Distribution Agreement

In presenting this thesis or dissertation as a partial fulfillment of the requirements for an advanced degree from Emory University, I hereby grant to Emory University and its agents the non-exclusive license to archive, make accessible, and display my thesis or dissertation in whole or in part in all forms of media, now or hereafter known, including display on the world wide web. I understand that I may select some access restrictions as part of the online submission of this thesis or dissertation. I retain all ownership rights to the copyright of the thesis or dissertation. I also retain the right to use in future works (such as articles or books) all or part of this thesis or dissertation.

Signature:

_____ ____04/20/2023_____

Maria Amália Carvalho Guimarães

"*It Could Save Her Life*": Perceptions of a Mobile Safety Decision Aid for Women Experiencing Intimate Partner Violence in Curitiba, Brazil

By

Maria Amália Carvalho Guimarães

Master of Public Health

Hubert Department of Global Health

Dabney P. Evans, PhD, MPH

Committee Chair

"*It Could Save Her Life*": Perceptions of a Mobile Safety Decision Aid for Women Experiencing Intimate Partner Violence in Curitiba, Brazil

By

Maria Amália Carvalho Guimarães

B.S. in Public Health

B.A. in Spanish & Portuguese

The University of Arizona

2019

Thesis Committee Chair: Dabney P. Evans, PhD, MPH

An abstract of
A thesis submitted to the Faculty of the
Rollins School of Public Health of Emory University
in partial fulfillment of the requirements for the degree of
Master of Public Health in Global Health
2023

Abstract

"*It Could Save Her Life*": Perceptions of a Mobile Safety Decision Aid for Women Experiencing Intimate Partner Violence in Curitiba, Brazil

By Maria Amália Carvalho Guimarães

Intimate partner violence (IPV) poses a severe threat to the health and safety of women globally, presenting an urgent need for accessible and efficient services to address this issue. Online safety decision aids (SDA) are tools that show promise in supporting women experiencing IPV, however little is known about their potential use in low- and middle-income countries (LMIC) and no prior SDAs have been tested in Brazil, a country with alarmingly high rates of IPV and femicide. This study aimed to assess key stakeholders' perceptions of the feasibility of *Eu-Decido*, an app-based SDA developed for use in Brazil. Focus group discussions (FGD) were conducted with staff of a cross-sectoral one-stop center called the House of the Brazilian Woman (HBW), survivors of IPV, and community stakeholders working in the field of IPV (n=20). Qualitative data from FDGs were coded in MAXQDA20 and analyzed thematically using inductive codes. Results from this analysis indicated that most participants considered *Eu-Decido* feasible, highlighting its potential to sensitize survivors to IPV and the inclusion of safety features and visual aids as primary advantages of the tool. HBW staff raised concerns regarding the appropriateness of app length and language for low-literacy survivors and safety risks associated with independent use, advocating for facilitated use of *Eu-Decido* alongside a trained IPV service provider to circumvent these challenges. Survivors, however, praised the confidentiality and flexibility associated with independent use, suggesting that further research should investigate the feasibility of both modalities, including potential integration into primary care settings given the limited availability of HBWs nationwide. Findings from this study provide significant insights into the use of internet-based SDAs in Brazil, emphasizing the importance of centering the voices of survivors in all phases of IPV intervention research and contributing to the growing body of knowledge surrounding how SDAs can be implemented in LMIC to support and empower survivors of IPV.

"*It Could Save Her Life*": Perceptions of a Mobile Safety Decision Aid for Women Experiencing Intimate Partner Violence in Curitiba, Brazil

By

Maria Amália Carvalho Guimarães

B.S. in Public Health

B.A. in Spanish & Portuguese

The University of Arizona

2019

Thesis Committee Chair: Dabney P. Evans, PhD, MPH

A thesis submitted to the Faculty of the

Rollins School of Public Health of Emory University

in partial fulfillment of the requirements for the degree of

Master of Public Health in Global Health

2023

Acknowledgments

First and foremost, I would like to extend my profound gratitude to my thesis advisor, Dr. Dabney P. Evans for the opportunity to work on this project and learn from her expertise. The time, patience, and support she dedicates to her students is invaluable, and I am grateful to hold the privilege of being one of them. I would also like to thank Dr. Marcos Signorelli for his mentorship and assistance throughout the completion of this project. Dr. Evans' and Dr. Signorelli's dedication to advancing human rights in the field of public health have been inspirational, and I am profoundly grateful to them for the opportunity to witness and be a part of this work in a country that means so much to me. I must also express my admiration and appreciation for the participants of this study, the members of the *Eu-Decido* research team, and staff at the House of the Brazilian Woman in Curitiba, Brazil, for without their dedication and work this research would not be possible.

To Kevin– who constantly affirmed my worth and capacity when I doubted myself– the kindness and support you have shown me over the past two years gave me the energy to complete this project. Without your encouragement and companionship, this thesis would have been a lot more difficult to write, and definitely would not have been submitted on time. Thank you to my brother, Lui, for his humor that has always kept me grounded (and humble) and for his dedication to denouncing injustice which has been a constant source of inspiration to me. Finally, to my parents– there are not enough words in English, Portuguese, or any language that adequately convey the gratitude and admiration I hold for you both. Thank you for teaching me to be curious about humanity by celebrating its diversity and challenging its inequities, for these lessons are what motivate me to do this work. My accomplishments are yours, for without you they would not be.

♦

This thesis is dedicated to the survivors in this study who, through their unwavering bravery and selflessness, shared their stories in an effort to bring our world closer to a future free of violence.

