported?				
8 Outcome and (if applicable) exposure measure(s) well defined and robust to measurement/ misclassification bias?				
9 Sample sized appropriate?				
10 Analytic methods described/ justified and appropriate?				
11 Some estimate of variance is reported for the main results?				
12 Controlled for confounding?				
13 Results reported in sufficient detail?				
14 Conclusions supported by results?				

Appendix D. Quality assessment of studies included in review

Study name	Quality rating score (expected score/ score achieved)
Balakrishnan 2015	0.93
Ballard and Welch 2017	0.93
Feinstein et al.2013	0.93
Gámez-Guadix et al. 2015	1
Livazovic and Ham2019	0.87
Powell and Henry 2016	1
Reyns and Fissel 2019	1
Reyns, Fisher and Randa2018	1
Snaychuk and O'Neill 2020	0.93
Tennant et al. 2015	0.93
Zerach 2015	0.93

Appendix E. Summary of studies included in the review

Author (year); country	Population; sample	Aims; study design	Analysis	Result
Balakrishnan, V. (2015); Malaysia	Malaysian youth; n= 191 (17 – 30yrs)	To investigate the role of age and frequency of internet use on cyber victimization	Descriptive statistics; chi square; binary logistic regression	54% females experience CV; females between age 21 – 25 years are bullied more as compared to females with age between 17–20 years and 26–30 years; those who spent 2 -5 hours (58.3% and 59.8% respectively) daily online experience more cyber victimization(p= 0.021)
Ballard, M. E. (2017); USA	American adults; n=36 (18-52yrs)	To investigate prevalence, demographics and risk factors of cyber victimization during multiplayer online games; online survey	Descriptive statistics; Leven’s test for equality of variance; t- test; stepwise linear regression	52% females report cyber victimization; 94% of females reported they had been cyber victimized by a male at least once; 58 % of the females report that they are victimized by those whom they only know online; females report higher rates of cyber sexual harassment, t(145)= 2.94,p <.01, and excessive sexual pursuit, t(145) = 4.62, p < .001

Author (year); country	Population; sample	Aims; study design	Analysis	Result
Feinstein, B. A. (2013); USA	American adults; n= 565 (18-42yrs); M= 19.55; SD = 2.18	To investigate the association between cyber victimization and depressive symptoms; short term (three weeks) prospective online survey	Descriptive statistics; series of independent t-test; chi Square; linear regression analysis	36 % women experience cyber victimization ($X^2(1) = 10.87, p < .001$); victimization increases ruminations ($b = .08, p = .04$); ruminations increases depressive symptoms ($\beta = .02$, bias-corrected 90% confidence interval (CI) = [.01, .04], SE = .01)
Gámez-Guadix, M. (2015); Spain	Spanish adults; n = 571(18 to 60 yrs)	To explore the prevalence and risk factor of sexting and online sexual victimization;	Descriptive statistics; chi square ; logistic regression	42% of the women report online sexual victimization through sexting; the prevalence of online sexual victimization is higher among females between 18 - 24yrs; women are victimized more by those whom they met online only and have no acquaintance with

Author (year); country	Population; sample	Aims; study design	Analysis	Result
Livazovic, G. (2019); Croatia	Croatian college students; n= 202 (19 – 25yrs)	To study the role of age, gender, family life quality, peer pressure and emotional distress in cyber-victimization; online survey	Descriptive statistics, T- tests, ANOVA, regression analysis	otherwise (OR=2.02; 95 % CI [1.55, 2.63], p<0.001); sexting and online sexual victimization have statistically significant relationship (b=0.77, p<0.001), OR=2.22; 95 % CI [1.50, 3.31], p<0.001 58 % of women experience some form of cyber violence; women share more about their cyber victimization t(257)=-1,98, <0,05, women experience more emotional distress due to cyber victimization

