

Examining the use
of Virtual Care Interventions
to Provide Trauma-Focused
Treatment to Domestic Violence
& Sexual Assault Populations

Findings of a Rapid Knowledge Synthesis Project

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Conflict of Interest

The authors declare that they have no professional or commercial interests relevant to the rapid synthesis. The funder played no role in the identification, selection, assessment, synthesis or presentation of the research evidence profiled in the rapid synthesis.

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Term	Definition
Cognitive Behavioral Therapy	A broad label for types of psychological therapy(including cognitive processing, stress inoculation exposure, and eye movement desensitization and reprocessing therapies) in which cognitions/thoughts are challenged and changed and coping strategies are developed. Cognitive behavioral therapies are generally accepted as well-supported by robust scientific evidence for reducing symptoms of a number of psychological conditions such as depression, anxiety and post-traumatic stress disorder [1]
Cognitive Processing Pherapy	A type of cognitive behavioral therapy for treating post-traumatic stress disorder in which individuals exposed to violence or other forms of trauma as well as survivors, develop a new understanding of their trauma and associated thoughts in order to reduce associated psychological distress [1]
(Complex) Post-Traumatic Stress Disorder (PTSD)	A psychological condition which is triggered by experiencing a traumatic event and often includes symptoms such as flashbacks, avoidance of traumatic reminders, and anxiety or being ‘on edge. Complex PTSD involves multiple, repeated or chronic traumatic events [1]
Domestic Violence	Any situation where an individual employs abusive behavior to control and/or harm a spouse or someone with whom they have an intimate relationship [2]
Gender-Based Violence	Violence that is committed against someone based on their gender identity, gender expression or perceived gender [3]
Intimate Partner Violence	Physical violence, sexual violence, stalking, or psychological harm by a current or former partner or spouse. This type of violence can occur among heterosexual or same-sex couples and does not require sexual intimacy [4]
Mobile (mHealth)	Internet or technology mediated approaches to provision of health interventions or resources [5]
Sexual Assault	An assault of a sexual nature that violates the sexual integrity and safety of the person at risk[6]
Trauma-Focused Treatment or Therapy	A specific approach to therapy that recognizes and emphasizes understanding how the traumatic experience impacts a person’s mental behavioral, emotional, physical, and spiritual well-being [7]
Primary Care Setting	A setting where one receives basic, everyday health needs. It is the first point of entry into the health-care system. This may include visit to a family doctor, a call to Health Link or an appointment with a therapist [8]
Practitioner	A health worker or professional working within the domestic violence sector providing care and/or supports to individuals and families experiencing domestic violence and sexual assault[9]

Key Messages

Questions

- What is the evidence on trauma-focused virtual care interventions to respond to domestic violence and sexual assault?
- What factors influence the effectiveness, feasibility and acceptability of trauma-focused virtual care interventions to address psychological risk and harm resulting from domestic violence and sexual assault?
- What is the experience of practitioners and clients in using virtual care to provide trauma-focused treatment to diverse populations at-risk of domestic violence and sexual assault in the context of a global pandemic?

Importance of the issue

The COVID-19 pandemic has had a profound impact on the psychological and mental wellbeing of individuals and families, and the incidence of domestic violence and sexual assault has increased since the start of the pandemic [10-12]. Across Canada, calls to domestic violence and sexual assault hotlines increased by 50% - 300% during the COVID-19 pandemic [13]. In Alberta alone calls to sexual assault hotlines during the pandemic have increased by 57% [14]. With the rapid shift to virtual care during the pandemic there is a need to examine the effectiveness feasibility and acceptability of virtual care interventions across a range of diverse domestic violence and sexual assault populations, including interventions that incorporate gender-responsive, cultural, historical and immigration-related approaches to trauma. Towards this end, our knowledge synthesis aims to specifically understand the potential of trauma-focused virtual interventions that can rapidly be used to support domestic violence and sexual assault populations.

Findings

- The rapid evidence review indicated that despite the broad range of negative effects associated with domestic violence and sexual assault, virtual care interventions are scarce and largely limited to online support tools that facilitate empowerment and self-efficacy of individuals who are currently in a violent or abusive relationship.
- Research evidence supports the provision of online psychological therapies for reducing psychological symptoms such as depression, anxiety and post-traumatic stress disorder (PTSD) resulting from domestic violence or sexual assault.
- Findings from the rapid evidence review indicate that treatment provided via videoconferencing is capable of achieving comparable gains that accrue during traditional in-person services. It is also worth noting that when videoconferencing technology is utilized to connect rural clients with distant specialists, the relevant comparison is not in-person services but rather, no psychological services at all.
- In one study that compared the same trauma-focused intervention delivered online/virtually vs. face-to-face found a minimally significant difference in outcome measures for mental health distress for those experiencing domestic violence.
- RCTs comparing videoconferencing and in-person treatment are warranted, and inclusion of larger samples and structured clinical interviews are needed to strengthen conclusions drawn from the research literature. Many of the studies involved a small sample size of which can influence research outcomes.
- There are challenges with the provision of services via videoconferencing regarding the impact of distal services on the therapeutic relationship between practitioner and clients, confidentiality, and patient safety.

- Existing evidence of trauma-focused virtual care interventions (including mobile applications and safety decision support aids) for individuals and families exposed to domestic violence and sexual assault provided little to no knowledge of how these virtual care interventions can be promoted or offered by practitioners in a range of primary care and community settings.
- Some scholars have noted that virtual care interventions (such as mobile applications that support self-efficacy and coping skills) for people experiencing domestic violence and sexual assault is likely to be most effective when used to supplement or facilitate (rather than replace) in-person professional care.
- Stakeholder interviews conducted in Alberta helped to contextualize knowledge from the rapid evidence review and support understanding of the experiences of providers and clients in using virtual care to treat trauma-related symptoms resulting from domestic violence and sexual assault.
- Stakeholder interviews outlined several barriers for virtual care for at-risk populations experiencing domestic violence and sexual assault during a pandemic. These include the practitioners' inability to assess safety in the clients' environment; challenges in making connection with new clients in virtual settings; and the loss of human connection in virtual settings that is vital in healing trauma.
- Stakeholder interviews also highlighted challenges their clients faced in receiving trauma-focused or mental health interventions virtually, such as lack of safe and private space to attend virtual session and barriers with access to technology or reliable internet connection.
- The acceptability and effectiveness of virtual trauma-focused care to a range of populations at risk of domestic violence and sexual assault was also discussed during the stakeholder interviews. Virtual delivery of care is largely accepted by practitioners and clients. However, practitioners underlined some key concerns regarding effectiveness of virtual trauma-focused care. These include the comfort-level and preferences of the client and the practitioner in using virtual approaches of care, and the level of readiness of organizations to adopt virtual care in their practice.

1. Executive Summary

The objectives of the knowledge synthesis are to: (1) conduct a rapid review of existing trauma focused virtual care interventions for the domestic violence and sexual assault population, and the factors influencing their acceptability, feasibility and effectiveness across a range of individuals and families at-risk; (2) conduct stakeholder interviews to understand the particular barriers and challenges with virtual care delivery among practitioners and clients; and (3) provide recommendations to the domestic violence sector for the implementation of trauma-focused virtual care interventions to address growing concerns of domestic violence and sexual assault during the COVID-19 pandemic and beyond.

A rapid review of the literature following the principles of rapid evidence assessment (REA) was undertaken from May–June 2020. REA provides a timely, valid and balanced assessment of available empirical evidence related to a particular policy or practice issue [15]. To contextualize the findings of our rapid review we conducted semi-structured interviews with 24 stakeholders caring for or working with individuals and families at-risk of and experiencing domestic violence and sexual assault in the province of Alberta. Stakeholders include practitioners in the domestic violence and sexual assault sector and primary care settings. All interviews were conducted virtually and lasted approximately one hour. The qualitative, semistructured interviews provided additional insights into the barriers or challenges experienced by practitioners in delivering virtual care to individuals at risk and/or experiencing domestic and sexual violence including survivors during the current COVID-19 pandemic.

The findings from the rapid review demonstrate that despite the broad range of negative effects associated with domestic and sexual assault, vir-

tual care interventions that incorporate trauma-focused treatment are scarce and largely limited to online support tools that facilitate empowerment and self-efficacy of individuals who are currently in a violent or abusive relationship. Available online interventions that incorporate trauma-focused treatment for this at risk group are limited in scope, and effectiveness data are preliminary in nature.

In the interviews, stakeholders shared their experiences and their clients' feedback in using virtual care technology to deliver and receive trauma-focused interventions during the COVID-19 pandemic. The rapid shift to remote delivery of care due to COVID-19 related restrictions was challenging to practitioners and organizations. However, these providers and organizations quickly adapted and provided their clients with virtual support. Several opportunities and challenges to delivering virtual services to domestic violence and sexual assault populations during this pandemic were also identified. The opportunities include (1) providing access to remote communities (2) convenience of virtual services; (3) improving client attendance rates; and (4) giving clients the choice to receive in-person or virtual care. On the other hand, challenges with virtual delivery of care include (1) not being able to afford technology and access to reliable internet connection; (2) the loss of human connection in virtual settings; and (3) safety concerns (e.g. safely accessing care while abuser is in the house). Although, these delivery approaches are acceptable and considered feasible by practitioners, in-person delivery of services were largely considered more effective. Respondents provided further insight and understanding on the role that digital divide and social inequity (e.g. low socio-economic status and language barrier) play in accessing virtual care by a range of population groups.

The knowledge synthesis will provide policy and decision-makers, as well as key knowledge users on our project, with a summary of the knowledge about trauma-focused virtual care interventions for domestic violence and sexual assault populations. There is a high urgency to support individuals and families at-risk and experiencing domestic violence and/or sexual assault during the COVID-19 pandemic as reported rates of both remain high across the globe [16]. ■

2. Purpose & Background

Across the globe, the Coronavirus (COVID-19) pandemic has been linked to increases in domestic violence reports, crisis calls and shelter intakes. Domestic and sexual assault is a form of trauma that can result in significant mental health distress for victims. The presence of domestic violence has significant long-term psychological consequences that range from stress, frustration and anger to severe depression and post-traumatic stress disorder (PTSD) [17]. For children domestic violence related trauma left unrecognized is cumulative and associated with social behavioral, emotional, and cognitive problems, persisting into adulthood [18]. Exposure to domestic violence is associated with a significant risk to children's physical and psychological safety and well-being across the lifespan [19]. Similarly, experiencing sexual abuse is associated with increased risk of mental health problems including PTSD [20].

The COVID-19 pandemic had led to many community agencies and health professionals who previously provided support and/or services to individuals exposed to or experiencing domestic violence or sexual assault, struggling to find ways to reach and support many individuals and families at-risk. Families have also been cut-off from community and support networks. With the rapid shift to virtual care during the pandemic there is a need to examine the effectiveness feasibility and acceptability of virtual care interventions across a range of diverse domestic violence and sexual assault populations, including interventions that incorporate gender-responsive, cultural, historical, and immigration-related approaches to trauma and address systemic discrimination faced by Indigenous, LGBTQI2+, rural, newcomer and other marginalized communities. Moreover, accessing services and supports through virtual mechanisms poses particular barriers for some individuals and families at-risk, including domestic violence

survivors seeking medical attention. For example, issues with confidentiality and privacy may be a challenge during physical distancing and social isolation. Other barriers include unstable internet connection in rural and remote locations, and cultural acceptability and appropriateness of virtual care tools for cultural/ and or ethnic population groups [21].

Virtual care interventions, such as e-mental health programs, designed to reduce trauma induced mental health symptoms among individuals and families either experiencing violence or who are at increased risk, have been developed. However, evidence of their effectiveness and acceptability across a range of diverse domestic violence populations is limited. Furthermore, how to effectively implement virtual care in safely addressing domestic violence and sexual assault whilst physical distancing restrictions remain in place is unknown.

2.1 Review scope

Domestic Violence includes a number of different types of experiences that may reflect different needs for different populations. For example:

- intimate partner violence
- historical and/or intergenerational violence
- childhood sexual abuse
- gender-based violence
- family violence
- lived experiences of Indigenous peoples, refugees and immigrant populations, low income groups, people living with disability, the elderly, and children

The definition of trauma defined here is the experiences that overwhelm an individual's capacity to cope [22].

Sexual assault is any unwanted sexual act done by one person to another. Forms of sexual assault include sexual harassment, sexual abuse, sexual exploitation and rape.

2.2 Review Questions

- What is the evidence on trauma-focused virtual care interventions to address domestic violence and sexual assault?
- What factors influence the effectiveness, feasibility and acceptability of trauma-focused virtual care interventions to address psychological risk and harm resulting from domestic violence and sexual assault?
- What is the experience of practitioners and clients in using virtual care to provide trauma focused treatment to diverse populations at-risk or experiencing domestic violence and sexual assault?

2.3 Methodology

A rapid review of the literature following the principles of rapid evidence assessment (REA) was undertaken from May–June 2020. REA provides a timely, valid and balanced assessment of available empirical evidence related to a particular policy or practice issue [15]. REA is a rigorous and explicit method that avails evidence required for policy and practice recommendations in a short timeframe. The process is characterized by developing a focused research question, a less developed search strategy, literature searching, a simpler data extraction and quality appraisal of the identified literature [23]. A monthly search alert was created using our search terms to allow for notifications of new published literature on the topic. In addition to the REA, we conducted stakeholder interviews with practitioners that serve the domestic violence and sexual assault population in the province of Alberta (see section 2.8).