Table of Contents

List of Acronyms

CAS	Composite Abuse Scale
CESD-R	Center for Epidemiologic Studies Depression Scale, Revised
DA	Danger Assessment
DCS	Decisional Conflict Scale
DEAM	*Delegacias de Atendimento de Mulher*
DHS	Demographic Health Survey
FRIDA	*Formulário Nacional de Avaliação de Risco*
HBW	House of the Brazilian Woman
IPV	Intimate Partner Violence
IRIS	Internet Resource for Intervention and Safety
PAR	Participatory Action Research
PRM	Psychosocial Readiness Model
PTSD	Post-Traumatic Stress Disorder
PHC	Primary Healthcare
RCT	Randomized Controlled Trial
SVAWS	Severity of Violence Against Women Scale
SUS	*Sistema Único de Saúde*
VAW	Violence Against Women
WHO	World Health Organization

Chapter I: Introduction

Introduction and Significance

Intimate partner violence (IPV) is a complex problem across the globe with significant public health implications. It is defined by the World Health Organization (WHO) as "behavior by an intimate partner or ex-partner that causes physical, sexual or psychological harm, including physical aggression, sexual coercion, psychological abuse, and controlling behaviors" (2013). Globally, approximately one in three (35%) women will experience IPV in their lifetime, and poorer, younger, and less educated women are disproportionately at risk (WHO, 2013). Exposure to IPV has been linked to a vast myriad of negative health outcomes, including post-traumatic stress disorder (PTSD), depression, substance misuse, chronic pain, cardiovascular disease, injury, and death (Brokaw et al., 2002; Golding, 1999; Yang et al., 2006; Smith et al., 2018). Rates of IPV in Brazil are high— as many as 36.9% of women experience physical and sexual violence and 48.9% of women experience psychological abuse during their lifetimes (Garcia-Moreno et al., 2006; Schraiber et al., 2007). In Brazil, a recent analysis of National Health Survey data determined that 69% of women who experienced violence in the last year reported psychological consequences resulting from abuse (Signorelli et al., 2022); four women are murdered by their partner every day, ranking the nation 5th in the world for rates of femicide (Waselfisz, 2015).

Despite the severe health consequences of IPV and high levels of such violence in Brazil, fewer than one in seven (13.9%) Brazilian women who experience IPV ever seek formal services (Signorelli et al., 2022). Challenges in accessing care, lack of material resources, system failures, lack of awareness, and consequences associated with disclosure of abuse have been identified as primary barriers to receiving formal help among women experiencing IPV in Brazil (Evans et al.,

2021), accentuating the need for accessible tools that can circumvent these barriers and connect those at risk with available social support services (Signorelli et al., 2022).

Increasing internet access across the globe (Donner, 2008) has influenced the use of mHealth technologies as a cost-effective manner of supporting healthcare and public health practice, with results of several studies indicating mHealth shows promise particularly in supporting vulnerable populations dealing with stigmatized outcomes such as IPV (Free et al., 2010; Muessing et al., 2020; Saboury et al., 2022). Among the mHealth tools developed for IPV are online Safety Decision Aids (SDAs), evidence-based tools that allows users to assess IPV and associated risks, receive information and support at their convenience, and become connected to local resources (Glass et al., 2015; Eden et al., 2015). Online SDAs circumvent barriers to seeking care by allowing survivors to safely and confidentially recognize abusive and harmful actions carried out by a partner, identify safety priorities for themselves and their family members, and develop a personalized safety plan tailored to their individual circumstances (Dutton, 2004).

Several studies have tested the efficacy of online SDAs in high-income countries (HIC), with results showing such tools have provided women with a greater sense of support regarding decisions about their relationship, decreased decisional conflict, and improved ability to safely exit abusive relationships (Eden et al., 2015; Glass et al., 2017; Ford-Gilboe et al., 2017; Hegarty et al., 2019; Koizol-McLain et al., 2018). High rates of IPV in conjunction with increased internet access make Brazil an opportune setting in which to explore the potential use of online SDAs to address IPV in low- and middle-income (LMIC) settings. Results from a formative study assessing perceptions of the feasibility of the proposed SDA concluded that key stakeholders found this tool to be appropriate and beneficial for women experiencing violence in

Brazil (Signorelli et al., 2022). Results from this study informed the development and design of *Eu-Decido* (I-Decide), a prototype of the first mobile SDA for use in Brazil.

Purpose

While results from trials in the U.S., Canada, Australia, and New Zealand make clear the potential benefits of online SDAs for people experiencing abuse in HIC, only two studies in Kenya and Thailand have evaluated the potential use of this tool in LMIC (Eden et al., 2015; Glass et al., 2017; Ford-Gilboe et al., 2017; Hegarty et al., 2019; Koizol-McLain et al., 2018; Decker et al., 2020; Udmuangpia et al., 2020). Despite promising findings from these studies, our current understanding of the potential role of online SDAs in LMIC remains limited. Additionally, no studies have been conducted in Latin America, a region with high rates of IPV and mobile technology use. To assess whether *Eu-Decido* can effectively serve as the first such tool used in this region, there is a need to gauge the perceptions of key stakeholders— such as IPV survivors and service providers— as to how the prototype can be improved for increased acceptability, feasibility, and safety among users in Brazil. Additionally, there is a need to further refine the current prototype in preparation for future feasibility studies.

Objectives

To create an updated and more appropriate version of *Eu-Decido*, we sought to understand the perceptions of IPV survivors, staff of a one-stop center, and other professionals working in the field of IPV regarding the acceptability, appropriateness, and safety of the current prototype. To inform further adaptations to best fit the Brazilian context, we aim to understand what survivors and the staff that care for them perceive to be the key benefits and barriers to the feasibility of *Eu-Decido,* as well as gain insights as to their recommendations for app improvement.

Chapter II: Comprehensive Review of the Literature

Introduction

The present study is part of a larger study to develop and test *Eu-Decido* (I-Decide), an internet-based safety planning and decision aid for people experiencing intimate partner violence (IPV) in Brazil. This study seeks to examine the perceptions of key stakeholders regarding the overall appropriateness and safety of the current version of *Eu-Decido* through an analysis of qualitative data from focus group discussions with survivors of IPV and staff of the House of the Brazilian Woman (HBW), a one-stop center, in Curitiba, Brazil. Findings from this study will be used to inform further revisions to *Eu-Decido* in preparation for future feasibility testing.

