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Feasibility of an Online-Based Safety Decision Aid for Brazilian Women Living with Intimate Partner Violence: Findings from Participatory-Action Research in a One Stop Center

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Abstract

Intimate partner violence (IPV) is a challenge in Brazil; the country is ranked 6th globally for femicide and one in four women experience physical and/or sexual IPV in their lifetimes. Safety decision aids (SDA) are tools for women experiencing IPV. Building upon previously developed and tested online SDA tools, we intend to adapt an SDA tool for use in Brazil. The purpose of this study was to examine the feasibility of a technology-based SDA to support Brazilian women living with IPV, tailored for the Brazilian context. Our participatory-action research approach built upon research between 2018 and 2019 at the House of the Brazilian Woman (HBW) of Curitiba, Brazil, a cross-sectoral one-stop center (OSC) providing comprehensive care for IPV survivors. Field research included observation, field notes, and in-depth interviews with twenty-eight (n=28) participants (HBW staff and survivors). The results were grouped into four main thematic categories: advantages; uncertainties; barriers; and suggestions. The triangulated results showed that the majority of participants considered the SDA feasible, highlighting flexibility and confidentiality; information about IPV; and access to resources for formal help-seeking as advantages of the tool. Participants also expressed uncertainties about SDA's ability to increase women's safety and its accessibility for the most vulnerable. They made suggestions for improvement to meet the unique needs of Brazilian women. This study provided evidence on the potential of an SDA tailored for use within a comprehensive program of women survivors in Brazil. This step was crucial to inform the future implementation and evaluation.

Keywords Intimate partner violence · Domestic violence · Internet-based intervention · Community-based participatory research · Gender-based violence · Brazil

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Introduction

Intimate partner violence (IPV) is a global problem posing significant challenges for women's health and wellbeing (World Health Organization [WHO], 2010). Eradicating IPV and other forms of violence against women and girls and reducing gender asymmetries are aims of the Sustainable Development Goals (United Nations [UN], 2016). Low- and middle-income countries (LMICs) have a higher prevalence of IPV compared to high-income countries, while their resources to address the issue are more limited (WHO, 2021; Coll et al., 2020).

Brazil is a LMIC, ranked 6th globally for femicide, with a rate of 4.8 female homicides per 100,000 women (Waiselfisz, 2015), a rate 2.5 times higher than the global average. Femicides are the tip of the iceberg among several forms of IPV; among ever married/partnered women aged 15–49 years in Brazil approximately 23% experience physical and/or sexual IPV during their lifetimes (WHO, 2021). In Brazil, Black and Indigenous women have increased risk of IPV and femicide compared to White women (Vasconcelos et al., 2021; Monteiro et al., 2021; Wanzinack et al., 2019). It has been associated with Brazil's history of colonization, slavery, and systemic racism as well as historical and contemporary machismo (Ribeiro, 2018).

Despite national policies targeting resources to prevention and response to IPV and femicide (Brazilian Federal Law Number 11,340, 2006; Brazilian Federal Law Number 13,104, 2015; Brazilian Federal Law Number 14,188, 2021), (Gattegno et al., 2016), violence against women (VAW) is not decreasing as desired. Thus, innovative programs and interventions need to be developed and tested. The recent establishment of the House of the Brazilian Woman (HBW) is one such example on an innovative program (Brazil, 2013). The HBWs are public one-stop centers (OSCs) providing cross-sectoral services for women experiencing violence (Johnson, 2020). HBW OSCs are planned for each of the 27 Brazilian State capitals, however only seven HBW are currently in operation, including our study site in Curitiba, in Southern Brazil (Evans et al., 2021).

One promising intervention being adapted and tested globally to increase IPV survivors' access to safety planning and local support resources is online safety decision aids (SDA) (Campbell & Glass, 2009). SDAs aim to support women to identify abusive and dangerous behaviours by an intimate or ex-intimate partner, establish safety priorities for themselves and other family members, including their children (if appropriate) and design a safety plan tailored to their situation (Dutton, 2004). Glass et al. (2010) developed and tested Iris, the first interactive, web-based SDA for women experiencing IPV. Their findings

suggested that women randomized to the SDA intervention felt more supported in their decisions and reported less decisional conflict (e.g., not having enough information to make a decision) about their safety after one use of the SDA compared to women in the control group (e.g., usual safety planning) (Eden et al., 2015; Glass et al., 2017). In addition, abused women randomized to the SDA intervention who wanted to end their relationship were significantly more likely to safely leave an abusive relationship compared to abused women in the control group. Women using the SDA experienced a greater reduction in feelings of uncertainty and in feeling unsupported about safety compared to the control group (Glass et al., 2017).

After being tested with promising results in the US, online SDAs for women experiencing IPV have been adapted, improved and tested in Australia (i-Decide) (Hegarty et al., 2015, 2019); New Zealand (i-Safe) (Koziol-McLain et al., 2015, 2018); Canada (i-Can) (Ford-Gilboe et al., 2017, 2020) and Kenya (Decker et al., 2020a, b). In Australia and Canada, the SDA was tailored for Aboriginal and Indigenous women. In New Zealand, the SDA was also tailored for Indigenous Maori women and women with disabilities. In keeping with technological advances, the Iris SDA was adapted for mobile applications (apps) and renamed (myPlan), for access via smartphone, tablet or computer. The myPlan app has been further adapted and tested in the US for all genders, for college-aged women, LGBTQ relationships (Glass et al., 2015, 2021), immigrant women (weWomen), and American Indian women (ourCircle) (Bagwell-Gray et al., 2020).