2.4 Search Strategy

As per our primary objective of this knowledge synthesis to examine trauma-focused virtual care interventions for the domestic violence and sexual assault population, an initial search result of the evidence combining keywords ►

representing trauma-focused interventions, virtual care interventions and exposure to violence (domestic violence, sexual assault, family violence, and related childhood trauma) within the context of a pandemic or epidemic such as COVID-19 yielded a small number of articles. Thus, three comprehensive search strategies were executed by a trained research librarian. The first search strategy was performed using keywords representing the concepts of “remote care delivery” AND “people experiencing domestic violence” AND “COVID 19 or pandemic* or epidemic* or quarantine* or Ebola*”. For the second search strategy the same keywords were used without “COVID 19 or pandemic* or epidemic* or quarantine* or Ebola*”. The third search strategy was executed using keywords representing the concepts “remote care delivery” AND “trauma informed care.” Searches were performed on the following databases OVID Medline, OVID EMBASE, Ovid Global Health, Ovid PsycInfo, Cochrane Library (CDSR and Central), and EBSCO CINAHL. Additional search was also conducted using Google and Google Scholar to identify studies not published in indexed journals. Results were exported to Covidence review management software. Detailed search strategies are available in Appendix 1.

2.5 Screening & Study

Selection Two reviewers independently screened all potential articles assisted by Covidence — a web-based tool aimed to provide support with study identification and data extraction processes. In the case of disagreement, both reviewers read the paper and discussed until consensus was reached. Full texts of eligible articles were independently screened by these two reviewers, and papers were included into this review if they satisfied all of the following inclusion criteria: (1) if they included trauma-informed intervention to individuals and families exposed to or experiencing domestic violence, sexual assault and/or related childhood trauma; (2) if the intervention was delivered virtually; and (3) if the article was published in the English-language.

The first search strategy (virtual care interventions + experience of violence + COVID-19) identified 138 potentially relevant articles. The second search strategy (virtual care interventions+ experience of violence) resulted in 1058 potentially relevant articles. The third search strategy (trauma informed interventions + experience of violence) identified 236 potentially relevant articles. A review of the titles and abstracts resulted in the selection of n=52, n=206 and n=44 articles respectively for full text assessment. The full text was retrieved for all articles, and after a careful review of each article, 21 studies that incorporated trauma focused virtual interventions to support individuals and families exposed to domestic violence, sexual assault and/or related childhood trauma from all three search outputs were included in the review. The PRISMA Flow Diagrams

[24] provide a flow chart for the literature search (Appendix A).

2.6 Quality Review & Data Extraction

The quality of studies was assessed using the Critical Appraisal Skills Program (CASP) quality assessment tools (CASP Systematic Review Checklist, CASP Qualitative Checklist, and CASP Randomized Controlled Trial Checklist) [25]. The developers do not recommend using a scoring system when applying this tool. Thus, included studies were assessed based on the clarity of research objectives, the appropriateness of data collection strategy for the study design, quality of the methodology, whether findings clearly correspond to objectives and if the research is valuable and/or applicable to local settings [25]. ▶

Table 1: Organizations Type, Participants Profile and Service Provision

Organizations	<ul style="list-style-type: none"> • Primary Care Networks (PCNs) • Primary Care Clinics • Women’s Shelters • Networks and Collaboratives addressing gender-based violence • Non-Profit Organizations • Community--based Agencies • School Division
Participant Roles	<ul style="list-style-type: none"> • Directors • Program managers and coordinators • Provisional certified counselors and psychologists • Primary care physicians • Mental health support workers
Types of platforms used to deliver virtual care interventions and supports during COVID-19	<ul style="list-style-type: none"> • Zoom or Zoom Health • Microsoft Teams • Doxy • Google Meets • Telephone
Types of services provided	<ul style="list-style-type: none"> • Group therapy • Individual interventions and services • Family therapy

Two reviewers independently extracted the following information from included studies into a standard extraction form (Appendix B): author(s), publication date, publication type, population studied, country, study setting, type of virtual care intervention, if the virtual care solution was implemented in the context of a pandemic, outcome measures and results, equity considerations and challenges or barriers to implementing the virtual care intervention. This double extraction of information ensured the accuracy of included data and that any relevant information was not missed.

2.7 Qualitative Study: Stakeholder Interviews

To better understand the barriers and challenges that providers might experience in delivering virtual care to individuals at risk of or experiencing domestic violence, sexual assault and survivors; as well as the barriers to access for this population, interviews were conducted with key stakeholders within Alberta. Potential stakeholders working with and serving survivors and individuals at risk and experiencing domestic violence and sexual assault in the province of Alberta were invited to participate in an interview. Interview participants were recruited from existing relationships among the research team. We conducted interviews with 24 stakeholders (see Table 1 below for a summary of organization types and participant profile). All interviews were completed via telephone or video conference and lasted approximately one hour in duration. These interviews have allowed us to contextualize our review findings, ensure that the results are grounded in everyday practice, and provide a different lens to examine current knowledge on this topic.

2.8. Interview Data Analysis

Qualitative data analysis was undertaken by the first and second authors. Interview transcripts and field notes were analyzed in NVivo v.12 using a thematic analysis approach. Codes were consolidated into emergent representative themes in an iterative process throughout coding. Once all qualitative content was

coded, we reviewed the emergent codes and overarching themes all together and mapped them to four themes. Recurrent themes were identified as they emerged from the data, rather than on the basis of researcher preconceptions. Summary of these themes and sub-themes are included in Figure 1.

2.9. Ethical Considerations

This study was reviewed for its adherence to ethical guidelines by a Research Ethics Board at the University of Alberta (REB # Pro00101547). ■

3. Rapid Review Findings

3.1 Trauma-Focused Online Interventions for the Prevention of Domestic Violence and Sexual Assault

Findings from three systematic reviews and three Randomized Control Trial (RCT) studies of internet-based interventions highlighted several important online support tools such as apps for delivering needed safety services to individuals who are highly impacted by domestic violence or sexual assault. These online interventions predominantly focused on women creating a safety and or action plan in the event of a future partner abuse incident, which involves clarifying the choices individuals have for leaving an abusive relationship. Safety planning is defined as a dialogic process that informs and supports an individual exposed to violence or abuse by identifying behaviors they can adopt to increase safety and decrease exposure to violence for themselves and their family (i.e., children) at risk [26]. The educational apps reviewed incorporated psycho education modules about PTSD, stress management, and the impact of trauma on emotions and relationships; as well as aimed to promote self-efficacy and empowerment of individuals to make difficult decisions about leaving an abusive relationship. These educational apps are not considered self-help tools, but rather incorporate a collaborative interface for health professionals and users to interact [27]. Furthermore, it is important to note that all safety decision aids studied were only administered to women exposed to domestic violence IPV or sexual assault.

3.1.1 Internet-based safety decision aids (SDAs):

In their systematic review, Rempel et al. [28] identified eleven interventions focused on personal safety planning that enable women's safety while in an abusive relationship. Of the eleven interventions six interventions focused on personal safety planning that would enable women's safety while remaining

engaged within the abusive relationship; seven interventions focused on safety planning to support women to physically leave an abusive relationship; and four interventions focused on the provision of services and resources to support women in the immediate aftermath of leaving an abusive partner. A more recent systematic review included three studies that provided empowerment and support for women such as self-efficacy and safety decision aids [29]. The authors reported, in one of the included studies 90% of the women left the abusive relationship within a year, and in two of the included studies 78% of the women reported gaining important decision-making and self-efficacy skills [29]. However, none of the interventions reviewed focused on supporting women to "move on" from an abusive relationship and none of the interventions appeared to consider the broader social implications related to DV.

Findings from RCT studies of the following SDAs reported positive outcomes on reduced depression, fear and anxiety, as well as increased self-efficacy.

- iCAN Plan 4 Safety, a Canadian developed personalized safety decision support aid intended to help women assess their particular situation in terms of setting priorities and safety risks through the use of an online platform [30]. The tool also features exercises to help women take care of their health and well-being.
- HELPP (Health, Education on Safety, and Legal Support and Resources in IPV Participant Preferred) intervention is comprised of six modules delivered by e-mail once a week for 6 weeks and focus on education on safety, self-reflection and self-evaluation of risk for mental health distress. When delivering the HELPP intervention online compared to face-to-face there were consistent significant improvements in all outcome measures (i.e., anger, anxiety,

depression, personal and social support) in a random sample of female survivors of IPV who received the HELPP intervention via e-mail and less consistent significant improvements in IPV survivors receiving HELPP face-to-face [31].

- I-DECIDE, an online tool, aims to help women self-inform, self-reflect, and self-manage, and focuses more on healthy relationships, rather than only safety decisions. The intervention consists of three modules: a healthy relationship tool, a safety module and a priority-setting exercise. The healthy relationship tool provided information on a healthy versus unhealthy relationship, and asked women to reflect and rate the health of their own relationship their level of fear, and level of safety using visual analogue scales. This intervention adds to the online counseling techniques of motivational interviewing and non-directive problem solving, and also provides messaging tailored to each women's individual situation (e.g., level of intimate partner violence and danger, and whether the woman has children) and an individualized plan of action that is responsive to a woman's priorities and plans for her relationship (staying or leaving) and location [32]. There was no mention by the authors if the intervention was tested among women from different ethnic cultural or socioeconomic groups.

The authors from these studies concluded that internet-based SDA tools were reported to be safe, acceptable and accessible by its users. Digital SDAs allow both privacy and real-time access to resources and may be appropriate for a hard-to-reach population disclosing information about their experience with violence or abuse. Qualitative findings from the I-DECIDE intervention indicated that participants found the intervention to ►

be supportive and a motivation for action. However there is limited evidence from these studies to suggest that online decision aids can reduce decisional conflict among individuals who are currently in a violent or abusive situation.

3.2 Online Psychological Therapies for Individuals with more Severe Needs Such as Complex Post-traumatic Stress Disorder (PTSD)

Research evidence supports the provision of online psychological therapies for reducing psychological symptoms such as depression, anxiety and PTSD resulting from domestic or sexual violence [27, 29, 32-36], especially when the needs of the person exposed to such violence are complex, severe or delayed (e.g., exhibiting symptoms of complex PTSD, have experienced multiple or ongoing traumas, and/or in victims who have experienced childhood sexual abuse). Effective online psychological therapies in these circumstances include cognitive processing therapy, cognitive behavioral therapy, and telepsychotherapy (e.g., real-time(synchronous) technologies, such as videoconferencing) [29, 37-40]. Trauma-focused treatments were also delivered using a range of virtual technologies such as telehealth, mobile health(mHealth), and videoconferencing [29, 37, 39-46].

3.2.1 Mobile Health (mHealth)

Mobile health (mHealth) technologies are increasingly being used for domestic violence prevention to optimize screening, educational outreach, and linkages to care. Scholars advocating for virtual solutions to reaching domestic violence and sexual assault populations have noted that individuals exposed to such violence and abuse are often isolated by their partners, have limited friendships or social supports, and limited access to social resources; thus increasing global access to digital technologies provides an avenue to search for information, report experiences of violence or receive treatment for domestic violence-related mental health conditions such as anxiety and depression. In one recently published systematic review of mobile (mHealth) interventions, the findings showed that

dropout rates in mHealth interventions were lower than in-person interventions. The authors attributed this to participants feeling more comfortable to disclose their circumstances through virtual mechanisms than in-person [41].

Findings from a formative evaluation of a new trauma-focused smartphone-based mobile application called THRIVE was tested on eight IPV survivors and 16 hospital-based staff (nine health care providers, four social workers, one mental health provider, and three IPV advocates)[47]. Participants were asked to provide feedback on the application's content, design,safety features and applicability. The purpose of the application was to address the unmet health needs and improve the well-being of mothers who have experienced IPV. Thrive includes three sections Myself (maternal self-care, stress coping skills), My Child (stress signs in children,talking to children about IPV, mother-child dyadic communication), and My Life (hospital and community-based resources). This was the only study of an virtual care intervention that included IPV survivors in the development of the application, demonstrating a focus on user or patient-centered care.

3.2.2 Video conferencing & telemental health

Results from primary studies support the effectiveness of videoconferencing as a medium for providing evidence-based trauma-focused treatment to domestic violence and sexual assault populations [41, 44, 48, 49]. Videoconferencing can be used to reach patients with barriers to care that may include stigma, language, and where one lives. In addition, these technologies can be used to deliver empirically-based treatments for PTSD. The Wyoming Trauma Telehealth Treatment Clinic (WTTTC) [29, 44] has been cited as a successful example of a program that delivers trauma-focused treatments using remote videoconferencing to rural survivors of domestic violence and sexual assault. The research team studied the effectiveness and feasibility of using videoconferencing to provide treatment

to rural domestic violence and sexual assault populations. A recent study of the WTTTC recruited 15 participants, who were clients of the clinic and received psychological services via videoconferencing from distal domestic violence and rape crisis centers located in the state of Wyoming. Participants completed measures of PTSD and depression symptom severity and client satisfaction. The authors reported large treatment gains among clients on measures of PTSD and depression symptom severity after receiving psychological services via videoconferencing. Additionally, clients reported a high degree of satisfaction with videoconferencing administered services. Findings from this study suggest that videoconferencing provides an effective means to deliver services to under-served rural domestic violence and sexual assault populations.