Author (year); country	Population; sample	Aims; study design	Analysis	Result
Powell, A. (2016); Australia	Australian adults; n=1481 (18 – 54yrs)	To investigate experiences of technology-facilitated sexual violence victimization in adults; online survey	Descriptive univariate analyses; chi-square; Post hoc tests (squared standardized Pearson residuals analyses and Bonferroni corrected alpha)	62% of the women experience online sexual victimization at least once; females significantly more likely to report experiencing sexual harassment (X ² (1) = 7.586, p < .01); females aged 18 – 24 report more sexual victimization as compared to older age groups in their lifetime; females were significantly more likely than males to report technology focused perpetration from males only (F = 67.6%, M = 32.9%, p < .001); 68% Females are victimized by strangers
Reyns, B.W. (2019); USA	Undergraduate students from USA; n= 541 (18 – 24yrs)	To investigate repeated online victimization and harassment and the relationship between individual , situational	Descriptive statistics; binary logistic regression	46% of the females’ experience repeated online victimization; 25% reported repeated online harassment; women who texted regularly are at 11 times greater odds for repeated victimization (Exp(B) = 11.20); those who flirted others online have double

Author (year); country	Population; sample	Aims; study design	Analysis	Result
		and behavioral factors on online victimization; online survey		those who flirted others online have double chances of getting repeated victimization (Exp(B) = 1.89); hook up with those who meet online increases the double chances of getting recurring victimization (Exp(B) = 1.96); posting sexual pictures online increases more than double chances of recurring victimization (Exp(B) = 2.59)
Reyns, et al. (2018); USA	American college students, n = 1,987 (18- 24yrs); M=20.35, SD= 1.35	To investigate cyberstalking victimization and its predictors; online survey	Descriptive statistics; generalized structural equation modeling	3.5% female experience cyberstalking victimization; age is a significant predictor of cyberstalking victimization; control deficits is a predictor of cyberstalking victimization; individuals reporting higher scores on the opportunity measure are 85% more likely to have experienced cyberstalking victimization

Author (year); country	Population; sample	Aims; study design	Analysis	Result
				% more likely to have been a victim of cyberstalking, $\text{Exp}(B) = 4.434$; low self-control is a statistically significant predictor of both opportunity and control deficit ($b = .158, 2 B = .673$, respectively)
Snaychuk, L. A. (2020), Canada	Canadian college students; n=91 (18-68yrs)	To investigate the prevalence and effects of technology based sexual violence; survey design	Descriptive statistics; t-test; hierarchical regression	88% of the females experience some form of technology-based sexual violence; these victims experience more depression and have less social support, low self-esteem and less perceived control; cyber victimization is a significant predictor of depressive symptoms
Tennant, J. E. (2015); USA	American college students; n= 152 (18 to 24yrs);	To examine sex differences in the prevalence of cyber victimization and to	Bivariate analysis; t-test; hierarchical regression analysis	No significant gender differences in cyber victimization, $M=16.55$, $SD=3.24$, 9 females experience cyber victimization above 1SD; social support has negative correlation with cyber

Author (year); country	Population; sample	Aims; study design	Analysis	Result
	M = 19.18; SD = 1.21	investigate the role of cyber victimization on depression; survey design		victimization; cyber victimization is a unique significant predictor of depression (R ² = 0.25, F(3, 252) = 28.27, p < .001)
Zerach, G. (2015). Israel	Israeli adults; N = n1+n2= 114+88=202; n1= homosexual women (M=29.40, SD=6.95); n2= heterosexual women	To investigate the effect of sexual orientation on cyber victimization; online survey	Descriptive statistics; ANOVA; MANOVA; Pearson correlation analyses; hierarchical regression	Homosexual women report more cyber victimization as compared to heterosexual women, 2.42(3.61) and .55(1.24) respectively ; sexual orientation is associated with higher level of cyber victimization; sexual orientation predict cyber victimization (F(11,346)=9.01, p < .00)

Author (year); country	Population; sample	Aims; study design	Analysis	Result
	(M=24.91, SD=4.94)			