After being tested in high-income countries, adaptation of myPlan has recently begun for use in LMICs, including Kenya and Thailand (Decker et al., 2020a; Udmuangpia et al., 2020). Decker et al. (2020a, b) found high levels of feasibility and acceptability of the myPlan app version for Kenyan women, with adaptations based on local needs, including increased visualization of messaging, and implementation supported by community health volunteers (CHVs). Technology-based SDAs, like myPlan may be especially useful in LMICs, where internet usage and mobile phones are rapidly growing and resources to address IPV may be scarce.

Although a technology-based SDA is a promising strategy for supporting women living with IPV, it has not previously been explored in the Brazilian context. Thus questions remain about whether a technology-based SDA is feasible for Brazilian women experiencing IPV — and further what are the potential advantages and challenges of the SDA. The input of Brazilian women experiencing IPV as well as those who support them is crucial to answering these questions. Inspired by prior SDA development, we aim to adapt the myPlan SDA for local use with Brazilian women in abusive relationships as well as advocates providing them support.

Technology-based SDAs have not been used or been systematically evaluated in the country. To respond to Brazilian women's needs, reduce their decisional conflicts and support safety planning, the purpose of this study was to examine the feasibility of a technology-based SDA tailored to the priorities and needs of Brazilian women living with IPV.

Methods

Study Design

We adopted a participatory-action research (PAR) approach, including local stakeholders in all the steps of the study, from co-designing the study design to co-publishing the results. (Thiollent, 2011; Liamputtong, 2013; Thiollent & Toledo, 2012). We followed Michel Thiollent's principles of PAR, where active participation is "a creative performance of those researched, who are also interested in conducting and developing the research itself. In this case, there is a social or political interest and an emotional involvement" (Thiollent, 2011, p.169). The researchers and key participants consisted of a multidisciplinary team of collaborators from the Global South and North, who are committed to developing, examining feasibility and testing innovative technology of the Brazilian SDA. Our research team examined five SDA platforms previously developed and tested in other countries: Iris and myPlan (USA), iCan (Canada), iDecide (Australia), and (iSafe) New Zealand. This review included: reading the four original research proposals; navigating through the respective platforms; reading study protocols, theoretical frameworks and published papers; and informal communications with the four principal investigators about their respective processes to learn from their experiences. We compared the barriers and facilitators that each SDA faced as described in these documents and in discussion with the principal investigators. Based on this review we created a checklist (Appendix 1) to determine whether an SDA would be feasible for Brazilian women and which adaptations would be necessary for a tailored Brazilian version. This checklist also helped to inform the semi-structured interview guide used with key local informants (Appendix 2).

Study Setting and Participants

The study was conducted at the HBW of Curitiba (HBW-Curitiba), located in the State of Paraná, Brazil. Curitiba's Metropolitan area reports higher rates of femicide compared to the state average (Wanzinack et al., 2020). HBW-Curitiba is one of the seven HBWs OSC launched by the Brazilian government to respond to VAW nationally. The HBW is a 24/7 publicly supported OSC, including health and legal services, temporary shelter, and financial support; staffed

by a cross-sectoral interdisciplinary staff team caring for women living with violence. Between 2016 and 2020, the HBW-Curitiba has provided comprehensive services to over 50,000 users (Almeida et al., 2020).

Participants were eligible for the study if they were 18 years of age, male or female employee of the HBW-Curitiba and/or a female survivor of IPV seeking services at the OSC. The staff and survivors were recruited using purposive sampling (Liamputtong, 2010), where we sought data rich-informants while seeking a diverse group of participants (age, education, role). The HBW-Curitiba staff were recruited from multiple departments (Public Security, Psychosocial Care, Management and 'Maria da Penha Patrol' – a specialized police unit responsible for women in situations of violence). Among survivors we included only those deemed not to be in immediate crisis after being evaluated by the psychosocial department, always prioritizing survivors' well-being.

Study Procedures

Following the initial SDA review, we engaged in participant observation (Liamputtong, 2010) to understand the dynamics of the HBW-Curitiba and to establish trusting relationships with staff and women accessing the OSC. To establish this trust, our research team was present weekly at the HBW-Curitiba over 18 months (January, 2018 to August, 2019). During this time, after obtaining informed consent from participants, we directly observed and took field notes on staff roles, routines and flows of all HBW departments. The direct observation provided a comprehensive understanding of survivors' experience and movement through the different services when seeking care at the HBW as well as the work processes established by department leaders. The observations also informed decisions on who to purposively invite to participate in the individual interviews and the questions to be included on the interview guide.

After obtaining additional informed consent, we utilized semi-structured in-depth interviews (IDIs) administered by skilled researchers with significant experience working with survivors of IPV. The IDI guide included questions about their knowledge, attitudes towards SDAs and their perceptions of potential advantages, barriers and recommendations for SDA use among Brazilian women. IDIs were conducted in a private room by a female researcher, with a degree in Social Work and previous experience caring for violence survivors. We conducted IDI with 28 participants; all interviews were recorded and lasted between 20 and 60 minutes. We attempted to create non-hierarchical relationships with participants, encouraging questions, criticism and suggestions. This participant observation and interaction period also provided the opportunity to discuss