The use of telemental health has also been reported to reduce mental health care disparities by increasing access to culturally and linguistically competent clinicians for those living in rural and remote communities [50]. Furthermore, of the studies that examined the effectiveness and feasibility of videoconferencing as a means of delivering trauma-focused treatment to this at-risk population [44, 48, 50] the findings indicate that videoconferencing is capable of achieving comparable gains that accrue during traditional in-person services. However it is worth noting that when videoconferencing technology is utilized to connect rural clients with distant specialists, the relevant comparison is not in-person services, but rather, no psychological services at all.

3.3 Challenges or Barriers to Delivering Virtual Care to Address Domestic Violence and Sexual Assault

Among the studies that identified barriers and challenges to delivering virtual or remote care interventions (n=7), several accessibility barriers were noted. User attrition was identified as potential challenge to implementing web-based applications of domestic violence and sexual assault interventions. Barriers ►

to delivering online or web-based applications to some domestic violence and sexual assault populations, particularly in rural communities, included access to reliable internet or devices such as smart phones, tablets and computers to use the online application [26, 27].

Some scholars have also noted challenges related to privacy, confidentiality and patient safety when using videoconferencing [29, 48], which can be mitigated by creating ethical practice guidelines for professionals delivering the virtual program and conducting comprehensive intake procedures to assure appropriateness for treatment for patients [29, 48]. Specific equity considerations (including language, socioeconomic status, cultural-relevance, geography, and technological access) when delivering virtual/remote care to individuals and families exposed to domestic violence or sexual assault was seldom discussed in the literature; with the exception of studies that examined virtual care delivery in rural and remote settings. However in the most recent systematic review by El

Morr and Layal [29] the authors noted that technology required to participate in virtual care (i.e. computer, tablets, phones) are costly and basic knowledge of IT is beneficial. This creates inequity in access to technology, and a digital divide among some population groups experiencing or at-risk of domestic violence. In particular, these interventions may not be accessible to individuals from lower-socioeconomic statuses and those without basic digital literacy. Additionally, the authors highlighted that women with disabilities immigrant women or Indigenous women were seldom included in these virtual intervention studies [29]. Furthermore, some scholars have noted that internet-based applications and e-mental health programs are likely to be most effective when used to supplement or facilitate (rather than replace) professional care and practitioner-patient engagement. Brigone and Edleson [27] referred to this as ‘supportive accountability’ – where there is an interface between practitioners and clients, and the online tools or programs are not solely approached as a self-help tool. ■

4. Findings from Stakeholder Interviews

4.1. Practitioner and client experience with virtual care delivery during COVID-19

The quick shift to virtual delivery of care during COVID-19 was challenging for many practitioners within the social service sector and primary care. Respondents described how the loss of in-person contact with clients was difficult and technological barriers affected how they delivered care or treatment to clients. Respondents spoke about the additional work they had to undertake to conduct virtual counseling and safety assessment. This is explained by one respondent who described virtual delivery of services as demanding and strenuous:

“Staff are reporting feeling more drained after the session [with clients]... When you have them in person, you have them in your four walls and a closed door. You know exactly what’s happening in the room. But when you’re working with a client remotely, you’re attuned to the environment around them on the screen or over the phone, you’re listening for sounds in their background. You’re looking for unusual body movements, above and beyond the screen.” [P#7]

Similarly, other practitioners stated:

“I think that there’s more energy required from the care provider to find ways to engage people online, to make sure that their environment is ready, and that they don’t have the tools to rely on the same they would in a room. Even to grab a pad and draw something for someone, they have to be able to use the technology just to be able to share a screen.” [P#12]

“I’m able to do maybe five to six clients a day in office, but

over the phone, it’s much more exhausting because there is a lot more talking. There is a lot more checking in, so my numbers are decreasing because I’m burning out.” [P#17]

“I think we have to think about the on-line in terms of caring for the staff, because we all know about Zoom fatigue, right? And there’s something about online counseling that’s very demanding. Spending any amount of time looking at a screen is very draining. When you’re in the room with someone there’s energy that comes from interaction, personal interactions one of those things you can’t put a finger on, but you know when it happens.” [P#18]

Several respondents were concerned about the health and mental well-being of their fellow staff members:

“... staff [need] to take care of themselves, because what tends to happen – you work from the office, you have a time when you quit working, five o’clock, four o’clock, whatever. But what many of us are finding is that that time was blurred when they worked from home.” [P#18]

“I’m a little bit concerned that many of my colleagues are starting to burn out already in the last two/three months.” [P#17]

In addition to having to provide mental health support during COVID-19, practitioners were also grappling with impacts to their personal lives and well-being resulting from the pandemic. Such as the loss of childcare, attending to the needs of family, and other logistical issues when working from home. The following quotes from practitioners

illustrate the ways in which COVID-19 affected them personally:

“Many of the people that work for us have small children. During this time, it was highly, highly stressful for staff.” [P#15]

“...have staff who have not been able to adequately engage in Zoom calls because they have one device in their house and the kid is using it.” [P#3]

“For me the worst part was actually working from home. It was honestly, the people working from home who are in the field of mental health, I noticed my mental health was really impacted.” [P#5]

Practitioners who expressed going through similar circumstances as their clients expressed a deeper understanding and connection to their clients, as one practitioner stated, “going through COVID ourselves because, of course, all of us are going through COVID, it really helped us to understand better what that mass trauma actually looked like and what some of the different stresses are that we need to deal with.” [P#6] Moreover, some practitioners (n= 5) highlighted how uncomfortable or overwhelmed they were with using different modes of technology to provide virtual services to clients:

“I struggle with technology because it’s not natural for me. If all of a sudden, my screen froze I’d be like, I don’t know what to do. It just feels like this big, insurmountable, I have no idea how to troubleshoot or fix this problem.” [P#3] ▶

“For me it’s even just been a struggle to try to all of a sudden now you’re going to do everything on-line, you’re going to rely on these platforms, and if something goes down you have to figure it out. So it’s been quite a challenge.” [P#5]

“For me, as a practitioner, it’s very biased. I don’t think I will be able to adapt easily to being online with people and to carrying about my work in the same way as I do when I’m with people [in person].” [P#8]

In addition to describing their own experience with virtual care, practitioners shared the feedback they received from clients using virtual care. Virtual delivery of services was largely welcomed and perceived positively by clients. For these clients, what was important to them was the ability to continue to receive care and support from a health professional during COVID-19. For example, one respondent illustrated how grateful their clients were to stay connected and to be able to receive support during this difficult time:

“I was even more diligent with [reaching out to clients during] COVID, because it was so new to our workers and also very new to the clients. And I must tell you that the majority of the time, again, it was these responses of complete gratitude and feeling absolutely overwhelmed that somebody cared enough about the family that they reached out to them.” [P#16]

Another respondent added, *“they’ve been really grateful to just have that connection still and that we still are taking the time to meet with them.” [P#10]*

Despite positive feedback from clients on the use of virtual care, it is unclear whether clients felt that remote delivery of care effectively treated their symptoms. According to one respondent, *“the*

feedback that we got from people was very good. Like, they felt that it helped a lot, but what we know from the literature is that there can be a gap between what people say ...and what they enjoyed and what actually improves their symptoms. And I think that’s what it is that we need to understand better.” [P#6]

While some clients reported a positive experience with virtual care, respondents noted that there were clients who were hesitant to use virtual technology. One practitioner explained how some of their clients preferred to wait until in-person appointments resumed instead of receiving virtual care:

“...some people enjoyed it, some people were hesitant but were like, well, we’ll just wait to come until you bring back your in-person services.” [P#10]

Another practitioner added, *“the very small population we’ve had to find some workarounds with that, but others were actually okay to wait until we could come back in person.” [P#7]*

4.2 Organizational changes and service adaptations required to support virtual care delivery during COVID-19

Organizational changes were required to support the fast-paced adoption of virtual care delivery of services in response to quarantine and stay-at-home restrictions imposed in Alberta during the pandemic. Some changes include implementing new organizational policies and procedures, providing employees with training on the use of virtual care platforms, providing important guidelines and tutorials to clients, and adapting services to a secure online platform. As a first step however, most organizations had to ensure their employees were situated safely to work from home; this included providing them with stable internet, equipment and the technology access that they needed. A manager of a community agency states:

Quickly getting laptops sorted, getting them programmed, getting

everything done that way giving staff... We gave them little USBs so that they can put all of their files and stuff on the USB to take home if they’re using their home computers. It was putting protocol in place about, if you’re coming into an office space, what does this look like? So, we had an agency-wide emergency management COVID plan and then each department put in their own little operational procedures or operational guidelines, kind of thing, and came up with some different reports that we might have to do. [P#10]

At the same time, these organizations had to make sure new policies, procedures and guidelines were in place to ensure continuity of work and to be able to provide services in a secure platform. Additional measures were also taken to ensure practitioners were comfortable with online platforms and that they understood the protocols of providing services virtually. Furthermore, written informed consent procedures were adapted to verbal consents by many of the organizations. One practitioner describes the procedures taken by their organization:

“We had to do staff training about how to use the technology and the different platforms, why we chose the certain ones. We did a paper where we had our clinicians and our lawyers pulling together what platforms were okay for what and why, because all these legislative requirements that people [had to be informed]. Some of our staff weren’t really realizing you needed end-to-end encryption and those kinds of things.” [P#12] ▶

Another respondent adds,

“All of our volunteers and staff did training on how to use Zoom. Because at the end of the day, as providers of treatment, we make sure that the room that the client walks into feels like a calm place that is well appointed, that isn’t chaotic, that meets their needs.”[P#3]

As a result of these changes, most of these organizations incurred additional costs to purchase online platforms and equipment needed to work from home. Some organizations lost funding opportunities due to the pandemic context, and others lost employees to voluntary layoffs. A program director of a non-profit organization summarizes the types of costs incurred by their organization

“Estimate over \$25,000. Yes, because I have a large team. I have a team of over 23 individuals and getting everybody set up with a reasonable set-up for their video counseling and phone, the ask that we put out and that we got back, I think at the end of the day is going to be about \$25,000. And that’s not including extra staff time. That’s just for the technology.” [P#7]

4.3. Acceptability and effectiveness of virtual care technology for trauma treatment

Overall, virtual delivery of services and interventions are largely acceptable and perceived as feasible by organizations, practitioners and their clients. One respondent stated, *“We have actually found it to be incredibly successful.... I would suggest that it was easy, it was acceptable[and] it was feasible. For us, it was not an overwhelming piece of work.”* [P#3] On the one hand, some practitioners (n= 5) indicated that some clients found virtual care delivery allowed them to feel comfortable and safe to express how they are feeling. They explained that these clients preferred the option to receive virtual care even after in-person services resumed. Further-

more, most practitioners (n= 15) see the benefits of providing their care virtually, especially for rural and remote clients who experience transportation barriers. Stakeholders (managers, directors and practitioners) indicated that they will continue to offer their services remotely as an option for their clients even if there is not a second wave of COVID-19:

“For the rural and remote, I could see me continuing to do lots of this work virtually. It makes sense for everybody for every reason. Some of it, the urban stuff, I can see me going back to more meetings in person than virtual. Will I have the ability to do virtual meetings within the urban setting? Absolutely. And if that’s what the person chooses, really, what it’s doing is giving that victim another option.” [P#13]

On the other hand, many providers and clients prefer in-person delivery of services and interventions if given the option. Some practitioners (n=7) indicated that some of their clients preferred to meet in-person during the pandemic, and when in-person care resumed they requested face-to-face appointments. One practitioner describes:

“Now that I’m back in clinic most of my patients are, like, I’m not doing phone calls, I want to see your face, I need to see you, and so I have a big enough office that I can easily do it and everyone gets to be safe. So, my patients said it was wonderful hearing my voice, and hearing the advice and our conversations, but missing that last piece of seeing us be able to see our non-verbal, and then going away with our handouts, they really missed that.” [P#5]

In some cases, during COVID-19 restrictions a few practitioners (n=2) had to find a way to accommodate their clients’ needs to meet in-person. One respondent

explains, *“there were some clients that still were not really that comfortable, and really preferred the face-to-face meeting, and so we tried to meet, if that was their need, or especially if they were in high crisis, they really needed to meet face-to-face.”* [P#18]

Two practitioners recognized that virtual care seemed to be readily accepted by new clients, rather than pre-existing clients:

“We’re finding that the people that seem to be asking for [in-person session] are longer term clients that were already in our system and were already used to having a relationship with the counselor. And so, to make that shift to online has been more difficult. Whereas, new clients coming in, their expectations have been different, and they have been quite happy with the online platform.” [P#12]

Although some practitioners (n=3) were confident about the effectiveness of virtual delivery of trauma-informed care, many (n=15) cautioned that it should not substitute in-person care. Given the circumstances surrounding COVID-19, practitioners indicated that virtual delivery of services and interventions were as effective as they could be, however, when possible in-person approaches are quicker and at times more effective. For example, one practitioner stated, *“I think it’s highly effective during a pandemic when people have to be isolated. Once we start loosening restrictions, I think there has to be a combination.”* [P#15]

Another respondent states,

“Under the circumstances, yes, it was a good means of doing it. In an urban setting where everything is good and no COVID, I think that face-to-face interaction and that personal contact is more effective. You can move ahead quicker, is a better way of putting it. Not to say that the ►

virtual one isn't effective, but I think when you do it in person, you get down the road quicker." [P#13]

"Some practitioners (n= 8) specifically used the phrase "one tool in a toolkit" to describe the effectiveness of virtual delivery of trauma-informed interventions and services.