This literature review examines research related to the prevalence of and response to IPV globally, with a geographic focus on Brazil. Additionally, it investigates the use of mHealth technologies—particularly internet-based safety decision aids—in addressing IPV in order to understand the reported benefits of such tools in high-income countries (HIC) and identify gaps for potential future research on the use of SDAs in low- and middle-income countries (LMIC). For the purpose of this paper, we focus on IPV perpetrated by cisgender men towards cis-gendered women within heterosexual relationships.

Violence Against Women

One of the most pervasive threats to human rights is the presence of violence against women globally. As defined by the United Nations, violence against women (VAW) includes "any act of gender-based violence that results in, or is likely to result in, physical, sexual, or mental harm or suffering to women, including threats of such acts, coercion or arbitrary deprivation of liberty, whether occurring in public or private life" (United Nations, 1993).

Feminist theories of VAW, while not uniform, focus on the role of gender and power dynamics within patriarchal societies in contributing to gender-based violence (Dobash & Dobash, 1979; L. Heise, 1998; Yllo, 2005). Considering Connell's theory that gender constructs almost always serve to subordinate women (Connell, 1995), these theories posit that women and girls' secondary status in society and associated norms of tolerance for gender-based violence function as the impetus for VAW. Whereas factors spanning the social ecology (poverty, systemic racism, and alcohol abuse) may explain why some men enact violence, feminist theorists posit patriarchal gender hierarchies explain why women as a class are persistently the target (Heise, 1998). Thus, efforts to effectively reduce this form of violence must be framed in the context of gender equity and women's empowerment. This means recognizing that women are not exposed to violence by chance, but rather as a result of systemic discrimination that must be addressed.

It is crucial to acknowledge that while most VAW research relies on conventional notions of the male/female gender binary, many IPV survivors exist outside of this rigid binary classification. The data cited in this thesis focus on cisgender women, however, there is a wealth of evidence to suggest that IPV rates are much higher for transgender or gender non-conforming women (Garthe et al., 2018; Henry et al., 2018). While this project frames IPV in the context of cisgender women in Curitiba, Brazil, further research and advocacy around interventions related to IPV must consider the unique needs of all women and gender non-conforming individuals.

Intimate Partner Violence

One of the most omnipresent forms of VAW is intimate partner violence (IPV), defined by the World Health Organization (WHO) as "any behavior within an intimate relationship that

causes physical, psychological, or sexual harm to those in the relationship" (WHO). IPV encompasses physical, sexual, and emotional abuse by an intimate partner, as well as controlling behaviors such as stalking and financial abuse (WHO, 2013). Globally, women are disproportionately affected by this form of violence, regardless of socioeconomic status, religion, or culture (Heise, Ellsberg, & Gottemeoller, 1999). Although women can also be perpetrators of IPV (Moffitt & Caspi, 1999; O'Leary & Slep, 2012), scholars have found that men are more likely to use coercive control (Stark, 2007), cause physical harm (Graham-Kevan, & Archer, 2008), and commit intimate partner homicide (Reed et al., 2010). Additionally, global homicide data reveals that women are six times more likely to be killed by an intimate partner than men (Stockl et al., 2013). In light of these inequalities, it is crucial to employ a gender-sensitive framework when investigating and addressing this phenomenon (Reed et al., 2010).

Approximately one in three women experience IPV in their lifetime (WHO, 2013). Because IPV occurs due to a combination of interpersonal and contextual/structural factors (Heise, 1998), women who are economically disadvantaged, live in rural areas, are younger, and are less educated are more likely to experience this form of violence (WHO, 2013). This places women in low- and middle-income countries (LMICs) — where the majority of the world's women live — at particular risk.

To better understand the global prevalence of this violent phenomenon in varying cultural and economic contexts, WHO conducted study involving nearly 24,000 women from 10 different nations. Results from this study found that approximately 30% of women had been physically or sexually abused by a partner in their lifetime (Garcia-Moreno et al., 2005). Similarly, one study estimated the levels of IPV across 46 LMICs using data from Demographic Health Surveys (DHS) from 2010-2017, finding that levels of IPV reported nationally varied widely by country

(from 5% in Armenia to over 40% in Afghanistan). The study concluded that generally, poorer, less empowered, and rural women were more likely to be exposed to IPV. One major limitation of this study was its reliance on data from DHS. Women rarely formally report abuse by a partner, thus the results from this study are likely to be underreporting.

Health Impacts of IPV

IPV has extensive and detrimental impacts on the health outcomes of women and their children. Short-term effects of IPV can manifest as physical injuries incurred from punching, violent shaking, pushing, and strangulation, which have been identified as the most common mechanisms of physical injury among IPV survivors (Sheridan & Nash, 2007). Accounting for 80% of reported injuries among IPV survivors, injuries to the head, face, and neck are so prevalent that health professionals use them as indicators of potential IPV victimization (Sheridan & Nash, 2007; Wu et al., 2010). Injuries to the head and neck (including strangulation) can result in traumatic brain injuries (TBIs) and hypoxic brain injuries (HBIs), with studies determining prevalence rates of 30-74% and 27%, respectively (Kwako et al., 2011). Physical violence by an intimate partner can be so extreme that it results in death. A study of the global prevalence of intimate partner homicide determined that among female homicides worldwide, 38.6% were committed by an intimate partner (Stockl et al., 2013).