Table 1 Demographic profile of study participants

| Participant identification | Gender | Education | Department/role of work at the HBW-Curitiba | Work directly with IPV survivors |
|----------------------------|--------|---------------------------------------|---|----------------------------------|
| P1 | Female | Bachelor's Degree in Psychology | Psychosocial | Yes |
| P2 | Female | Bachelor's Degree in Psychology | Psychosocial | Yes |
| P3 | Female | Bachelor's Degree in Psychology | Psychosocial | Yes |
| P4 | Female | Bachelor's Degree in Psychology | Psychosocial | Yes |
| P5 | Female | Bachelor's Degree in Social Service | Psychosocial | Yes |
| P6 | Female | Bachelor's Degree in Social Service | Social Service Assistance | Yes |
| P7 | Female | Bachelor's Degree in Social Service | Social Service Assistance | Yes |
| P8 | Female | Bachelor's Degree in Administration | Shelter | Yes |
| P9 | Female | Bachelor's Degree in Administration | Administrative services | No |
| P10 | Female | Bachelor's Degree in Administration | Administrative services | No |
| P11 | Male | High school | Maria da Penha Patrol | Yes |
| P12 | Female | High school | Maria da Penha Patrol | Yes |
| P13 | Male | High school | Maria da Penha Patrol | Yes |
| P14 | Male | High school | Maria da Penha Patrol | Yes |
| P15 | Male | High school | Maria da Penha Patrol | Yes |
| P16 | Female | High school | Maria da Penha Patrol | Yes |
| P17 | Male | High school | Maria da Penha Patrol | Yes |
| P18 | Female | High school | Maria da Penha Patrol | Yes |
| P19 | Male | High school | Maria da Penha Patrol | Yes |
| P20 | Female | High school (not completed) | Survivor of IPV | NA |
| P21 | Female | Elementary school | Survivor of IPV | NA |
| P22 | Female | High school | Survivor of IPV | NA |
| P23 | Female | Master's degree | Survivor of IPV | NA |
| P24 | Female | High school | Social Support | Yes |
| P25 | Female | High school | Social Support | Yes |
| P26 | Female | High school | Community Educator | Yes |
| P27 | Female | Post-graduate certificate in Pedagogy | Educator | Yes |
| P28 | Female | Post-graduate certificate in Pedagogy | Educator | Yes |

NA = Not applicable

and shape the interview guide. A summary of IDI participants' demographic profile is shown in Table 1.

Field notes were collected in a field diary inspired by ethnographic studies who use this tool for registering events, impressions, reactions, situations, providing a "thick description" of the reality (Liamputtong, 2010; Phillippi & Lauderdale, 2018). Field notes were collected both during the participant observation and during the IDIs. They helped to support the analysis, triangulating what we have listened, with what we have seen and what we have noted.

Data collection occurred until saturation was reached, following Liamputtong's (2010) principles on data saturation, including: when little or no new data is being generated; there are sufficient data to account for all aspects of the phenomenon; and the data allow the research question and aims to be thoroughly addressed. All the field work/data collection and analysis were conducted in Portuguese.

Analysis

Our analysis was based on a triangulation approach (Minayo et al., 2005; Santos et al., 2020) including: a) triangulation of data collected at the HBW-Curitiba - participant observation, field notes, and in-depth interviews; b) triangulation of participants - staff and survivors; and c) interdisciplinary triangulation's analysis - composed by researchers from public health, human rights and social sciences.

Recorded data were transcribed, coded and analysed using a thematic analysis approach (Liamputtong, 2010). Two authors with interdisciplinary backgrounds (a female social worker and master's candidate, and a male allied health professional with Ph.D. in public health), independently analyzed the content, identifying four inductive categories: 1) advantages, 2) barriers, 3) uncertainties, and 4) suggestions. The organizational structure based on emergent themes is aligned with recommendations in the

reporting of PAR, as proposed by Smith et al. (2010). Our analysis centered the concerns of those directly affected by the potential introduction of an SDA, namely survivors and staff of the HBW serving women. A third Brazilian author, the director of the HBW-Curitiba provided critical review of the content, supporting the analysis. The preliminary report was translated into English for additional inputs and final analysis by North-American collaborators (two female academics working in public health and nursing, respectively). Preliminary and final analysis were discussed with HBW staff and managers to verify our analysis and ensure that the future SDA best captures the needs and concerns of Brazilian stakeholders.

Stakeholder Dissemination

Following the principles of PAR, key participants from local settings are co-authors. Prior to publication, partial and final preliminary results were discussed with HBW-Curitiba staff and stakeholders. Preliminary results were co-presented together with HBW staff in the 6th Global Conference on VAW (Signorelli et al., 2019) and theoretical and methodological approaches were also published in co-authorship in a Brazilian scientific journal (Silva et al., 2019).

Ethics

The study was approved by the Research Ethics Committees of the Federal University of Paraná and the City of Curitiba (CAAE approval number 89411818.4.0000.0102). We utilized the WHO guidelines on conducting research on VAW (WHO, 2016). All participants were informed about the aims of this study and signed an informed consent form.