"I think it's one tool. I think there's many tools to be able to provide that trauma care. And I think that it can be provided effectively, and it can be provided efficiently, which we're doing right now. But I think it's one of many ways for families that are isolated, maybe families who for whatever reason aren't able to come to you, or you're not able to come to them, I think it can be very effective. Is that the best way of providing service? I think a lot of us would probably say perhaps not. But I think that it can be also an effective way of providing trauma-related care." [P#18]

Other practitioners suggest that the effectiveness of remote care depends on the provider's experience practice and ability to deliver trauma-informed care virtually.

"The virtual care is just a modality. It's just a means of communication. It's a tool. So, I still think that people that are helping you matter... The hammer can't become the person hammering. It's a tool. You still need an effective carpenter behind the hammer." [P#2]

"I think if you have good trauma informed practice to start with, you continue that trauma informed practice in the work that you're doing, whether it's in person or virtually. And so, our experience has generally been really good." [P#3]

Determining whether virtual interventions were effective also depended on the preferences of clients:

"I think it's effective if that's what the person wants....I think it can actually give some folks another opportunity who may not normally want to come to a space, or may not want to leave their home necessarily, but that gives them more options which is also I think trauma informed." [P#10]

"There are people that do prefer that [virtual care], and you know, I think it's about having multiple avenues to receive service. So, for those who prefer online, have that available, for those who prefer in person, have that available, so there's many doors to walk in to get the service that you need." [P#18]

Some practitioners (n=5) highlight the need for more research, knowledge exchange and training to comment on the effectiveness of virtual delivery of trauma-informed services and interventions.

"I think it would really be doing some back work of, what does it mean to still be trauma informed in this virtual setting? I don't think it means actually just taking these components and putting it here. I don't think that that's it. I think that there needs to be other work involved in that to truly make it trauma informed." [P#10]

"I think, very honestly, I feel like we need to do the research on it because what we were offering especially in the time of COVID-19, was like a stopgap measure. And we essentially provided the best services that we could come up with based on what we already know. But we didn't, just the way that it was designed, have an opportunity

to rigorously look [if] people [are] showing an improvement in their symptoms. I think that we would require more of a systematic, scientific approach to really research whether that is effective." [P#6]

4.4 Opportunities and drawbacks of virtual delivery of trauma-informed interventions and supports

Practitioners identified various opportunities with the virtual delivery of trauma-informed care and treatment. These include the ability to provide access to care for remote communities who may not otherwise be able to receive these services; the convenience it provides in terms of saving time, removing transportation barriers; and maintaining connection with their care provider during the pandemic. Furthermore, some practitioners (n=4) indicated that virtual options reduced the number of no shows and improved clients' attendance rates. Other providers (n=2) added they were able to reduce their wait lists because they could accommodate more clients virtually than they were able to in-person. In addition, some clients are more comfortable with the virtual delivery of services. Below are some quotes from practitioners that highlight opportunities presented by virtual care.

Access to remote communities

"There's a lot of women that are geographically isolated, they may be in communities where they don't have counseling services that specializes in domestic violence. I think would be able to get some of the supports they need virtually that would not necessarily have access to these resources." [P#18]

"I think in remote communities, I think it creates opportunities where it's feasible for face-to-face interventions to occur. I think there probably is an opportunity to at least get some kind of service and support ►

electronically. Again, depending on how remote they are, they may or may not have internet, so they may have to go to a health center or something like that to access the technology.” [P#11]

Convenience

“I think the flexibility is always a strength of this format, flexibility of doing on phone versus in person or over the computer versus in person. So that does... It does give an opportunity for some who aren’t able to find the time to do a round trip, drive downtown, park and then go back home.” [P#17]

“I mean, in the situation where the technology and what not are not a barrier then in theory it does become more accessible and more convenient, a bit more feasible perhaps, to achieve getting help and accessing care.” [P#4]

“I think there’s families where childcare is an issue, and I know that it’s hard to do counseling and therapy with kids running around, and I get that, but it’s going to be easier if you want to put the baby to sleep and be able to do this as opposed to finding sitter where does this child go, you know, who can afford day care? Removing all of those barriers, and book a session at a time when you can actually just do it in the comfort of your own home because of all the other commitments that you have.” [P#18]

The opportunity to create connection when in-person contact is not possible

“If we’re not traveling, we can still get to you. We can still meet you. We can still have that contact, whereas if we didn’t have this virtual intervention

everybody would just be alone.” [P#10]

“Being able to continue the care during this whole pandemic, virtual care has been amazing. Because I don’t know how many people would be able to have lasted this long and gone through everything they have if they hadn’t had an option to, like, you know what this isn’t what we want to do, but you have this option, they’re going to jump on it. The fact that it was there and available really helped people get through some tough, tough times. So that is amazing.” [P#5]

Improved attendance rates and reduced no shows

“Counselors were noting for a bit that they actually had better attendance rates during COVID than they did in person because people are always home. You have no reason to cancel because you’re home.” [P#10]

“The one thing, too, that I have realized from our therapist standpoint is prior to COVID, they weren’t operating with a full caseload. They still had room. You had people who would cancel, you’d have people who would not show up. [...] they don’t have people not showing up to a Zoom meeting.” [P#14]

Virtual delivery of services has created a more comfortable space for some clients

“Maybe [providing our services virtually] is opening it up to people who are not comfortable with accessing an actual physical space.” [P#10]

“I think the opportunities have to do with [the fact that virtually delivered services] are less

scary for a client. [It is less scary for a client] to be able to jump on a Zoom call than to have to come in and actually see somebody in person.” [P#3]

“I think it’s really an individual preference. Some people have expressed that they feel more comfortable, especially if they have diagnoses such as anxiety, to be able to initially develop the relationship with their on-line coach. Other people feel disconnected from not being in person.” [P#1]

Drawbacks of virtual delivery of trauma-informed interventions and supports

Practitioners highlighted multiple drawbacks to delivering trauma-informed care virtually. Their responses are summarized into three categories as following: (1) challenges in accessing virtual care; (2) the loss of human connection in virtual settings; and (3) safety concerns.

Challenges in accessing virtual care

Accessibility to virtual services and interventions was discussed in terms of access to Wi-Fi and technology and the digital divide due to social inequity. Many practitioners (n=15) highlighted the challenges their clients face in their ability to afford laptops, cell phones, desktop computers, stable internet, or even internet at all:

“I think the big barrier right now is that we don’t consider internet connectivity as fundamental right or as a utility. I think that’s really major that in this day and age and particularly in a pandemic environment, connectivity is literally a lifeline for some people. So, that’s a really serious barrier.” [P#9]

“How do we get these services to folks if they don’t have that technology, if they don’t ►

have stable Wi-Fi or any Wi-Fi to access? So, I think it exacerbated that ability to reach out and to connect with others because, yes, all these services are still available but to access them, that just creates a bigger gap.” [P#10]

In some cases, even when an organization is able to provide their clients with the equipment and technology they need, the clients may not be able to access stable internet connection due to their location. One practitioner explains, “For some of our remote and rural communities, even if we could send a client a tablet to be able to connect with us online, they need effective data or Wi-Fi, or whatever it is. And some rural and remote places in Alberta definitely don’t have that.” [P#3]

Financial barriers and poverty also play a role in an individual’s ability to access virtual services and interventions as explained by one respondent, “financially and economically the victim may not have, frankly, a cell phone, or a secure platform by internet or whatever to be able to access virtual care, potentially.” [P#4] For instance, Indigenous, immigrant and homeless clients are socially disadvantaged and experience inequitable access to virtual services. Below are some quotes from practitioners that describe these challenges.

“A lot of the clients that are served in Alberta – 50%, 55% are indigenous women and children. And in their homes and on reserve and even off reserve, whether or not they have the laptops, the internet, Wi-Fi, to be able to access services electronically – I think that would disadvantage them and probably newcomers. So, I think there would be some disparity in terms of access to services if it went virtual. Like, if that was to become the method of counseling.” [P#11]

“We found it a little bit more

difficult [communicating with] women who were ESL on the phone because usually when you’re communicating with ESL families the verbal cues help you to understand what they’re saying, right? Potentially language is a big barrier if you’re not understanding them very well, and so became somewhat challenging to communicate to those families if you were only on the phone or ESL was an issue. Because there’s the gestures, you use all of those to communicate, and when that’s not available it was challenging.” [P#18]

“The massive digital divide that exists amongst our clients. Many of our sex work clients had no access to safe or effective digital means to get in touch with us, or to sustainably be in touch with us enough to be able to do a session online. So, they can call but they’re either living on the street or living unsafely or relying on free hotspots and not having data and all of those sorts of things.” [P#3]

Some respondents (n=5) provided ideas on how this issue of inequity and digital divide can be addressed. One practitioner gave an example of how local businesses in their community donated laptops to those in need. Other providers indicated that it is important to work with the clients, and understand what the needs are for under served populations:

“Our Indigenous brothers and sisters, what about this work, does it work for them? And let’s talk to new immigrants and say does this work, is this right, are you more comforted or less comforted? Does it [provide] you more safety or less safety in terms of emotional safety. Let’s find out from the other side of the table what do they think about [virtually delivered care].” [P#18]

Another respondent spoke about providing trauma-focused treatment that is culturally appropriate for different population groups:

“I think I would suggest that trauma focused treatment and client centered treatment, my definition of what it is means that it has to be specialized and adapted. And so, I think that by creating a co-shared understanding with our client about their context and their world is exactly how we do that work. And I think that we do it to the best of our ability with any client that we work with, trying to understand the specific barriers that our client might walk in the door with and how we can support them to deal with those barriers as well as the content of their trauma.” [P#3]

Loss of human connection in virtual settings

Practitioners identified strengths with in-person care and service provision and mental health interventions that are missed when transitioning to virtual care. These include the need for in-person human connection to healing trauma, the challenges with building new relationships and establishing trust virtually, and the possibility of missing important non-verbal cues when delivering trauma-informed interventions through virtual means.

The value of human connection in healing and the impact of its potential loss in virtual settings was widely recognized by practitioners (n=10). Respondents expressed that human connection helps some of their clients to deal with trauma: “that face-to-face contact seems to matter for clients because we’re dealing with a highly traumatized population.” [P#12] Many practitioners (n=9) think some forms of human connection cannot be transferred electronically and the technology may act as a barrier in ►

this process of healing. The following quotes from practitioners illustrate the importance of human connection in the care experience:

“Our healing is done through relationships, and relationships being face-to-face is incredibly important in the work that we do.” [P#1]

“I think in a client counseling relationship it’s that human connection. And electronically you just don’t get that same human connection. And when you’re talking about trauma, you know, and doing trauma counseling, you’re looking for physiological reactions you’re looking for facial reactions. At times people need some support in being grounded they need a cup of tea or a coffee. They need to take a break.” [P#11]

“You have to wonder, although we’re trying to do the best we can, is providing virtual care really providing that care? Because we’re wired for connection, we’re wired for...when you’re sitting across the table from somebody, I think you can be more empathetic because that person is sitting right in front of you than on computer, you are quite removed. So, are we really providing people with the level of care that is as effective as in office support?” [P#14]

“If I was in a family violence situation, the first thing I think I would need would be just a hug. I can’t even imagine. Or not a hug but I would need to discharge a cry that was so ugly that... I don’t know, I’m too embodied with my own healing journey, and putting me back in my body what has always helped me recover from my own trauma from childhood I’m not sure, from a somatic experience

of crisis living in the body, if we can bypass that humans need to be together to heal. I actually would say I have an opinion on that that they can’t, but I know that that would be very unpopular right now, with the health community.” [P#8]

“Drawbacks are that we’re very relational as human beings. There’s something about coming into a room together and breathing the air together and feeling each other’s energy that I think is lost through virtual interventions. So, I think that’s definitely a drawback of it, but I don’t think it’s insurmountable.” [P#3]

Additionally, the challenges with building new relationships and with establishing trust virtually were identified by practitioners. Some practitioners (n=4) find it difficult to invite new clients, and to gain their trust in a virtual setting. As stated by one respondent: *“If it was a new client who didn’t know you, who you didn’t have that relationship with, it was increasingly difficult to have that in-depth conversation, to have that in-depth interview. That was increasingly difficult on-line.” [P#18]*

Another respondent adds,

“And from a service provider point of view, it’s much harder to build trust over Zoom or over the phone than it is in person. Sometimes, it takes two or three meetings to gain that trust that I could gain in one meeting. It’s colder. I keep going back to the trust and building that relationship. For you to really help someone, they have to trust you and you have to build a relationship, and it’s harder to do virtually than it is to do in person. So, those are all sorts of things that you can overcome, but it just takes a little bit longer.” [P#13]

The possibility of missing important non-verbal cues during a virtual session was also recognized as a potential barrier:

“Over the phone, I don’t have any support around immediate observation, which could be something like I noticed this fist, you made a fist when you were talking about this. Those are usually quite helpful in drawing insight to the immediacy of whatever the content in the conversation is. So that’s a pretty big loss, especially with folks that have been through trauma, it’s much more difficult to maintain attention sometimes. Again, it’s harder to read full body cues if you’re only seeing the face.” [P#17]

“Counseling by phone was a bit scary, because there’s no visual clues. You don’t really know and there’s no ability to read the non-verbal cues. And so, if somebody was sobbing quietly, or just listening quietly, you wouldn’t be able to tell. Like, one of our counselors described it as driving blind.” [P#18]

Safety Concerns

Safety concerns were discussed in terms of practitioners’ ability to assess client’s safety and the concerns for clients’ ability to access virtual services safely. Many practitioners (n=12) indicated that their inability to control the room where the clients are and not being able to see who may be in the same room as the clients contributed to difficulties with safety assessment.