There is an abundance of literature documenting the wide variety of long-term and chronic adverse health outcomes related to IPV exposure. Globally, women who have been exposed to IPV have higher rates of physical ailments such as chronic pain, sexually transmitted diseases, hypertension, and diabetes (Breiding et al., 2014; Dolezal, 2009; Li et al., 2014; Mittal et al., 2013). IPV exposure among women also leads to adverse mental health effects such as depression and anxiety (Carlson, McNutt, & Choi, 2003; Hathaway et al., 2000), posttraumatic

stress disorder (PTSD; Golding, 1999; Wuest et al., 2009), eating and substance abuse disorders (Danielson et al., 1998), sleep disturbances (Breiding et al., 2014; Hathaway et al., 2000), and suicide attempts (Devries et al., 2011). Female victims of IPV are also less likely to obtain appropriate prenatal and skilled delivery care. Children of mothers who experience IPV are more likely to die before the age of five, suffer poor growth and development, and are more likely to engage in or be a victim of IPV in the future (Breiding et al., 2014).

IPV Risk Factors

IPV is a multifactorial issue influenced by a plethora of factors at the societal, structural, relationship and individual levels. At the societal and structural levels, exposure to IPV is disproportionately prevalent among sexual and gender minorities (Messinger, 2011), certain racial and ethnic minority groups (Montesanti & Thurston, 2015), and among people with physical or mental disabilities (Breiding & Armour, 2015), highlighting the relationship between IPV and societal marginalization. Social determinants of health such as education and socioeconomic status have also been connected to increased risk of IPV, with impoverished women around the world being more susceptible to violence compared to rich women (Garcia-Moreno, 2005). Individual factors such as age are also related to increased IPV risk, with young women aged 18-24 being the most vulnerable (Breiding et al., 2014).

IPV Interventions

Interventions to prevent and respond to IPV operate at all levels of care. While some operate at the individual level, targeting women experiencing violence, perpetrators of violence, or friends and family of IPV survivors, others aim at specific groups or whole communities. Interventions at the primary prevention level often employ educational tools to address structural

elements that contribute to the perpetration of IPV, such as economic, political, and social factors (Niolon, 2017). Meanwhile, IPV interventions at the secondary level of health care frequently address the knowledge, attitudes, and behaviors of the individual experiencing violence (Bourey et al., 2015). Secondary interventions range from addressing early detection of IPV through assessments and screening (Ahmad et al., 2009), to harm reduction strategies such as safety planning, utilization of decision aids (e.g., Glass et al., 2017), and connection to medical, legal, and other resources that aim to mitigate the negative effects of IPV exposure or prevent future victimization (Thomas et al., 2005). Risk assessments provide a systematic, evidence-based approach for determining the level of danger posed by an abuser and have been shown to reduce risk levels (Nicholls et al., 2013; Belfrage et al., 2011). These measures provide clear, defensible criteria for making decisions about intervention and treatment and can be used to inform professionals, perpetrators, and survivors about the type and intensity of services needed to prevent IPV.

In support of these diverse IPV interventions, scholars have reached a wide consensus regarding the importance of ensuring that interventions utilize survivor-centered approaches to address the complex needs of victims (Cattaneo et al., 2020). Survivor-centered approaches are those that promote dignity, agency, and empowerment by recognizing the unique contexts and needs of survivors and attempting to maximize choice (Davies et al., 2014). Key principals of survivor-centered care emphasize IPV support must be tailored to align with the desired outcomes and aspirations of the individual survivor, delivered in a collaborative manner, and considerate of the specific circumstances, requirements, and coping mechanisms of survivors and their loved ones (Goodman et al., 2009; Kulkarni et al., 2015; Davies & Lyon, 2013). Evidence of a causal link between survivor-centered practices and increased empowerment has led to the

determination of this approach as best practice when developing IPV interventions (Cattaneo et al., 2020).

A crucial element of upholding the principles of survivor-centered care is the recognition that women may be unable or unwilling to leave an abusive relationship (Wood, Glass, & Decker, 2021). This reality presents the need for approaches that aim to enhance safety and minimize harm for women and their families when leaving the violent relationship is not feasible. One of the most widely recommended forms of harm reduction for IPV prevention and response is safety planning, a broad term for strategies that improve safety by increasing a woman's situational awareness and empowering her with safety-enhancing skills (Campbell, 2002; McFarlene, 2004; Wood, Glass, & Decker, 2021). In accordance with the socio-ecological model for violence prevention and response, safety planning recognizes that while the perpetrator bears responsibility for inflicting violence, victims can implement strategies to mitigate harm (Wood, Glass, & Decker, 2021). This is in line with well-established notions that women are not passive recipients of violence, rather they adopt harm reduction strategies to maximize their safety and that of their children (Heise et al., 19998. Such strategies include collecting pertinent information, assessing the current circumstances of a survivor, identifying the types of support and resources required, and creating a plan to prevent and address IPV (Kahraman & Bell, 2017). Safety planning, especially in combination with other IPV prevention and response strategies, proves to be an effective tool in empowering women through their journey to a life free of violence.

Intimate Partner Violence in Brazil

With a population of 214 million, Brazil is the largest country in Latin America and the 7th most populous in the world. Brazil has a Gross National Income of $7,721 per capita,

classifying it as a middle-income country (World Bank, 2021). National statistics indicate that violence against women is a pervasive and far-reaching issue in Brazil. According to the WHO Multi-country study on VAW, 23% of ever-partnered women in Brazil aged 15-49 have experienced physical and/or sexual violence by a partner in their lifetime (WHO, 2005). When considering psychological abuse, this percentage increases to nearly 50% (Schraiber et al., 2007). Violence from partners does not often occur as isolated incidents, with data suggesting that approximately 33% of Brazilian women who experience IPV reporting recurring abuse (Barros & Schraiber, 2017). Prado & Sanematsu (2017) analyzed national statistics to develop a "timer" of VAW, concluding that in Brazil, there were five beatings every 2 minutes, one rape every 11 minutes, one femicide every 90 minutes, 179 reports of aggression a day, and 13 female homicides per day in 2013. Rates of femicide in Brazil are particularly staggering: the nation's rate of 4.8 female homicides per 100,000 women is 2.5 times the global average, positioning it as 5th in the world for femicide (Waselfisz, 2015; Racovita, 2015). Two-thirds (66.3%) of individuals accused of committing homicides against women are their intimate partners, making IPV a major cause of mortality among Brazilian women (Shadow Report of Civil Society, 2007).