Results

Understanding the HBW-Curitiba Services and Safety Planning

Our team spent more than 400 hours at the HBW-Curitiba over an 18-month period to develop bonds and confidence between participants and researchers. Based on the findings from triangulating the participant observations with our field notes, we understand the flow of service provision at the HBW-Curitiba to be as follows: when an abused woman enters the site, she is first assessed by the psychosocial team, which includes trained psychologists and social workers. During the assessment, women may disclose their experiences of abuse; learn about services provided by HBW; staff discuss options, share information about legal, health and social support services and co-establish an individualized safety and support plan. After this consultation, if women

decide to do so, they can file a police report on site. The specialized police unit will collect information to initiate a legal process. The specialized police may then escort individuals to their home to collect personal items (e.g., documents, clothes and medicines), and if identified as being in imminent danger, they may receive housing in the HBW-Curitiba temporary shelter, including space for children and small pets. Meanwhile, public prosecutors analyze the individual complaint and if it is characterized as criminal, begin the process of prosecution. A judge, who works on site, rapidly analyzes the case and may call the accused perpetrator for mediation or depending on severity of the abuse, may issue a protective order or immediate detention. If the woman cannot afford a lawyer, the HBW-Curitiba provides a public attorney to represent her during the proceedings. The Maria da Penha Patrol ensures that all protective measures are complied with. As needed, women may be referred to other services, such as the labour department of the HBW-Curitiba to help her to find work through job searches and/or professional training towards financial autonomy.

From our participant observation and field notes collected during the early stages of the study, most IPV survivors and staff did not explicitly discuss or have a tool to support safety planning. Safety planning and an SDA, was a new concept in the Brazilian context. Thus, this concept needed additional explanation to make sense to participants. However, despite not formally using the concept, strategies of safety planning were unconsciously adopted by staff and recommended for survivors at the HBW. When talking about technology-based devices for abused women, participants frequently referred existing resources that connect women directly to police such as emergency hotlines or global positioning systems (GPS) applications (apps) to access IPV services. With time and interaction with our research team, participants (staff and survivors) understood the concept of safety planning and what an online SDA was and its purpose. After comprehension, the immediate feedback was generally very positive, and viewed as having potential for breaking the cycle of violence. More than once participants expressed sentiments like: *“How could we have never imagined this before?”* or *“This can help to save many women’s lives.”*

In the following sections, we will detail the four thematic categories: 1) advantages; 2) uncertainties; 3) barriers; and 4) suggestions that emerged from the triangulation analysis.

Advantages of an Online SDA to Support Brazilian Women Experiencing IPV

Among IDI participants, both staff and survivors ($n=28$), 89.3% ($n=25$) considered the SDA feasible for the Brazilian context. They reported several potential advantages to having access to a SDA. These included the subcategories: a) **agility, security and anonymity** in helping women take

the first step towards formal protection mechanisms, especially for women who want anonymity and who have not yet accessed specialized services in person, e.g. at police stations; b) **a learning tool for receiving information about IPV** with safety tips that helps women recognize abusive relationships, since many do not see themselves as abused or living with an abusive partner; and c) **a resource for formal help-seeking**, helping users to find cross-sectoral services and connecting with professional support that are trained in the provision of trauma informed services and care for survivors.

Agility, Security and Anonymity to Break the Cycle of Violence

Participants shared their perceptions about the feasibility and potential of the platform for Brazilian women. One participant shared: *“The online platform can contribute to women’s decision-making to break the cycle of violence [...]”* (P6 - Social service staff). This participant highlights the potential for supporting women’s decision-making in taking the first step to break the cycle of violence. Another participant added: *“It will be a mechanism that will help women who feel embarrassed, to talk about the violence in which they are being affected.”* (P17 - Maria da Penha Patrol staff).

None of the participants knew about applications or websites that were designed to help women living with IPV or other tools to aid in decision making about the safety of their abusive relationships. For all of them, the SDA was seen as an innovation for Brazilian women. Participants believed that a positive aspect of a SDA was the ability to seek services in an anonymous, discrete and private way, as revealed by P4 (Psychosocial staff): *“It is quite necessary because the victim feels embarrassed to tell someone about violence directly.”* The SDA was also perceived as a first step to support women’s autonomy in making decisions and helping her connect to formal services, as noted by P18 (Maria da Penha Patrol staff): *“The online platform can serve as a support for women, as a way of voicing and making the decision to denounce the aggressor, helping them to take the first step towards formal complaints.”* While this participant mentioned that the online SDA could serve as a first step towards learning about and reaching out to formal services that are typically delivered face-to-face, another participant highlighted, as an advantage, the fact that the SDA can also be useful for women who do not wish to access formal support as they want to remain anonymous but also receive support:

“It is feasible but it needs to think about anonymity, especially for women who do not want to be exposed and who, out of fear or shame, stop looking for spe-

cialized face-to-face services, such as police stations or the HBW.” (P9 - Administrative staff)

Shame, fear and embarrassment are recognized challenges for women experiencing relationship violence (Wright et al., 2021). Participants believed the SDA could assist in overcoming these barriers. One staff added that especially for upper-class women, who are ashamed to enter a police station or the HBW to report their partner for IPV and consequently face rumours and gossip within their social groups, the SDA could help them to plan and discretely connect to skilled advocates and other specialized services. Most survivors report that they want the violence they are experiencing to stop, and preferably without involving police and the justice system. Survivor’s voices were extremely important in this study as they bring important insights in terms of how the SDA might be resource for them outside the formal service system. One survivor spoke to this topic:

“Of course, this platform is important, we will have one more way to denounce the violence we suffer, without fear and without being ashamed to tell people. People think it is easy to report, to go to the police station, they do not know that we can be beaten again by the husband when he comes back home drunk...If he knows that I went to the police station, I am even afraid of him killing me. If you get this platform, other women can take courage and leave the house, or denounce and not be beaten.” (P21 - Survivor of IPV).