“With domestic violence or sexual violence, I think there are issues in terms of you don’t know who else is in the room. So, you can’t be certain that people are speaking freely. There’s a big difference between having ►

your assaulter within six feet away and being able to talk about how you're doing or how things are. That's definitely an aspect which is different." [P#6]

"Ensuring their safety and confidentiality and accessing the services is probably number one the biggest barrier. How do you ensure that they are able to contact you without alerting the offender or the perpetrator? How do you provide space for say, the victim to talk about what's going on without impacting children who might be listening nearby?"[P#7]

"What happens when you don't know the safety of the environment that the child or adolescent or family is in, but you're having an online conversation, and the security of that? So, if there's an offender or an abuser, what kind of information [can you share]? You have much less control to be able to support a client safely given those circumstances." [P#1]

At the same time, clients may not have private and safe place where they can access virtual services especially if they are quarantined with their perpetrator. For victims of domestic violence, being caught in the act of talking to a practitioner could exacerbate the risk of violence and thus they may choose not to

access services at all: *"I think that was huge and I think if women are home with their abusers, they're not getting that chance to make those calls."* [P#10] Another practitioner adds, *"if I was someone in a relationship right now where I didn't feel safe even expressing any of my concerns, there is no way I would go on even a webinar, listening about domestic violence, if my partner could hear. There is no way."* [P#5]

Another practitioner gave an example of such scenario based on her experience:

"Like this kid who was stuck with her dad. She wanted in-person visits because she knows they would be more confidential than she might be able to pull off at home. She's scared he's listening to her. But when she can come into the exam room and talk to me with the door closed, she knows it's confidential. So sometimes the knowing something is truly confidential there is a safety net in our exam room... Yes, some people can't do on the phone." [P#2]

Furthermore, one practitioner highlighted receiving services and interventions in the same space where the abuse occurs maybe re-traumatizing to the clients:

"I think some people in their places, their living spaces, it's going to be quite triggering and re-traumatizing. Everything around them could be a trigger." [P#17] ■

5. Considerations for Research & Policy

Based on our findings from the rapid evidence review and stakeholder interviews our research team has identified a few considerations for future research and policy decisions on the use of virtual care for domestic violence and sexual assault populations during the current pandemic and into the future.

- Virtual care interventions for this population should not be used to completely replace in-person professional care for trauma and is most effective when used to supplement or facilitate care or supports;
- Most of the research evidence on effective implementation of trauma-focused virtual care has been examined in rural and remote communities. Therefore, guidance from available evidence for how to deliver virtual care interventions across a range of diverse domestic violence and sexual assault populations, including interventions that incorporate gender-responsive approaches to trauma (e.g., cultural, historical, and immigration-related trauma) is not provided. Therefore, further research is needed that examines virtual care interventions from an intersectional lens;
- The findings from our rapid evidence review and the stakeholder interviews demonstrated positive aspects from delivering care virtually to this population. This warrants future research to evaluate a range of virtual care interventions (including e-mental health) across diverse population groups to improve our understanding of their effectiveness and acceptability. This will also strengthen the evidence-base for virtual care solutions that benefit this at-risk population;
- There is strong evidence from RCT trials to support the provision of online psychological therapies for reducing psychological symptoms such as depression, anxiety and post-traumatic stress disorder (PTSD) among individuals exposed to domestic violence or sexual assault. These online therapies can be safely used to support individuals and families in violent or abusive situations; and
- Lastly, there is an urgent need to tackle inequities in digital access to care and treatment. Some policy measures to narrow the digital divide including funding broadband infrastructure and increasing digital health literacy for the most vulnerable clients. ■

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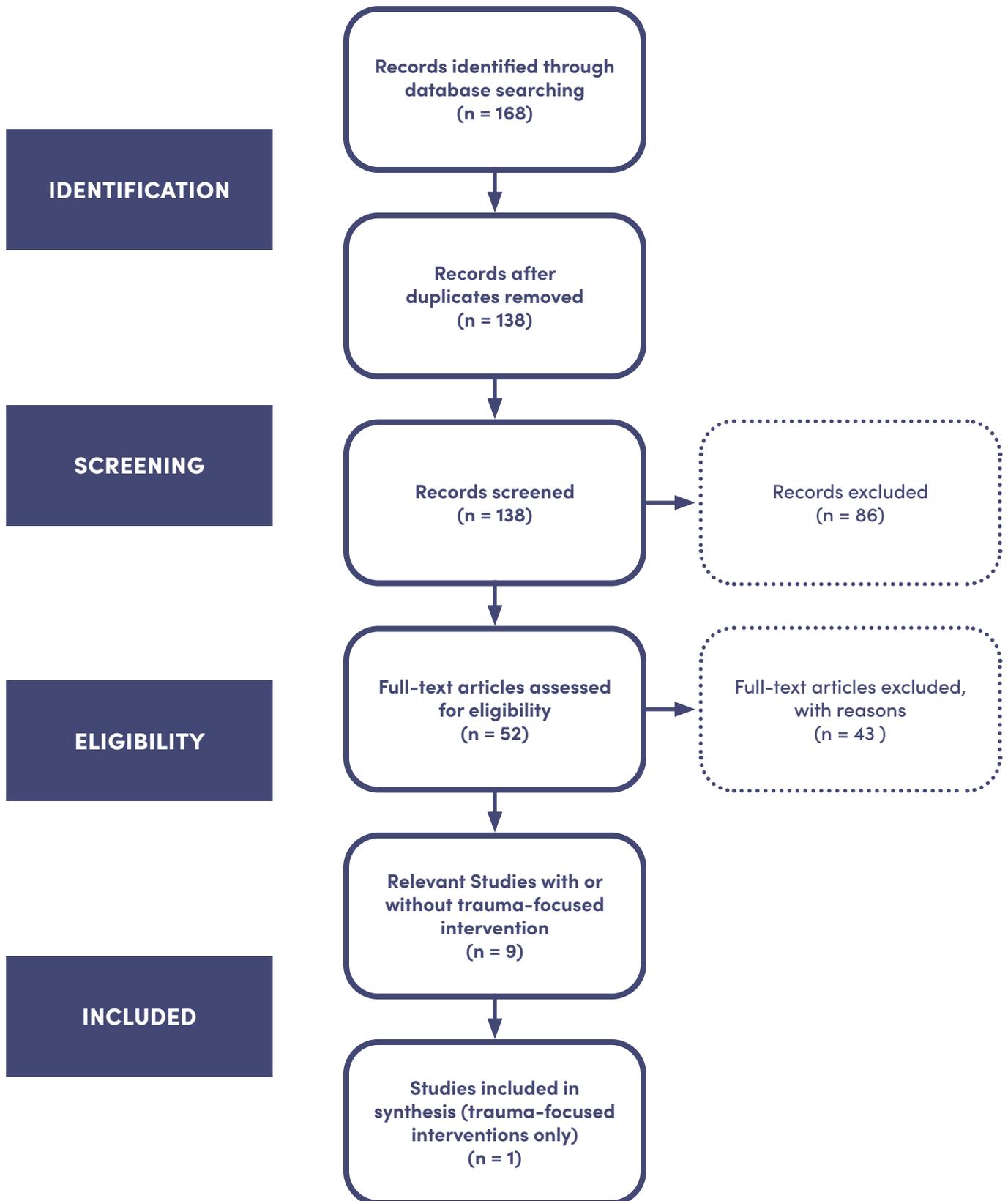
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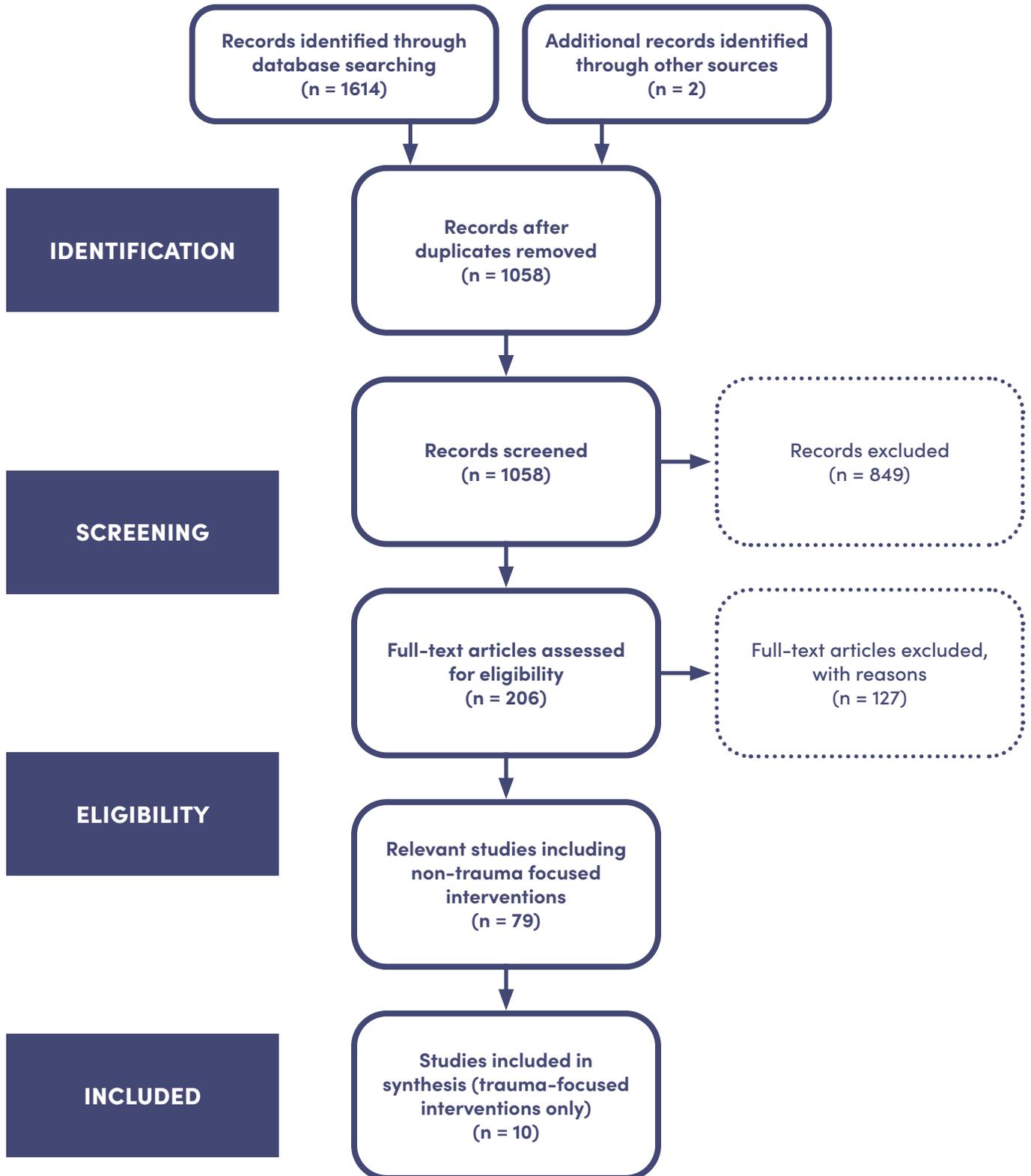
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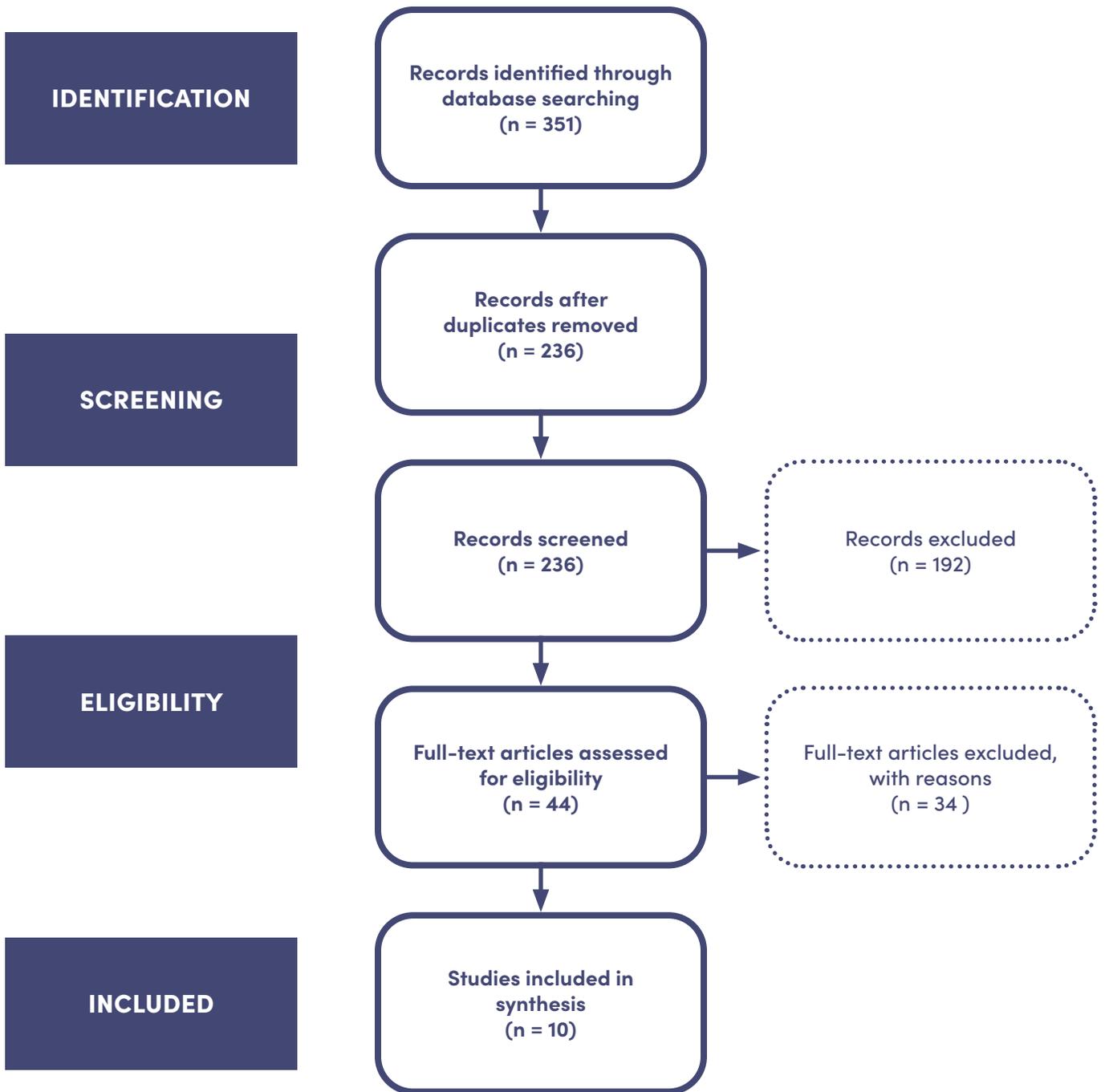
Search Strategy 1: PRISMA Flow Diagram