Stark disparities in prevalence of IPV exist among Brazilian women. Black and Indigenous women face a significantly higher risk of experiencing IPV or femicide compared to white women (Vasconcelos et al., 2021; Monteiro et al., 2021; Wanzinack et al., 2019). These disparities can be attributed to Brazil's history of colonization and slavery, which have deeply rooted systemic racism into the fabric of the nation (Ribeiro, 2018). Women ages 18-25, with a lower educational level, and with an income lower than one minimum wage are especially at risk of experiencing IPV in Brazil, indicating that risk factors for IPV in this country are consistent

with global data linking age, education and poverty to IPV victimization risk (Vasconcelos et al., 2021; Capaldi et al., 2012).

Response to Violence Against Women in Brazil

The recognition of and response to VAW in Brazil began in the 1980s when the nation joined the international movement for gender equality by signing the United Nation's *Convention on the Elimination of All Forms of Discrimination against Women* (Reichenheim et al., 2006). Following the establishment of the National Council for Women's Rights in 1985, gender inequality was constitutionally recognized, and Brazil joined the *Inter-American Convention on the Prevention, Punishment, and Eradication of Violence Against Women,* also known as the Belém do Pará Convention (Reichenheim et al., 2006; Gattegno, Wilkins, & Evans, 2016). Since then, Brazil has continued to address VAW through a series of legislative and policy changes, with the 2006 Maria de Penha Law on Domestic and Family Violence (Brazilian Federal Law No 11.340, 2006) being the first national law to specifically address IPV. Through this law, the Brazilian government defined types of IPV and established formal procedures to address the phenomenon, including penalties for perpetrators and specialized courts designed to deal with issues related to VAW (Roure, 2009). A 2015 anti-femicide law gave a new definition to femicide, classifying it as a heinous crime and stiffening penalties for those that commit it (Brazilian Law No 13.104, 2015). This law works in tandem with Law No. 14.149, which mandates that women who report instances of IPV to the police complete the National Risk Assessment Form (*Formulário Nacional de Avaliação de Risco*), known as FRIDA (Brazilian Law No. 14.149, 2021). In 2021, Law No. 14,188 and created a penal classification for psychological violence punishable by up to two years in prison. According to this recent provision, actions causing emotional harm to women that disturbs their development or intends

to subjugate or control their actions, beliefs, and decisions by means of threats, intimidation, humiliation, manipulation, isolation, blackmail, limitations on their right to move freely, or any other means that harm their psychological health and self-determination are subject to legal prosecution (Brazilian Law No. 14,188, 2021).

Federal policy initiatives to address VAW have expanded to include the establishment of several forms of specialized public services. The first of which were specialized police stations for women, or *Delegacias de Atendimento de Mulher* (DEAM), which are fully staffed by women premised on the idea that women would feel more at ease discussing their experiences with other women and that they would receive more accurate and gender-sensitive support in the process of reporting instances of abuse. There are currently 450 DEAMs across the country, however many issues related to lack of staff and funding cause women to report having received poor services or being forced to go to a non-specialized police station (Bertho, 2016).

Another public resource designed to address VAW is the House of the Brazilian Woman (*Casa da Mulher Brasileira*) (HBW), established in 2015. The HBWs are a national network of 24/7 one-stop centers providing comprehensive public services to women. There are seven HBWs nation-wide, all of which are equipped with public defender's offices, social assistance programs, health and psychosocial services, and temporary safe housing for women and their children (Almeida et al., 2020). A study conducted by Almeida and colleagues (2020) concluded that between 2016 and 2020, the HBW in Curitiba, the capital of the state of Paraná, served over 50,000 women and perpetrators, with staff reporting positive impacts in the response to IPV such as increased women's empowerment, centralization of resources, and increased support. Findings from this study also illuminated the limitations of the HBWs, focusing primarily on

high demand for services, discontinuous care, and negative health impacts to staff (Almeida et al., 2020).

In areas where specialized IPV services are not available, women experiencing violence often seek care through primary health care (PHC) services, suggesting health care providers who interact directly with women have the opportunity to play a critical role in violence prevention and response (García-Moreno et al., 2013). In Brazil, the unified health system (*Sistema Único de Saúde*—SUS) is an important component of the Brazilian multi-sectoral response to IPV, as it is often where women receive care for violence-related injuries and other negative health consequences of IPV (Campbell, 2002; García-Moreno et al., 2013; Kiss et al., 2012). SUS is a federal healthcare service established by the Brazilian government in 1988 to ensure the population's right to free and comprehensive healthcare (Tikkanen et al., 2020). Approximately 75% of Brazilians rely solely on SUS for medical services (Tikkanen et al., 2020). Survivors of IPV primarily receive healthcare at SUS clinics, as evidenced by a recent study that found of the 13.9% of survivors who reported having sought healthcare, 41.9% did so in primary or secondary healthcare settings within the SUS network (Signorelli et al., 2023). A systematic review of the literature examining the care of women experiencing IPV in SUS settings found that primary barriers include provider's limited understanding of IPV as a health issue, lack of training, scarce intersectoral work, fear, and lack of time (d'Oliveira et al., 2020). They highlighted that in order to adequately care for survivors in PHC settings, providers must recognize IPV as a health problem within the scope of their practice, be properly trained on the issue, and engage in multisectoral work with various sectors involved in the fight against IPV (d'Oliveira et al., 2020).