A Learning Tool Providing Information about IPV

Some participants highlighted the potential of the SDA to help women to recognize and identify themselves as living in an abusive situation. It is well known from existing evidence that many survivors do not define their experience as abuse or violence but rather a situation that will improve if they change their behaviour or provide enough support to their partner. All participants agreed that the SDA must contain information on the Maria da Penha Law (Brazilian Federal Law Number 11,340, 2006), a Brazilian national law that addresses VAW with definitions and examples of the different types of abuse/violence. The participants noted that many Brazilian women do not consider threats, put-downs, and insults as psychological abuse, for example. If women are provided information and respond to questions within the SDA about specific behaviours by the abuser defined as psychological abuse and other forms of IPV abuse/violence, this has the potential to raise awareness and change perceptions about behaviours that are abusive and violent, and increase women’s ability to challenge the normalization of IPV. As one participant shared:

“I realize that when women are in a situation of violence, not all women understand the situation of violence, or cycles of violence. Others, as much as they know, are unable to disassociate themselves from the supposed comfort, security, that they are used to, or due to the family of origin and the issue of children. They are also afraid of not being able to deal, in the broad sense, of the post-complaint consequences. So that she can seek care, legal advice (mainly), gathering evidence about violence and what she should have as evidence to guarantee her basic needs, such as a place to live, food, take care of her health (mainly mental). It means, saying that she must be prepared to leave with all the material evidence for her “release”, for her freedom; such as: proof of residence in common when she is in a stable union, and especially when she is economically dependent on the aggressor, to know that she is entitled to a pension for food and for the children. (...) Perhaps the application can warn about the forms of violence that are crimes and for that, the aggressor must be reported. As well as where the access points to the support network are.” (P5 - Psychosocial staff)

This participant described the SDA’s potential to help women identify themselves as living in an abusive relationship, and to reflect on their safety and needs of oneself and one’s children. This also included collecting evidence for potential legal processes and a knowledge of one’s rights. The HBW-Curitiba staff recommended including tips for collecting proof of partner’s income, as when women decide to end the relationship and seek the HBW services, they often do not have the evidence on the partner’s ability to provide financial support for her and her children.

A Resource for Formal Help-Seeking

Many participants identified the SDA as a resource that allow users to learn about and connect with face-to-face services through the cross-sectoral support network:

“An application must have guidelines and interactivity with staff in the background to provide qualified assistance”; [...]“If you have staff prepared to listen to women after using the app, you can even encourage them to file a complaint.” (P12 – Maria da Penha Patrol staff)

Some HBW-Curitiba staff discussed that the SDA should allow users to enter information, such as their zip code so that the platform could return tailored information and resources in her local community that provide face-to-face support for survivors. Importantly, staff recognized that services referred to through the app must have trained staff with

the capacity to meet the multiple and complex needs of IPV survivors. Referrals provided through the SDA to local services certainly raises the expectation of survivors that they are going to receive needed support. If when seeking these face-to-face services, they are treated disrespectfully or find that services do not exist, the SDA and the services will lose credibility and will not be used. Staff also mentioned that the SDA could help survivors to plan and make connections with their informal networks, including friends and relatives, as exemplified by one participant:

“Well, I believe that it is always important before any rash attitude, to work safely. That is, she needs to know the care she needs to take when making the complaint. For example: If she makes the complaint, she will not necessarily be able to live with the aggressor, so she needs to plan her departure from home, organize a place to stay, and in some cases the children too, because they can also suffer from indirect violence. I believe that it is not enough just to make the complaint, she needs to be aware of the consequences of this decision, which is not easy, for this the importance of having the support of family, friends, that are important networks at this stage, and public policies that make this “freedom” possible. You can’t just report it and stay at home. It necessarily needs planning and strategy.” (P10 – Administrative staff)

This participant used the term public policies to refer to public services such as social assistance, justice system, shelters, etc. This quote exemplifies the purpose of safety planning, and specifically one of the modules of the online SDA. Safety planning is designed to support SDA users to make complex decisions while considering their options, values and priorities for self and family. Safety planning requires proactive steps that can be tailored to the survivor’s decision to stay in or leave an abusive relationship. The goal of the SDA is not for the survivor to leave the relationship but rather the goal is to have a safety plan tailored to their unique situation. In this case, both formal (public health, police, social service, HBW) and informal networks (family, friends) are essential to inform the safety plan and provide comprehensive approach to safety.

Uncertainties: Lack of Clarity and Confusion about Use with Existing Devices

For some participants it was not clear how the SDA would work, especially because no such application is currently available in Brazil. This lack of clarity was underscored when we asked participants if they had heard of any technological device to support women survivors of violence; 68% said they had never heard of such as device. Moreover, the term safety planning is not common in Brazil. Despite

this, 32% said they knew about some kind of technological support for women living with IPV. One participant shared: *"I know...I think it is that little device, right? [...] there is a panic button. [...] all women who are at risk of being murdered by their husband, they have a device, a panic button for their safety."* (P26 -Community Educator staff).

The "Panic Button" devices, reported by some participants, have been available since 2015 for Brazilian women at imminent risk of femicide, or other cases of severe IPV (Darlington, 2013). These devices are obtained as protective measures only after they have received specialized services (at the HBW-Curitiba or elsewhere), and only after a judge deems that the case is high risk and makes a determination that the panic button device should be provided to the survivors. The panic button works as an electronic bell; when women feel threatened, this device is activated and connected with the public safety protection network, which immediately aims to provide assistance to the survivor. The panic button sends geographic coordinates through GPS to the Maria da Penha Patrol, so they can reach the woman in a few minutes.