Search Strategy 2: PRISMA Flow Diagram



Search Strategy 3: PRISMA Flow Diagram



Appendix B: Extraction Table for Rapid Review

Author(s)	Date of Publication	Title	Type of Publication	Population Studied and Country	Setting (e.g., Primary Care, Community)	Virtual Care Intervention/Technology Implemented to Address Domestic Violence and/or Intimate Partner Violence	Outcomes Measured and Results (what do the authors include about the a) acceptability, b) feasibility, and c) effectiveness of the intervention)	Equity Considerations (i.e., gender-responsive approaches to trauma, subpopulation differences, inclusion of vulnerable population groups)	Challenges or Barriers to Implementing Virtual Care to Address Domestic Violence
A n d e r s o n , Krause, Krause, Weber, McClelland, et al.	2019	Web-based and mHealth Interventions for Intimate Partner Violence Prevention: A Systematic Review	Systematic Review	Population of study were adults or youth in romantic relationship (including sex workers, same-sex couples, pregnant and prenatal mothers, perpetrators and victims). The authors did not provide the complete list of countries, however, they indicated that 23 studies were conducted in USA and only one was from low- or middle-income country (Cambodia).	Outpatient medical psychology/therapy Academic/research Community organization	Yes, the systematic review was focused on mHealth interventions for IPV. The authors provide their findings as following: "The most commonly identified mHealth components were web-based educational content that was not responsive to user input (e.g., self-paced, clickthrough tutorials; and interventions where the outcome was dependent on use of computer hardware (e.g., tablet-based screening that automatically flagged a health-care provider)....two studies developed or tested a proprietary or made-for-purpose prevention app (including one proof-of-concept study with no field testing), and no studies used major social media/communication platforms (e.g., Facebook, Instagram, and WhatsApp) to deliver their respective interventions. The remaining studies programmed web- or hardware-accessible platforms (e.g., e-mail) without developing new software (or else did not describe the platform)" (pgs. 4-5). Three interventions included CBT (2 studies delivered CBT through telehealth video and one through web-based system).	The authors state the following: "Feasibility and acceptability were found to be generally high where assessed (23% of studies, n= 7). There was limited evidence around whether mHealth interventions better addressed population needs compared to conventional interventions. mHealth tools for IPV prevention are especially acceptable in health-care settings, on mobile phone platforms, or when connecting victims to health care. Despite enthusiasm in pilot projects, evidence for efficacy compared to conventional IPV prevention approaches is limited. A major strength of mHealth IPV prevention programming is the ability to tailor interventions to individual victim needs without extensive human resource expenditure by providers." (Pg. 1). In general, mHealth interventions are acceptable and feasible in terms of ensuring anonymity, easy access to resources and ability to provide personalized service.	The authors used equity lenses to assess their findings. They reported that interventions that were "victim oriented" was focused only on women (no other genders included), 77% of the interventions indicated they were exclusively delivered in English and only one was delivered in Spanish. Three studies included pregnant women, and three considered cultural adaptation for the included minority women. One study was from low-income country (Cambodia).	The authors indicated that barriers were not clearly described in the included studies. However, they highlight "unacceptable platforms, especially if participants have to download software or learn how to use new hardware" (pg. 10) are potential barriers to implementing mHealth. That being said, dropout rates in mHealth interventions are lower than in-person interventions. This was explained as people are more comfortable to disclose their circumstances virtually better than in-person.

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Bloom, Glass, Case, Wright, Noie & Parsons	2014	Feasibility of an Online Safety Planning Intervention for Rural and Urban Pregnant Abused Women	Evaluation Study	Pregnant mothers at risk of DV in rural and urban area	Community	The researchers used and evaluated a tailored version of the Internet-based safety decision aid. This tool was initially developed with input from IPV survivors, domestic violence advocates, and IPV experts. This tool provides personalized "safety" plan, including assessment of women's safety behaviors, a priority-setting activity, and risk assessment" (pg. 2).	The program was more accessible to urban mothers compared to rural. The authors attribute this to "isolation and/or concerns about privacy, anonymity, or confidentiality may also have increased rural women's reluctance to identify friends or family as safe contacts or to use less private options, such as a computer at a family member's or friend's house, library, or a public health department" (pg. 7).	The study focused on vulnerable population (pregnant mothers, rural pregnant mothers). The tool also includes a feature that is specific for mothers in same sex relationships. However, the authors also highlight that this tool is not accessible to women who are not computer literate or lack Internet or safe computer access, and those who do not know English. That being said, such tools could also be "attractive to women of color is critically important, given that abused pregnant racial minorities are less likely to access help from the formal systems where they might receive safety planning" (pg. 8).	Barrier in accessibility in terms of access to internet or devices (computer, mobile).
Brignone & Edleson	2019	The Dating and Domestic Violence App Rubric: Synthesizing Clinical Best Practices and Digital Health App Standards for Relationship Violence Prevention Smartphone Apps	Evaluation Study	N/A	N/A	This review specifically assessed smartphone apps for dating and domestic violence. In general, the authors indicate that there is important requirement for an app to be eligible to serve DV population that the app's ability to address the safety of users (e.g. put into consideration that the perpetrator may have access to the victim's smartphone). The authors rated all the included apps as low-quality, middle quality and high-quality in terms of performance as apps and their performance as interventions for dating and DV.	The authors indicated that most of the apps included in the study were difficult to find on app store reducing their visibility and accessibility. Also, many of the apps have limited scope (target), i.e. female victims with male perpetrator. In terms of app efficacy, the authors highlight because smartphone apps do not undergo a formal testing process before release, the health- or safety-related quality of their content is not guaranteed (pg. 8). Apps that provide collaborative measures and that are interactive have better health benefits and are used more frequently, thus are rated higher. Examples of these apps are LifeFree, ASK, Youth Pages. On the other spectrum, there are apps that were not properly developed such as Hope and WIC which tend to be more harmful to survivors by providing advice contrary to evidence-based practice. These apps include "victim-blaming language and recommendations to seek couples counseling or anger management" (pg. 9). Therefore, the authors recommend that "app consumers, especially those recommending apps to other potential users, must be meticulous about which apps they recommend" (pg. 9). In terms of App security, some app features such as push notifications, and GPS can put victims at higher risk because the perpetrator can track, access, or view the lock screen of the victim's phone. For this reason, app features such as passwords, hidden panels, no-cost accessibility and the user's ability to disable push notifications, location access, and other features are critically important" (pg. 9).	The authors highlighted gender-gap in interventions currently available through an app (female victim focused). Additionally, they addressed the issue of applicability of intervention content based on the different contexts of users. In this case, apps such as Circle of 6 and Circle of 6 U, LiveFree and Youth Pages were identified as being mindful of "their users, their users' context, the desired outcomes of the intervention and the appropriateness of their theory of change to an app-based platform" (pg. 10).	User attrition was identified as a potential challenge to implementing app-based DV interventions. The authors state, "app-based and other eHealth interventions are likely to be most effective when used to supplement or facilitate (rather than replace) professional care, a concept known as supportive accountability" (pg. 8). In terms of technical quality, the authors state, "smartphone hardware updates and frequent software updates; these may change the display of user interfaces programmed prior to the update and the nature of interfaces with which users expect to interact. As a result, apps that are not regularly updated may experience flaws in their display and outdated interfaces that may no longer be natural to users. These issues affect apps (such as Dadsy) and Over the Line) that in all other ways are considered high quality by this review" (pg. 9). Also, most apps do not store user data with adequate security provisions, which is potentially harmful to the users.

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Constantino, Braxter, Ren, Burroughs, Doswell, Wu, ... & Greene	2015	Comparing Online with Face-to-Face HELPP Intervention in Women Experiencing Intimate Partner Violence	RCT	Female survivors of IPV (who are not living with perpetrator) in Pittsburgh, Pennsylvania, USA	Participant Home (computer)	The intervention group received online version of the HELPP (Health, Education on Safety, and Legal Support and Resources in IPV: Participant Preferred) intervention. The intervention consisted of six modules: (1) Personal Thoughts, Emotions, and Behavior; (2) Interpersonal Relationships and Healing in Telling; (3) Health in HELPP; (4) Education on Safety in HELPP; (5) Legal Matters in HELPP; and (6) Community and the A-B-Cs of Empowerment. These models were delivered through email weekly.	The researchers used the WHO ecological model to assess research outcome. At the personal level they measured for anxiety and depression; at the interpersonal level they measured for anger and personal support; and at the community level they measured for social support and employment. "The HELPP intervention (1) decreased anxiety, depression, anger, and (2) increased personal and social support in the Online group. The HELPP information and intervention was shown to be feasible, acceptable, and effective among IPV survivors compared with participants in the [control] group" (pg. 430).	The researchers enrolled only female survivors (45% Asian, 32% White, and 23% Black). All survivors had protection order against their perpetrators. The survivors had to speak and read English and own a computer with internet connection to be able to participate in this study. Thus, it may not have been accessible to people from lower socioeconomic status or those with language barrier	The authors did not discuss challenges or barriers to implementation; however, they identified some limitations of the study which include: (1) due to the short duration of the intervention (6 wks.) they could not be sure how sustainable the outcomes could be; and (2) they indicate having a follow-up would have provided better understanding of how long the outcomes could last.
El Morr & Loyal	2020	Effectiveness of ICT-based intimate partner violence interventions: a systematic review	Systematic Review	Women who experienced intimate partner violence or domestic violence. Majority of studies were from USA (n=20) followed by Canada (n=3), New Zealand (n=1) and Australia (n=1)	"Different setting (community care clinic, hospital, university, social services) legal facilities"	These researchers reviewed studies that used Information and Communication Technologies (ICT) to provide care and services to women experiencing IPV or DV. They included all types of potential interventions (awareness, screening, prevention, mental health treatment). Six of the 25 included studies used online tools to address the mental health of women experiencing IPV or DV. Within these studies five studies measured depression, three studies measured anxiety and two measured stress. One study in particular addressed the treatment of IPV-related trauma through video conferencing, and measured PTSD outcomes (Note this study is already included in our analysis: Hassija and Gray). The other type of studies included are those that provide empowerment and support for women such as self-efficacy and safety decision aids (n=3). These studies focused on women creating a safety and/or action plan in the event of a future partner abuse incident and two of them also provided additional local resources.	The researchers used the WHO ecological model to assess research outcome. At the personal level they measured for anxiety and depression; at the interpersonal level they measured for anger and personal support; and at the community level they measured for social support and employment. "The HELPP intervention (1) decreased anxiety, depression, anger, and (2) increased personal and social support in the Online group. The HELPP information and intervention was shown to be feasible, acceptable, and effective among IPV survivors compared with participants in the [control] group" (pg. 430).	This review focused on women experiencing DV or IPV, this was not inclusive of all genders. The authors also highlight that given the devices required for the interventions (i.e. computer, tablets, phones) are costly for some individuals, these interventions may not be inclusive of those with lower socioeconomic statuses. Additionally, they indicated given using these interventions would also require basic knowledge of technology, it may not be inclusive of those without basic IT literacy. In terms of diversity of the included participants, the authors claim that immigrant and Indigenous women were not included in these studies. The authors also note that women with disabilities were not included in these studies, and minimal literature was available on ICT intervention accessibility for the population.	The authors highlight this as an actual limitation of the included studies. They indicate that studies do not discuss challenges and barriers to implementing ICT. The authors, however, bring up an important point regarding safety and ethics. They state, "Ethical challenges related to the safety of women increase when women are sharing cell/smart phones with perpetrators; in such contexts special considerations should be taken care of, including "safety by design" [109]. " (Pg. 8)