Despite the presence and promise of services for women experiencing violence in various sectors, high rates of IPV continue to plague the nation. This can be partially explained by survivors' limited ability to access these resources. Kiss and colleagues (2012) investigated women's help-seeking behaviors in Brazil using data from the 2005 WHO multi-country study on domestic violence, finding that only 33.8% of women in São Paulo, the nation's most populous city, who reported experiencing IPV reported seeking help from formal services. Participants reported that primary reasons for not seeking formal help included that they minimized the importance of their experience with IPV, feared their partner, or were embarrassed, ashamed, or afraid they would not be believed (Kiss et al., 2012). Lack of trust in health and legal sectors, shame, and stigma from health providers and legal officials were also determined to be primary reasons for not seeking formal help (Evans et al., 2020; Campbell, 2002) while structural barriers were the major barriers faced by SUS health providers (Evans et al., 2021).

mHealth in Brazil

Widespread access to internet and mobile devices in Brazil make use of mobile health technologies a promising strategy to address the health needs of the population. In 2021, 90% of households in Brazil had access to the internet, with 99.5% of those accessing the internet doing so through a mobile device (Nery & Britto, 2022). Several internet-based interventions have emerged in Brazil targeting health outcomes ranging from urinary incontinence, menstrual cycles, rheumatic diseases, hypertension, and pregnancy (Dantas et al, 2021a; Dantas et al., 2021b; Dantas et al., 2021c; Debon et al., 2020; Rahman et al., 2022). Results from investigations into the use of these online health technologies show that people in Brazil find mHealth to be a promising way to receive health programming.

Online Safety Decision Aids

Safety planning has become more accessible through safety decision aids (SDAs). SDAs are evidence-based interactive tools developed to address safety planning and IPV-related decision-making by helping women assess their risk, identify safety priorities for themselves and their family members, be connected to local resources, and design a personalized safety plan (Dutton, 2004; Glass et al., 2011). As a survivor-centered approach, SDAs recognize that in considering how to respond to IPV, women frequently confront multiple, conflicting priorities involving privacy, children, and financial security. As such, a fundamental aspect of safety planning is the clarification of personal priorities. SDAs help people with this process by "providing information about options and risks, clarifying personal values, and providing guidance (Stacey et al., 2013)." Rooted in decision science, which investigates the processes involved in making decisions and resolving conflicts related to decision-making, SDAs are well-established as an effective tool for increasing active involvement in decision-making processes, supporting informed decision-making, and reducing decisional conflict (Stacey et al., 2013).

In addition to its foundations in decision science, the theoretical underpinnings of SDAs include social cognitive theory (Bandura, 1986), empowerment (Dutton, 1992) and trauma-informed care (Machtinger et al., 2019). Dutton's empowerment model for women who have experienced abuse emphasizes three main components: 1) increasing safety of the survivor and her family; 2) promoting the survivor's ability to make informed decisions about the relationship, relocation, and other safety issues; and 3) healing the health consequences of violence (Dutton, 1992). This model works in tandem with trauma-informed care, which is an organizational framework that recognizes the impacts of trauma and works to integrate trauma-related knowledge into the care process in order to actively prevent re-traumatization (Harris & Fallot,

2001). Together, these approaches prioritize the holistic well-being of survivors and focus on supporting them in regaining control over their circumstances by fostering a sense of agency and safety in decision-making and healing processes.

In order to make SDAs widely accessible, several SDAs have been developed as an online or internet-based resource. Stigma, lack of knowledge of resources, and fears about privacy serve as barriers for women who seek to initiate help-seeking services in person (Fugate et al., 2005). Women with marginalized identities who may face increased financial, linguistic or transportation barriers experience increasingly limited access to conventional in-person or telephonic services (Vinton & Wilke, 2014). Additionally, IPV survivors are often unaware of safety planning services (Westbrook, 2008) and the majority (48.7%-67.8%) never access them, leaving many to navigate potentially hazardous decisions on their own (Ansara & Hindin, 2010; Coker et al., 2000). Internet-based SDAs circumvent these barriers by providing women immediate access to a tailored, confidential intervention at no cost and free from the stigma associated with in-person interventions (Koziol-McLain et al., 2018). They do however require access to mobile technology such as the internet or smartphones, technologies which are increasingly ubiquitous even in LMIC settings. A scoping review of online IPV interventions (n=11) concluded that programs delivered through the internet were effective in addressing safety planning for women at critical stages of planning to or leaving a violent relationship (Rempel et al., 2019).

Online SDAs in High Income Countries

The first online SDA, known as Internet Resource for Intervention and Safety (IRIS), was developed and tested by IPV experts at Johns Hopkins University (Glass et al., 2010). To develop the original version of this interactive, web-based SDA researchers relied on existing

evidence regarding safety planning, their subject matter expertise in IPV, and feedback from IPV survivors and advocates. The components of IRIS were as follows: after answering basic demographic questions, users were asked to indicate which safety behaviors and resources they had already accessed and were provided with a safety behavior checklist. Then, participants completed a low-literacy version of the Decisional Conflict Scale to assess potential changes in their decision-making process before and after using the SDA. Next, users were asked to make a series of pairwise comparisons regarding their safety priorities. To do so, users were presented with various sliding bars and asked to slide the scale towards the factor that was most important to them. Factors included "well-being of her children, her need for affordable housing, childcare and employment, feelings for her partner, desire for confidentiality and privacy about her relationship, and personal safety (Glass et al., 2010)." After receiving a summary of their safety priorities, users were directed to complete the Danger Assessment (DA), a validated and widely used instrument designed to assist women in evaluating their risk of being murdered or seriously injured by their current or former intimate partner (Campbell & Glass, 2009). The DA consists of 20 dichotomous (yes/no) self-report questions that ask women about well-established risk factors for near-lethal and lethal intimate partner violence, producing a weighted score between 0 and 38 that is then converted into a danger level (variable danger, increased danger, severe danger, or extreme danger). Based on the input, users received detailed and personalized messages about their priorities and risk level along with contact information for local advocates (Glass et al., 2010). After receiving feedback from 12 IPV advocates via focus groups and incorporating suggested revisions, the computerized SDA was translated into Spanish.