While our goal was not to analyze attitudes about panic buttons or to compare them with the proposed SDA, some participants revealed important limitations of the panic button that could be taken into account for the SDA. The main criticism of panic buttons included the need to recharge them, and forgetting the device at home, creating vulnerability in potential times of need. Based on these limitations, participants suggested that ideally the panic button would be integrated into a mobile application as part of a SDA and therefore accessible on a mobile device. Such a suggestion offers the possibility of identifying and locating survivors, especially given the ubiquity of GPS systems within mobile applications systems.

Barriers to Feasibility

Participants raised two major concerns about SDA feasibility: a) **Women's safety**; and b) **Barriers for the most vulnerable women**.

Women's Safety

Three participants expressed concerns about SDA feasibility, specifically with regard to women's safety relative to their abusers: *"Most women use their cell phones, what happens is that the aggressor often breaks the woman's cell phone"* (P4 - Psychosocial staff).

Women's safety and bodily integrity was by far the most important issue pointed out by participants. Considerations for increasing security for SDA users is necessary. Research has consistently demonstrated that abusers monitor their partners' mobile phones and web usage, as they

are concerned that she may be accessing services or talking about the abuse to someone who may hold them accountable. Participants suggested including tips for women to increase the safe use of online devices, such as deleting their use history after accessing the SDA, as well as other tips to delete eventual clues that could reveal use of the SDA. Another participant shared: *"The cell phone is usually monitored by the aggressor, he will destroy the victim's cell phone and may even kill her"* (P13 -Maria da Penha Patrol staff).

Participants suggested some sort of quick exit on the SDA if the aggressor is monitoring the use. The quick exit button once touched directs the user to another screen that may contain resources for women's health in order to disguise the use of the SDA. The US version of myPlan has several such features. Additional safety-related issues were regarding confidentiality and secure user data storage: *"It must be confidential and the developers must preserve the victims' information"* (P27 - Educator staff). Protecting user data storage from hacking was viewed as an important consideration.

Barriers for the most Vulnerable Women

Participants expressed concern for the feasibility of using the SDA among those who had limited mobile phone and/or internet access:

"Many women do not have access to the internet, in rural areas for example, without signal coverage, and others who do not have a cell phone or a computer, especially the poorest. Some poor women even have cell phones, but don't have credits to use the mobile internet. And I still consider it a risk factor to access this app from a smartphone, as many men monitor which applications or pages the woman accesses"; [...] "I think they should report the violence directly to the police and not through an application, if we think about safety, the application could be a risk if the woman is caught by the aggressor using it" (P24 - Social support).

Participants were concerned about the most vulnerable women, such as the poor women, who do not access the internet or those with low literacy levels, that may face limitations using the SDA. In regard to women that do not have access to the internet, some creative alternative measures were suggested by participants, such as the availability to download the application when WiFi is available (e.g., restaurants, cafes, bus terminals) and use its functions in the offline mode. Another suggestion was to provide kiosks in bus terminals, primary health care units, public libraries, among others public places, for women who cannot use their phones or do not have access to the internet.

Some participants, especially HBW-Curitiba staff, were skeptical about the ability of an online SDA to help women. One participant believed, “*the application will not prevent violence*”; [...] “*if she doesn’t want to report the aggressor, the online application can only be a palliative*” (P28 - Educator staff). These concerns were important to note as an application or other technology-based resources for survivors are one component of a comprehensive approach to ending VAW. The SDA was not developed to replace trained and skilled advocates and staff as at the HBW, but was developed as a resource for increasing awareness of IPV, supporting survivors to develop a tailored safety planning that includes referrals to face-to-face services provided by skilled advocates at the HBW.

Suggestions

Participants provided many suggestions to adapt the SDA for the Brazilian context. These suggestions included: making the application simple, with step-by-step instructions; inclusion of resources for women with disabilities; and a suggested name for the SDA. HBW-Curitiba staff raised important concerns regarding the need of a cultural adaptation for Brazilian women distinct from those developed for use in high-income countries. In other words, just translating the content of the app from English into Brazilian Portuguese, would not be enough. For them, content would need to include information on Brazilian laws and local public policy. Participants were unanimous in suggesting simple and plain language and easy functionalities, to facilitate SDA usage across different educational backgrounds.

Participants also suggested the inclusion and adaptation of the platform for women with disabilities, including audio-guided versions and subtitles. Moreover, for them, text, audio and images could be also used by all women to record their episodes of abuse within the platform. This could include appropriate fields for typing notes of abuse, recording voice messages, or even taking photos, that could be registered as evidence by authorities. Some also mentioned the possibility of inserting fields to identify or locate the aggressor, for use by authorities if necessary.

Finally, the name of the proposed SDA was a topic of conversation. Initially, the name “I-LOVE” was proposed by our research team. However, participants highlighted the danger that this name could bring to women experiencing IPV. For example, abusers might believe that the app was a dating site, potentially increasing violence risk. After brainstorming in several meetings, two alternative names emerged: “*Eu-Decido*” (I-Decide, in Portuguese) or “*Eu Acredito*” (I-Believe). The research team with inputs from community partners has elected to move forward with the name *Eu-Decido*.

Discussion

PAR was a powerful approach to not only examine the feasibility of an online SDA for Brazilian survivor women, but also to understand its advantages, uncertainties, barriers and suggestions perceived by key stakeholders, staff providing services to survivors and the survivors themselves. As pointed by Fals-Borda (1987), PAR combines knowledge and action for social progress. Smith et al. (2010, p. 1117) conceives PAR as a way to promote social justice with an “explicit focus on power, privilege, and the eradication of oppression.” VAW is a complex social problem, source of oppression, related to power imbalance, male privilege, exploitation and gender asymmetries. To overcome this problem, traditional research approaches may be limited, since the elimination of gender inequities and gender-based violence requires the participation of all societal actors.