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Hassija & Gray	2011	The Effectiveness and Feasibility of Videoconferencing Technology to Provide Evidence-based Treatment to Rural Domestic Violence and Sexual Assault Populations	Primary Research	Rural survivors of domestic violence and sexual assault in Wyoming USA	Rural domestic violence and rape crisis centers (Wyoming Trauma Tele-Treatment Clinic (WTTTC))	Female survivors (n=15) of domestic violence and sexual assault were given four sessions of trauma-focused treatment using remote videoconferencing	The authors indicate that the provision of trauma-focused treatment to DV and SA survivors is effective and acceptable because the survivors showed large reductions on measures of PTSD and depression symptom severity following treatment via videoconferencing" (pg. 1). Also, the participants reported "high degree of satisfaction with video conferencing administered services" (pg. 1).	Participants in this study were all female and 80% were white residing in rural Wyoming. Additional information on their socioeconomic, education, employment, etc. status was not provided. Thus, it is not clear if an equity lens was applied in delivering the trauma-focused treatment.	The authors did not specifically discuss implementation barriers; however, they were only able to enroll 15/39 participants into the full study because "clients [were] unable to commit to an extended course of therapy by virtue of relocation, unyielding work schedules, etc." (pg. 3). Which could be considered as a challenge when providing such care to rural residents. Also, the authors highlight that virtual delivery of trauma focused treatment may not be safe for suicidal survivors because of "unclear ability to manage such crises distally" (pg. 5).
Hegarty, Tarzia, Vaipied, Murray, Humphreys, Tafz, ... & Glass	2019	An online healthy relationship tool and safety decision aid for women experiencing intimate partner violence (IDECIDE): a randomized controlled trial	RCT	Women (16-50 yrs. old) in IPV relationships, with safe access to computer/internet and understood English. In Australia	Wherever participants could find safe access to computer/internet	Online interactive healthy relationship tool and safety decision aid (IDECIDE)	"The intervention website consisted of modules on healthy relationships, abuse and safety, and relationship priority setting, and a tailored action plan. The control website was a static intimate partner violence information website" (pg. 301). The hypothesized outcome was that the IDECIDE program would increase self-efficacy and improve depression, fear, and helpful actions. However, results show that the intervention was not effective in comparison with the control group. That being said, the participants in both study arms improved their scores for self-efficacy, depression, and fear of partner over time and had better perceptions of support. The authors state, "evidence to date suggests that in the general population, online interactive intimate partner violence interventions are no more effective than static intimate partner violence websites in reducing women's exposure to violence or victimization, improving mental health symptoms, or strengthening self-efficacy. However, these interventions are acceptable to women and can be safely used. There is a small amount of evidence that online decision aids can reduce decisional conflict, but how useful this outcome is for women remains to be elucidated. Further research is urgently needed into meaningful outcomes and helpful components in online intimate partner violence trials" (pg. 302).	This intervention did not apply equity lens to enrolling participants, the participants were women, with access to safe computer and/or internet, and understood English.	Challenges and barriers to implementation were not discussed.

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Hill, Zachor, Jones, Talis, Zelazny & Miller	2019	Trauma-Informed Personalized Scripts to Address Partner Violence and Reproductive Coercion: Preliminary Findings from an Implementation Randomized Controlled Trial	RCT	English-speaking females, ages 16–29 years in Chicago, Illinois, USA	Family Practice clinic	The virtual care was provided using an interactive app that facilitated discussion between provider and client. Study participants were randomized either into a Trauma-Informed Personalized Scripts (TIPS)-Plus or TIPSbasic. Both study arms received an app prompted tailored provider scripts, and those in the (TIPS)-Plus received psycho educational messages in addition. The app randomized individual participant either study arm. “then presented questions about the patient’s sexual/reproductive health and experiences with IPV and RC; her responses triggered a series of specialized scripts. These scripts would prompt the provider to discuss specific topics, such as fear, safety, harm reduction strategies, and universal education about IPV/RC, without necessitating disclosure during the visit; only the scripts, not the patient’s specific responses, were shown to the provider. Patients assigned to TIPSplus also received psychoeducational feedback on healthy/unhealthy relationships while answering questions on the tablet-based app. The messages were embedded into the app and tailored to their responses” (pg. 2).	To be clear this study aimed to assess the effectiveness of the app in prompting discussion between provider and client on sensitive topics such as IPV. In that sense, the researchers did not find statistically significant difference in disclosure of IPV by participants in either study arm. They indicate, “the lack of significant findings points to the extraordinary barriers patients have to overcome to initiate a conversation about harmful partner behaviors, including fear of judgment by providers, fear of retribution by a partner, and societal stigma more generally” (pg. 870). However, they note that their research can contribute to “the larger evidence base on how to utilize apps to provide patients with personalized, tailored, health education messages” (pg. 872).	Participants were all young female (16 - 29 years old); 70% were white and all spoke English.	Barriers and challenges with implementation were not discussed

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Jones, Shealy, Reid-Quinones, Moreland, Davidson, López, ... & de Arellano	2014	Guidelines for Establishing a Telemental Health Program to Provide Evidence-based Therapy for Trauma-Exposed Children and Families	Other	Youth and Families exposed to trauma, South Carolina, USA	Not specifically discussed, but this paper is more focused on providing guidelines for how to setup evidence-based trauma-focused tele-mental health.	Guidelines on how to setup, use and deliver trauma focused, cognitive-behavioral therapy (TF-CBT) via telemental health videoconferencing, technology through an existing community outreach program is discussed in this paper.	There is no discussion of outcomes because this is a guideline. However, it may be important to include here the recommended guidelines and the background of the community outreach program that participated in this program development and delivery. "The Community Outreach Program- Esperanza (COPE) is a community-based program in South Carolina that provides evidence-based, trauma-focused assessment, therapeutic interventions, and referral for youth ages 4-18 and families who have experienced a range of traumatic events" (pg. 3). COPE serves a range of underserved communities, however, was not able to reach some families who live far from the center. Therefore, they introduced encrypted, confidential videoconferencing technology to serve more people in need. Based on the experience of COPE in delivering remote trauma focused care, the authors provided the following guidelines for setting up telehealth services: (1) Make sure to establish and/or utilize partnership with communities in need; (2) Ensure to have a clear understanding of all expectations from all parties of the partnership; (3) Ensure to have the necessary technological and equipment setup; (4) Ensure to have the necessary videoconferencing software; (5) "The physical space of the satellite clinic in which services are conducted should mimic a therapy room as much as possible" (pg. 8); (6) Setup a clinical administration system where referrals are processed or have a plan how referrals and other admin related issues are processed; (7) Know how to cover startup costs (govt fund, grants, etc.) and how service reimbursements work in your state (province); (8) Therapists should do the necessary preparations and possible modifications to deliver the treatment virtually; (9) Ensure the content is culturally-relevant to target population.	COPE the community agency that provided the virtual care focuses its services to underserved populations (ethnic minorities, individuals residing in rural/remote areas, and economically disadvantaged populations). This agency "attempts to address cultural barriers by offering culturally-modified, evidence-based trauma treatment, led by bilingual/bicultural clinicians, for Hispanic children and families" (pg. 4). The authors also cite the literature to recommend "clinicians be aware of the family's views of trauma and potential cultural constructs, such as acculturation and ethnic identity, which may impact the treatment process." (pg. 4).	Challenges and barriers were not discussed because this was not an implementation study.

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McFarlane, Maledia, Gast, Watson, Batten, Hall & Smith	2004	Increasing the safety-promoting behaviors of abused women	RCT	English or Spanish speaking women that qualified for a protection order against a partner: Texas, USA.	Wherever participants could find safe access to a phone	Safety-promoting behaviour checklist provided over the course of 6 phone calls, with followup calls at 3, 6, 12, and 18 months post-intervention.	The authors state that the intervention was efficacious in that the number of safety promoting behaviours in the treatment group was greater than in the control group, an effect which was consistent throughout the duration of the study. The participant group also increased the number of safety-promoting behaviours that they performed, and the behaviours remained stable through the study.	The behaviour checklist was provided in both English and Spanish, and African American, Latino, and White participants were fairly evenly represented across both control and treatment groups	Challenges and barriers were not discussed
Meoni	2004	Development and Evaluation of a Mobile-based Weighted Wellbeing Scoring Function For Trauma Affected Communities	Dissertation	English-speaking participants residing in Pittsburgh, Pennsylvania, USA	Free Health Center	This is a dissertation with multiple phases and lots of technical steps (app design, development and application). For the purposes of our project, we will extract data related to the Trauma focused intervention delivered through an app. The author tailored and evaluated an app-based trauma-focused intervention specifically for the needs of communities in which trauma and violence.	The author mainly measured the efficacy of the app by testing the usability and user satisfaction, and the participants rated the final product with high satisfaction. The author concludes that "has helped to initiate projects which will help to address the area of TACs with novel implementations of various mobile based tools" (pg. 93).	All participants spoke English; thus language barrier was not addressed. The participants were representative of male and female genders, of various age group (18 - over 55), with various levels of education (GED to PhD). All participants owned a smart phone and 88% use it daily.	Barriers and challenges with implementation were not discussed because this study was only in the prototype phase. It was not implemented in a community or other setting for larger use.
Moring, Don-danville, Fina, Hassija, Chard, Monson et al.	2020	Cognitive Processing Therapy for Posttraumatic Stress Disorder via Telehealth: Practical Considerations During the COVID-19 Pandemic	Narrative or Literature Review	N/A	N/A	In this paper, the author's specifically discuss the utilization of telehealth in providing therapy. They define telehealth as "behavioral health services that are delivered via communication technologies, such as telephone and clinical video teleconferencing" (pg. 2). The focus of this paper is the use of video conferencing.	The authors indicate that the effectiveness of CPT says consistent with in-person delivery when it is provided through telehealth. This method was specifically tested for effectiveness and feasibility on DV and sexual assault survivors (n=13) in 2011, results of this uncontrolled RCT indicate that CPT delivered through telehealth was able to reduce symptoms of PTSD and depression in the survivors of DV and SA. The authors conclude "the existing research shows that telehealth can be used effectively to deliver CPT to a diverse range of trauma survivors" (pg. 3). However, for the current Covid-19 context, they provide specific guidelines on how to implement CPT via telehealth. In terms of acceptability, the authors indicate that evidence regarding acceptability of telehealth by clients is limited, however, compared to other modalities of delivering virtual care telephone care seems to be more acceptable.	Equity considerations were not discussed in detail this paper.	Some barriers to implementing telehealth include technological issues such as unstable or unreliable video streaming. Specific to CPT however, the authors highlight "telehealth can create other challenges due to factors that may be apparent during an in-person visit that may be easy to miss in telehealth sessions" (pg. 7).

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Nguyen-Fang, Frazier, Greer, Meredith, Howard & Paulsen	2016	Testing the efficacy of three brief web-based interventions for reducing distress among interpersonal violence survivors	RCT	Undergraduate students with and without a history of IPV at a large Midwestern university, USA	Whenever participants access their personal computers	The authors developed 3 web-based interventions based on the concept of present control (PC) to reduce perceived stress. The original PC intervention was tested previously, and 2 new versions were developed and tested in comparison. The original PC intervention involved educational modules describing areas in which participants do and do not have control. The enhanced PC intervention has the same modules as the original with the addition of systematic and detailed PC exercises. The PC + mindfulness intervention also has the original PC modules plus mindfulness exercises to reduce rumination.	The effect of all 3 interventions on participants with a history of IPV resulted in significant reductions in distress and perceived stress measures. The enhanced PC intervention had the most significant effect on outcome measures for IPV participants. The authors state that although the effect sizes were in the small to medium range, likely due to the number of participants, all 3 interventions have shown to be efficacious in reducing distress, stress, and worry in participants with a history of IPV. This effect weaker for participants without a history of IPV.	The participants were predominantly female (63%) and white (79%).	Challenges and barriers were not discussed.
Paul, Hassija & Clapp	2012	Technological Advances in the Treatment of Trauma: A Review of Promising Practices	Narrative or Literature Review	N/A	N/A	This paper provides overview of the three most common technologies that are used to provide trauma focused treatments (videoconferencing, e-Health, virtual reality) specifically for PTSD.	(1) Videoconferencing: The authors state, "empirical investigations of videoconferencing have generated initial support for the technology as a feasible and effective means to provide psychological services to diverse client populations" (pg. 459) specific to trauma focused care. These include provision of Telepsychiatry, individual psychotherapy, and Group-based Psychotherapy. The authors add, studies indicate that videoconferencing are acceptable by clients and have same retention rate as in person treatment. These studies are focused on delivery of videoconferencing in remote communities. (2) e-Health: the fact that 80% of population in USA have access to internet and search for health-related information online, the authors assume that e-Health is an effective approach to also delivering trauma-focused treatments for people suffering with PTSD. They add, "e-Health interventions have been shown to be effective with respect to symptom reduction in KCTs. (3) Virtual Reality: "appear acceptable to clinicians and patients, and evidence effectiveness in populations that are historically difficult to treat. The existing data are inconclusive as to whether VR-assisted interventions provide additional benefit beyond established exposure-based therapies for PTSD" (pg. 9112). Additionally, the authors highlight that virtual realities are supposed to supplement not replace traditional approaches.	The authors state, "videoconferencing technology affords not only convenience but also a means to specialized mental health services for underserved and rural populations" (pg. 903). Similarly, they indicate that e-Health services can be used to provide treatment to those who would not otherwise receive it. However, the authors do not consider other vulnerable populations in their discussion. Although these services are possibly accessible to rural communities, they are not taking in to consideration cultural needs, language barrier, affordability and access to internet by other underserved communities. The authors also support this concept by indicating, "further empirical evaluations are greatly needed in this area, including the use of broader, more generalizable participant populations" (pg. 907).	In terms of videoconferencing challenges were mentioned in regards to the impact of digital services on the therapeutic alliance, confidentiality, and patient safety, thus the authors recommend adherence to ethical guidelines, conducting comprehensive intake procedures to assure appropriateness for treatment, and ensuring patients and providers access to on-site mental health providers and security staff (pg. 903). Additionally, technical issues were mentioned as possible challenges. In the case of e-Health, "many concerns have arisen about e-Health, including logistical (e.g., attrition, under engagement) and ethical (e.g., health disparities, user-identity assurance, privacy, crisis management) issues" (pg. 907).