The second phase of the IRIS study aimed to evaluate the impact of this SDA on abused women's decisional conflict. Decisional conflict is defined as a state of indecision arising from

the difficulty of choosing between competing options that carry the potential for risk, regret, or a violation of one's personal values (LeBlanc et al., 2009). The research team recruited 90 English or Spanish speaking women who reported experiencing physical and/or sexual violence by an intimate partner in the previous year from shelters of domestic violence (DV) support groups. Participants were asked to complete the decisional conflict scale before and after completing the SDA. Results from this initial evaluation found that women felt more supported in their decision (baseline score 39.44 improved to 31.3, $p = .012$) and reported less decisional conflict (baseline score 39.35 improved to 33.01, $p = .014$) after a single use of the SDA (Glass et al., 2010). These findings highlighted the promise that online SDAs presented and was followed by several larger scale studies that aimed to evaluate the longitudinal impacts of this interactive and personalized tool on the lives of women experiencing violence.

The first of these larger studies was a multistate, community-based longitudinal randomized-controlled trial (RCT) conducted by an expanded version of the research team that did the initial testing of this SDA from 2011- 2013 (Glass et al., 2017). Participants were "English/Spanish speaking, reported physical, sexual, or emotional abuse or threats of violence by a current male/female intimate partner in the past six months, were comfortable with computers, and had safe Internet and e-mail accounts the abuser could not access." Different from the initial IRIS study, the research team recruited participants through a wide range of online and in-person mediums rather than from DV shelters and support groups, including additional Spanish-language recruitment strategies to increase enrollment of monolingual Spanish speakers. Participants were blindly randomized to an intervention arm (IRIS) or control arm (traditional IPV safety information website) using computerized blocked randomization. After completing eligibility screening and giving informed consent, participants were sent a

password-protected link to either the intervention or control website, having six weeks to complete the baseline study session. Participants who completed baseline (n= 725) were contacted at six- and twelve-month follow-up to complete self-reported measures. Primary measures for this study included the Decisional Conflict Scale (DCS), safety behaviors, and the Severity of Violence Against Women Scale (SVAWS). Secondary measures were the Center for Epidemiologic Studies Depression Scale, Revised (CESD-R) and the PTSD Checklist, Civilian Version (PCL-C).

Six hundred and seventy-two (n=672) participants completed baseline, six- and twelve-month follow-up, with the majority reporting their abusers were male (89%) and with an average DA score reflecting severe danger (14.36). While the initial IRIS study found the intervention to reduce decisional conflict only among English speakers, results from this study revealed both English and Spanish speakers who completed the online SDA experienced a greater reduction in decisional conflict than controls after one use (both groups reduced DCS scores at six- and twelve-month follow-up, but no statistical difference was found). Improvements in psychological, physical and emotional IPV, depression, and PTSD were observed in both groups over time with no statistical difference between groups. However, there was a 12% increase in safety behaviors found helpful in the intervention group compared to a 9% increase in the control and intervention participants were 10% more likely than controls to have ended their abusive relationship at 12 months. These results present enormous promise, as uptake of even one safety behavior can be lifesaving (Glass et al., 2017).

Following the completion of this longitudinal study, an updated version of IRIS, myPlan, was adapted for use with subpopulations in the US (college women, rural and urban pregnant women, indigenous and minority women, and college women in same-sex relationships), as well

as for use in high income countries (New Zealand, Australia, Canada, and the Netherlands). Each research team drew on the foundational findings from the myPlan formative studies and RCT, additional theories, their own research, and consultations with stakeholders to inform adaptations. Longitudinal RCTs have been conducted and results published for trials in New Zealand, Canada, and Australia. However, each trial utilized a different set of measures to assess the impact of the app compared to a control IPV tool, presenting challenges in analyzing the overall effect of online SDAs on women experiencing abuse. Despite this, results from RCTs highlight important insights as to how online SDAs can be used to support women experiencing IPV.

In New Zealand and Canada, the SDA was adapted with the explicit aim of ensuring inclusiveness and fit for Indigenous women (Young-Hauser et al., 2014; Ford-Gilboe et al., 2017). To ensure iSafe fit the needs of indigenous Maori women, New Zealand researchers iteratively integrated feedback obtained from focus groups with IPV survivors, IPV professionals, and Maori cultural experts (Young-Hauser et al., 2014). For iCAN, the Canadian version, the study team drew on findings from research testing an adaptation of another IPV intervention for Indigenous women to ensure the SDA would be suitable for women facing the most substantial barriers to getting IPV-related support (Ford-Gilboe et al., 2017). Findings from this study were incorporated into iCAN, broadening the app's focus on safety as an ongoing issue for women, including after separation, rather than focusing primarily on risks that arise immediately after abuse (Ford-Gilboe et al., 2017). In Australia, results from an RCT evaluating the effectiveness of a face-to-face counseling intervention in the primary care setting for women who feared their partner, along with components of the Psychosocial Readiness Model (PRM) were used to inform the addition of motivational interviewing and non-directive problem solving

techniques to the SDA (Hegarty et al., 2019). As a result, the Australian SDA, I-DECIDE, differs from myPlan, iSafe, and iCAN in that it can be considered a therapeutic intervention, rather than just a decision aid (Hegarty et al., 2019). To create a version of the SDA for use in the Netherlands, Dutch researchers drew on findings from I-DECIDE and a Dutch online intervention for youth exposed to family violence (van Gelder et al., 2020). Results from a randomized controlled trial testing the effectiveness of SAFE are forthcoming (van Gelder et al., 2020).