In our study, PAR helped us to include the voices of those living and working in the community, namely survivors and staff who care for them at the HBW-Curitiba. Most participants considered that a technology-based SDA is viable and even necessary for Brazilian women, but it is essential to plan and implement safety measures regarding its use. The most important safety concern was monitoring of the survivor by the aggressor, as use of the SDA could increase users’ exposure to IPV.

Previously developed SDAs for women living with IPV, such as myPlan, included safety measures that can be useful for the Brazilian context: a numerical security PIN for women logging in; instructions for entering a “dummy” PIN that redirects the user to alternate content at a cooking website to disguise the true purpose of the app, if the app is discovered and women are forced to log in; and access via web or downloadable app, allowing users to choose the safest method of access (Decker et al., 2020a). An SDA cover website for abused women developed and tested in Australia (i-Decide) did not mention violence or IPV, but only a women’s wellbeing project about an online healthy relationship tool, to avoid attracting attention (Tarzia et al., 2016a). An “exit” or “bail” button that quickly hid the content the user was accessing, and including destroying records of websites accessed, were additional safety measures (Hegarty et al., 2015). Similar safety measures were pointed out as essential in our feasibility study.

Another important concern found in our study was that participants considered necessary to interconnect the SDA with the protection network and services existing in Brazil. We believe that a potential innovation of the Brazilian version of technology-based SDA compared to similar tools previously developed in other countries will be the connection of online users with the HBW. The link with

this OSC that works 24/7 with an interdisciplinary team of professionals ready to care for users, may be a great potential for those who decide to give the first step towards face-to-face support. Other community services may also be linked, such as public health clinics, but the resources need to be established to effectively respond to survivors when they seek help. This would require not only a GPS system for SDA users to locate the available services in their local community, but also the capacity building of those staff who will receive these women in these services. The integration of the SDA into local community services was also suggested in the Kenyan version of myPlan App, including integration with medical, counselling, and legal, to help disentangle women's priorities when facing complex decisions (Decker et al., 2020a).

The adaptation of myPlan for Kenyan women revealed an unanticipated but highly relevant outgrowth of the formative phase. The intervention is poised to function as an important job aid for workers and the other lay professionals that serve as important sources of informal support in global health systems (Decker et al., 2020a). This aspect also emerged in our field research, as many HBW-Curitiba staff did not feel totally secure about the alternatives they could provide for victims. The online SDA in Brazil can also act as a tool for staff, supporting their work and optimizing victim consultations.

A recent systematic review found that web-based approaches to IPV prevention have the capacity to reduce risks, demonstrating effective web-mediated access to telehealth services, online support groups for victims, and changing behavioral expectations through educational programming (Anderson et al., 2019). The review also revealed the low cost of online-based interventions and the personalization of IPV prevention and response programming for minority and marginalized groups that face barriers to conventional IPV prevention and response services. Similar advantages were found in our study. Participants suggest that the SDA can help support women that want to be linked to community services and as a resource for women who are interested in confidentially learning about IPV and services in their community without having to present themselves at the service.

Relationships are complicated and for many women they do not want to leave their partner or end the relationship but rather they want the violence to end. There are multiple affective and emotional issues that make it difficult for women to leave an abusive partner (O'Doherty et al., 2016; Tarzia et al., 2016a, b). However, online SDAs developed and tested in high-income countries (Eden et al., 2015; Tarzia et al., 2016b; Glass et al., 2017; Hegarty et al., 2019) have demonstrated that the use of a SDA can increase women's agency by reducing decisional conflict and increasing use of helpful safety behaviors in situations

where she plans to end, stay or is unsure about the future of the relationship.

Tarzia et al. (2016a, b) explains that the internet can be a plausible method of intervention delivery for IPV that might overcome many of the barriers present in traditional service sectors such as health care settings. Participants of our study revealed that the SDA can be a private resource for women to gain information and reflect on their own situation. Lintvedt et al. (2013) draw attention to the fact that online interventions are constantly available and accessible from any location and at any time if the user has access to internet. This flexibility allows women to access the intervention at their most convenient times when an abusive partner is not present, in contrast to health care services where they must schedule an appointment and may be escorted by their partners. Such approaches may also be more accessible to women who live in remote areas or places with little access to face-to-face services.

Nevertheless, some participants highlighted limitations, such as the internet availability for poor women or the inability of the SDA to provide safety strategies that meet the woman's needs. Indeed, this online SDA does not have the ambition to solve such a complex problem like IPV, nor to replace the existing community support network. Online applications are limited and they cannot prevent violence alone. The purpose of online-based SDA is to provide information and help women to organize a tailored safety plan, but it cannot replace the important role of skilled advocates and other service providers to provide ongoing trauma informed care. New technologies are part of the comprehensive approach to end VAW as described by Anderson et al. (2019) and these technologies emphasize they can optimize not only disclosure of IPV, but also preserve the privacy of women and the confidentiality of information.