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Ragavan & Bai-Meritt	2020	Thrive: A Novel Health Education Mobile Application for Mothers Who Have Experienced Intimate Partner Violence	Evaluation Research	The researchers/app developers are based in the USA	Not discussed	This article describes “the development and formative evaluation of a trauma-informed, user-friendly, Smartphone based mobile application (app) to address the unmet health needs and improve the well-being of mothers who have experienced IPV. A multidisciplinary team of IPV experts developed the app (called Thrive) in partnership with software developers. Thrive includes three sections: Myself (maternal self-care, stress coping skills), My Child (stress signs in children, talking to children about IPV, mother-child dyadic communication), and My Life (hospital- and community-based resources)” (pg. 160).	The app was evaluated through feedback from IPV survivors, social workers, IPV advocates, and health care providers. These users reported that the app is user friendly, informative, trauma informed, and a potential alternative to handouts. Based on the initial feedback the authors indicate that the app is acceptable. Some survivors even indicated that the app could have been helpful for when they were in the abusive relationship. The app also includes some safety features such as password protection, quick exit button and the name and design of the app is not indicative of IPV support (disguised well). However, the researchers plan to update the app (Thrive) based on additional user feedback, disseminate it to IPV survivors around the country and evaluate it using a longitudinal outcome evaluation. Thus, they did not provide more detail on its effectiveness and feasibility. The users also recommended that the app “be more interactive, allowing users to create goals, talk with other IPV survivors, and personalize the resource section. Participants also suggested providing multiple options for audio portions, so users can choose a voice they find most calming” (pg. 161). This is potentially key information in terms of knowing what IPV survivors need from a virtually provided care.	The app was developed in collaboration with key stakeholders including IPV survivors, these stakeholders requested that the app be “tailored to the local community, be relevant for a diverse audience, and include multiple media types” (pg. 161) and thus the pilot app was designed per the requests and needs of these stakeholders. However, details of socio-cultural and socioeconomic backgrounds of these stakeholders was not provided.	Challenges and barriers were not discussed.

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Rempel, Donelle, Hall & Kodger	2019	Intimate partner violence: a review of online interventions	Scoping Review	This review included studies conducted in the USA; New Zealand and Canada. Target groups were mothers and their children, pregnant women, rural women, and college students who have experienced IPV (currently expertising IPV and survivors). Participants who have access to internet	The setting was not specifically discussed, however, given mothers who have access to internet were the participants in the study, it must be community setting.	Included studies focused on Smart phone App-or computer-based decision support safety aids (please see additional notes for more information on how the authors assessed and reported their findings). Specifically studies used the following forms of intervention: 1. Computerized safety decision aid (three studies); 2. Online Survey; 3. Email interaction with a nurse; 4. LEAF: A privacy-conscious social network-based intervention tool for IPV survivors; 5. Internet-based or app-based safety planning (two studies); 7. Trauma-focused treatment via videoconferences; 8. Confidential online sessions; 9. Online HELP (Health, Education on Safety, and Legal Support and Resources in IPV Participant Preferred) intervention	The authors reported their results in terms of the Reclaiming Self theory Framework, which is an important framework, but not relevant to our study. Therefore, the outcomes of each included intervention will be discussed here. (1) Computerized safety decision aids were described as useful and private by the participants. (2) The online survey does not seem like an intervention because researchers only collected data on frequency of IPV and awareness of victimization or perpetration behaviors. (3) Email between nurses and survivors included concepts of safety, job, school, health, and parenting-related issues, and the authors indicate that such an approach is feasible and acceptable by survivors of IPV. (4) The findings of LEAF (A privacy-conscious social network-based intervention tool for IPV survivors) were not discussed. (5) The internet-based safety planning intervention was considered safe and accessible (74% of participants completed the sessions with "no adverse events" (pg. 7). (6) The app-based safety planning intervention was considered acceptable, and feasible based on participants feedback. The app provides personalized information about abusive dating relationships and appropriate resources in a private, safe, and nonjudgmental manner. (7) The evidence-based trauma-focused treatment was provided via videoconference to rural survivors of domestic violence and sexual assault. "Participants received at least four treatment sessions) treatment via videoconferencing-based technology at crisis centers." (Pg. 7); the delivery of treatment via videoconferencing was considered effective in this study. (8) The online-based HELP (Health, Education on Safety, and Legal Support and Resources in IPV Participant Preferred) intervention was effective in reducing anxiety and depression and increasing social support in survivors of IPV.	The included papers were inclusive of rural residents, and pregnant mothers. However, although this level of assessment may not have been within the scope of this scoping review, the equity considerations in terms of language-barrier, technological access, socioeconomic barrier (unable to afford internet access, phones, computers) and cultural-relevance were not discussed. Also, all the included studies are from high-income countries. That being said, Anderson et al (2019) (study extracted below) reported that 90% of people residing in USA have access to internet. Additionally, the included interventions included only women (excluding other genders).	Challenges and barriers were not discussed.

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Stewart, Orongo Aguiayo, Cohen, Mannarino & de Arellano	2017	A Pilot Study of Trauma-Focused Cognitive-Behavioral Therapy Delivered via Telehealth Technology	Primary Research	Children and youth (7-16 years old) referred to a trauma treatment center in SE USA	Home or local school	Trauma-focused cognitive-behavioral therapy (TF-CBT) was delivered to underserved trauma-exposed youth via telehealth technology (i.e., via one-on-one videoconferencing).	This was a pilot test with n=15 participants, however, the preliminary results indicate that participants showed clinically significant reduction in PTSD symptoms and the dropout rate was zero. Therefore, the authors conclude that the delivery of TF-intervention via video conferencing is promising. The videoconferencing software, Vidyo, was used to remotely deliver care in this study.	The participants profile looks like the following: "93.3% female, 46.7% Hispanic, 40.0% African American, and 13.3% Caucasian. Five participants lived in a rural location (distance to clinic 40–110 miles) and 10 participants lived in underserved urban locations. Five youth had an index trauma of sexual abuse, one had an index trauma of physical abuse, three experienced the traumatic loss of a loved one, two witnessed the armed robbery of a family member, one witnessed the physical abuse of a sibling, and three experienced multiple traumas. All children met criteria for PTSD" (pg. 326). Before this study, the participants had barriers in accessing care due to language barrier, lack of transportation, caregiver work schedule and rural settings; these barriers were mitigated by the remote delivery of care. The treatment was provided in two languages: English and Spanish. In addition, the researchers ensured that logistical, perceptual, and cultural barriers including "ethnocultural beliefs and attitudes related to mental health treatment" (pg. 6) were addressed during the interventions.	The authors indicate, "88.6% completed a full course of TF-CBT and 96.8% of these treatment completers no longer met diagnostic criteria for a trauma-related disorder at post-treatment. Results demonstrated clinically meaningful symptom change post-treatment, with large effect sizes evident for both youth and caregiver-reported reduction in posttraumatic stress disorder symptoms. The results observed in this pilot evaluation are promising and provide preliminary evidence of the feasibility and effectiveness of this novel treatment format" (pg. 274-275).	The intervention was successfully implemented and barriers or challenges were not discussed, however, this is a pilot study with small sample.
Stewart, Orongo-Aguiayo, Young, Wallace, Cohen, Mannarino & de Arellano	2020	Feasibility and Effectiveness of a Telehealth Service Delivery Model for Treating Childhood Posttraumatic Stress: A Community-Based, Open Pilot Trial of Trauma-Focused Cognitive-Behavioral Therapy	Primary Research	Children and adolescents aged 7 to 18 struggling with PTSD as a result of physical abuse, sexual abuse, witnessing domestic or community violence, violent or unexpected death of a loved one in South Carolina, USA	Medical Center	Telepsychotherapy a type of e mental health or telehealth was delivered to trauma exposed children and youth (n=70).	The authors indicate, "88.6% completed a full course of TF-CBT and 96.8% of these treatment completers no longer met diagnostic criteria for a trauma-related disorder at post-treatment. Results demonstrated clinically meaningful symptom change post-treatment, with large effect sizes evident for both youth and caregiver-reported reduction in posttraumatic stress disorder symptoms. The results observed in this pilot evaluation are promising and provide preliminary evidence of the feasibility and effectiveness of this novel treatment format" (pg. 274-275).	The children and youth were identified as being from an underserved population of South Carolina. Additionally, a wider range of diverse subgroups were included (58.6% Hispanic, 30.0% African American; 34.3% of children and 57.1% of parents requesting Spanish-language materials and services) (pg. 284-285). The treatment was also available in two languages (English and Spanish).	The intervention was successfully implemented and barriers or challenges were not discussed, however, this is a pilot study with small sample.	

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Valentine, Donofry, Bro-man, Smith, Rauch, & Sexton	2019	Comparing PTSD treatment retention among survivors of military sexual trauma utilizing clinical video technology and in-person approaches	Primary Research	Military Sexual Assault Survivors, USA	Veteran Medical Center and Homes of survivors	Trauma focused Treatment (Prolonged Exposure or Cognitive Processing Therapy) was delivered via clinical video technology to military sexual trauma survivors struggling with PTSD. These survivors were given a choice to enroll in remote delivery (clinical video technology) or in person therapy.	Overall, full completion rate was similar between in-person delivery and video delivery. However, "these results suggest survivors of Military Sexual Trauma were less likely to receive a minimum adequate dose of trauma-focused treatment and that early attrition was particularly salient when care was delivered remotely via Clinical Video Technology" (pg. 5).	The participants were mostly female (74%) and 69% identified as white.	The authors state, "attrition speed was greater for veterans in Clinical Video Technology-delivered treatment, with veterans in this group markedly more likely to attrite quite early in care. The attrition patterns observed tended to coincide with interventions such as early imaginal exposure and written trauma accounts. This is an unfortunate time for patients to dropout, as they may be experiencing temporary symptom exacerbation, which may reduce their likelihood of reengaging in treatment in the future and may negatively impact treatment expectancy. It may be helpful for CVT clinicians to assess for motivation to return at the end of each session and have specific discussion about retention throughout the course of treatment" (pg. 7).
Villegas-Gold	2018	Developing a Prototype of an Internet-based Decision Aid to Assist Student Survivors of Sexual Assault at Colleges and Universities with Making Informed Choices about Seeking Care and Pursuing Justice in Real-time	Primary Research	Sexual Assault Survivors (students) at Arizona State University, USA	Arizona State University	This is a PhD dissertation where the researcher developed and designed a prototype of an internet-based, trauma-informed decision aid specifically tailored to assist students at Arizona State University who experience sexual. The virtual decision aid supports survivors with making informed choices about reporting and seeking care, advocacy, and support on and off campus.	Based on the preliminary results of the pilot test the authors conclude, "1. It is feasible to adapt decision aids for use with the target population, and 2. While aspects of the tool can be improved during the next phases of redefining and redesign, members of the target population find it to be acceptable, comprehensible, and usable" (pg. 3).	The participants were female University students, and the researcher developed the project with feminist approach in mind. However, additional considerations regarding equity were not discussed.	Given this was a prototype test, the authors indicate that "survivors' voices may have been underrepresented due to sampling issues" (pg. 127). Also, it is difficult to comment on implementation challenges because this prototype was not implemented for larger use.

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Wershaw, Sullivan & Rivera	2013	A Systematic Review of Trauma-Focused Interventions for Domestic Violence Survivors	Systematic Review	Diverse groups in USA (African American, White, Latina, Asian)	Different settings (shelter community, Primary care).	No, however, all the interventions discussed in this paper are trauma-based treatments tailored for IPV survivors. These include Cognitive Trauma Therapy for Battered Women (CTTBW); HOPE: Helping to Overcome PTSD through Empowerment; a trauma focused intervention for abused Korean Women residing in shelters; trauma focused treatment that was tailored specifically for African American women, Latina women, suicidal women, and low-income pregnant mothers. Some of these were also culturally tailored for the women.	The results show that each intervention has a positive outcome in terms of lowering signs of PTSD and depression. However, authors of this systematic review indicate that these findings should be interpreted with caution because there were methodological limitations in the included studies (small participant number, higher dropout rates) and the intervention delivery also varied from one study to another (e.g. some were group based, some were individual based). The studies that tailored the intervention to specific cultural groups had higher attrition rate, but the authors again caution in interpretation of this data by pointing out that other factors such as homelessness or other factors could have been confounders to attrition rates. Therefore, all around the authors recommend caution be taken when discussing effectiveness of the intervention. Feasibility and acceptability are not discussed but this review did not discuss remotely (virtually) delivered interventions.	Equity considerations are at the center of this review. Studies included were inclusive of various underserved population in USA (African American, Asian, Latina, low-income, suicidal, drug addicted). However, the authors note the following: "While a number of the interventions reviewed in this paper included diverse groups of participants and culturally tailored interventions, approaches to trauma recovery that are based on the values and healing traditions of particular communities that not only may be more relevant for those communities but which offer approaches that touch on domains affected by trauma not addressed by existing evidence-based practices." (pg. 16)	Not applicable, because this study is not focused on virtual care delivery.