Our field research was conducted before the pandemic of COVID-19. The pandemic increased the need for innovative online-based interventions to reach women further isolated from services because of mitigation strategies (social distancing, closure of services and lack of financial resources). COVID-19 has been associated with increased IPV and femicide, including in Brazil (Marques et al., 2020). While women are isolated in their home with an abusive partner, the internet and the SDA may be an essential resource for safety planning. According to official data of the Brazilian Institute of Geography and Statistics (IBGE), currently 80% of Brazilian households have access to the Internet through mobile devices slightly more frequent than computers (IBGE, 2020). Even with high internet coverage nationally, to our knowledge there is no SDA to support women's decisions and safety planning. This reinforces the urgency of safety planning strategies that could be delivered online. Connection to the internet provides immediate and confidential access to both local- and internet-community resources,

increases privacy and anonymity, and connects providers to patients via various telehealth or mHealth mechanisms (Price et al., 2014).

A Cochrane systematic review identified 115 trials testing health-related decision aids (Stacey et al., 2017) and demonstrated that decision aids improve knowledge, create more accurate expectations of possible harms and benefits, increase active decision-making and reduce the proportion of participants who report being undecided. Our intervention aims to build on this framework and on our feasibility study by providing a tool that assists women to increase their information and sense of control by understanding and clarifying decisional conflict, assessing their risk of further violence, and identifying safety preferences in a private and safe setting. This may be particularly beneficial for women who are unable or unwilling to disclose abuse, those unlikely to attend a specialized support service, or those who do not perceive themselves as living in an abusive relationship. An online tool may also facilitate equity of access for groups of women who might otherwise be disadvantaged, such as women from remote locations, women with disabilities, or women who are closely monitored by an abusive partner. Critically, our work provides this support in Brazil, a middle-income location where such tools heretofore do not exist and where femicide and IPV are pervasive.

Conclusions

It is remarkable that although there are numerous public policies to care for women experiencing IPV in Brazil, the data on IPV and femicide are still alarming. This suggests gaps in the implementation of such policies and the need for innovative and sustainable strategies with national coverage. This study showed that an online SDA to support decision-making and safety planning for women living with IPV in Brazil is feasible and can contribute to mitigating this social problem especially in the context of the pandemic that further limits access to needed services. PAR proved to be a powerful methodology to actively engage with and understand Brazilian participants needs and perspectives throughout the study.

Our study had some limitations, the study findings are limited to one of the 7 existing HBW-OSC in one city in a vast and diverse country like Brazil. Another limitation is related to the complexity of the PAR approach. Despite our efforts to bring the voices of our studied community, we recognize that this manuscript was written mainly by researchers with limits on participation by the community of survivors. Nevertheless, the community was engaged in many other steps of the PAR, including ongoing steps of prototype development of the SDA. Our PAR approach continues as we move into the next step of SDA development.

This research shed light on important features for the Brazilian version of the SDA, including safety measures in order to prevent abusive partners from noticing the application on the phone or computer. In addition, the need to interconnect the SDA to the community protection network and services. This study supports the next step which is the development of the SDA with constant input from participants regarding its content, design and functionalities. We aim to develop both mobile application and website SDA versions for abused women to identify how they can act to remain safer in abusive relationships, helping in their decision making, connecting them to the community support network and, above all, in their empowerment and healing process.

Appendix 1 Checklist of items to be investigated in the feasibility study of a Brazilian SDA

- 1) Knowledge and previous experiences about safety planning. (Both face to face and online).
- 2) Usage of internet and mobile applications by local public.
- 3) Familiarity with technology-based resources (broadly) to support women experiencing intimate partner violence (IPV).
- 4) Previous experiences with mobile applications (apps) to support abused women.
- 5) Brazilian feasibility of apps or online platforms to support women in situations of violence.
- 6) Characteristics (design, content, features) of an ideal app to support Brazilian women in situations of violence.
- 7) Advantages of technology-based resources/apps for abused women.
- 8) Queries and concerns raised by participants.
- 9) Barriers and challenges when using a technology-based support application.
- 10) Safety of potential users.
- 11) Recommendations and suggestions for an ideal app to support women experiencing IPV.
- 12) Specific adaptations required for Brazilian women.
- 13) Interest of potential users to get involved in the development of the mobile app with the House of the Brazilian Woman.
- 14) Measures/content already available in Portuguese and required translations and transcultural adaptations.

Appendix 2 Interview Guide

- 1) What is safety planning for you?
- 2) Do women assisted at the House of the Brazilian Woman use internet and/or mobile phone applications?

- 3) Have you heard of any technology-based resource (broadly) to support women experiencing intimate partner violence (IPV)?
- 4) Do you have any experience with mobile apps or online platforms to support abused women?
- 5) In your opinion, could an app help woman who experience violence? How? How could an app help? Tell us more, please.
- 6) Do you consider feasible to use apps or online platforms to support women in situations of violence in Brazil?
- 7) In your opinion, how should an app to support Brazilian women in situations of violence looks like?
- 8) What should be in this app? What features? Which contents? Please, tell us more about it, we want to hear your opinion.
- 9) Which advantages you see using technology-based resources for abused women?
- 10) What suggestions would you give us to enable an application to contribute to safety planning for women experiencing IPV?
- 11) What are the main challenges for women experiencing IPV when using a support mobile app?
- 12) Is it safe for women experiencing IPV to use such an app?
- 13) What recommendations would you give to increase security during use?
- 14) Do you have any other suggestions for this app to support women in situations of violence?
- 15) For this app or website to be tailored for Brazilian women, which adaptations do you think are necessary to attend Brazilian women's needs?
- 16) Would you like to get involved and be part of the development of this app with the House of the Brazilian Woman?
- 17) Any other comments or suggestions?

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Declarations

Conflict of Interest The authors have no conflicts of interest to report.

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