Results from RCTs in HIC

While the US-based IRIS trial examined decisional conflict and IPV exposure as primary outcomes, RCTs in Australia, NZ, and Canada relied on mental health indicators as primary outcomes to measure effectiveness of SDA. New Zealand-based researchers Koziol-McLain et al. (2018) were the first to test the effectiveness of an online SDA (iSafe) for women experiencing IPV outside of the US, enrolling 412 women who had experienced IPV in the last six months. In contrast to the IRIS trial, recruitment, enrollment, and consent of participants was conducted completely online for the iSafe RCT. Once enrolled, participants were randomized to the intervention (iSafe) or control arm (standardized list of resources and emergency safety plan) and received a password-protected link to the tool that was available to them throughout the one-year follow-up period. Primary outcome measures for this trial were self-reported depression (CESD-R) and IPV exposure (SVAWS). Secondary outcomes included Safety Behavior Checklist Helpfulness score, Post-Traumatic Stress Disorder Checklist-Civilian Version, Alcohol Use Disorder Identification Test dichotomized, and Drug Abuse Screening Tool. Of the participants who completed the study, 27% were Maori, a notable result given this study's objective to understand the impact of iSafe on indigenous New Zealanders. Results from the

subgroup *a priori* statistical analysis of outcomes by ethnicity revealed that iSafe was effective in reducing IPV at six and twelve months and in reducing depression symptoms at three months only for Maori women. In an exploratory analysis of secondary outcomes, it was determined that Maori intervention participants faced larger reductions in decisional conflict than non-Maori participants. Unlike the IRIS trial, participants in the control arm reported increased helpfulness of safety behaviors, indicating that the safety behaviors included in the US-based checklist may not be suitable for women in New Zealand. This proves to be a limitation of this study and indicates the potential need for certain measures to be tailored to the context of each study location in order to accurately reflect the impact of this online intervention.

The next study to test the effectiveness of the online SDA was I-DECIDE in Australia. In addition to the depression and safety behaviors outcomes used in the IRIS and iSafe trials, the I-DECIDE study examined three novel outcomes: self-efficacy (Generalized Self-Efficacy Scale), decreased fear of partner, and cost effectiveness of the intervention. Recruitment and eligibility criteria for this trial were the same as the iSafe trial. The I-DECIDE intervention included all the components in previously tested SDAs and an additional "healthy relationship" module in which users were provided information regarding healthy relationships and asked to indicate on a sliding scale how healthy her relationship is, her level of fear in the relationship, and her perceived level of safety. After completing the modules, a modified version of the Contemplation Ladder was used to assess the women's awareness of abuse and readiness for action. Based on this assessment, women were either directed straight to their tailored action plan or to a motivational interviewing module designed to help users reflect on the pros and cons of their relationship.

Four hundred and twenty-two (n= 422) women ages 16-50 who screened positive for IPV or fear of partner completed this study. Data were collected online immediately after completing either the I-DECIDE or control websites, as well as at six and twelve months. Results revealed that women in both the intervention and control groups experienced improvement in self-efficacy, depression, and fear of partner at twelve months. However, improvements in self-efficacy were higher for women in the control group, and no differences between groups were observed in terms of changes in depression, fear of partner, and safety behaviors. The results of depression scores mirrored those of the IRIS and iSAFE trials, which did not observe a difference between intervention and control groups in terms of improvements in depression (except for among Maori women in the iSafe trial). These results led researchers to conclude they could not recommend I-DECIDE as an effective tool to reduce self-efficacy and depressive symptoms among IPV survivors, however qualitative findings indicated that women found that interactive and control websites helped them increase self-efficacy, awareness, and feelings of being supported. Differentiating the Australian study from the IRIS and iSafe trials, the I-DECIDE study included a process evaluation conducted to further contextualize trial results. Thirty-two (n=32) participants from both study arms were interviewed about their experience using the website, their perceptions of its impact on their self-efficacy and mental health, and recommendations for improvement. Participants who received the static control website criticized the lack of personalization in their action plans, suggesting that despite the lack of statistically significant differences in outcome measures among the intervention and control groups, online SDAs show promise as an acceptable and effective IPV response tool given their tailored and individualized nature. This study was limited by the lack of subgroup analysis conducted, which could have provided important insights as to how participants in different

subpopulations (different cultural groups, those who are leaving vs. staying in the relationship) would be affected by the website. This is especially important given that the online SDA was effective for certain subpopulations of women in the IRIS and iSafe trials, but not others.

In Canada, researchers conducted a double blind RCT with 462 Canadian women who experienced IPV in the last six months. Primary (depressive symptoms, PTSD symptoms) and secondary (helpfulness of safety actions, confidence in safety planning, mastery, social support, experiences of coercive control, and decisional conflict) outcomes were measured at baseline and three, six, and twelve months via online surveys. Like I-DECIDE, a process evaluation was conducted at the end of the study, however, this consisted of analyzing qualitative and quantitative data from an exit survey rather than interviews. This study surpassed other RCTs by examining differential effects of the intervention among four strata of women: with children under 18 living at home; reporting more severe violence; living in medium-sized and large urban centers; and not living with a partner**.** Similar to the aforementioned SDA RCTs, women in both study arms reported improvements in depression and PTSD, as well as all secondary outcomes, with no difference in changes by group. Although the results of this trial did not support the overall effectiveness of iCAN compared to a non-tailored IPV intervention, subgroup analysis revealed that iCAN was more effective for women in certain strata. Specifically, greater improvements in mental health outcomes and women's experiences of coercive control were observed among women in the four subgroups as opposed to the sample as a whole.

Four longitudinal randomized control trials have tested the effectiveness of online SDAs in mitigating the effects of IPV in the United States, New Zealand, Australia, and Canada. Each trial used a version of the online SDA (adapted from the original IRIS) tailored to the country's context, with trials in New Zealand and Canada tailoring further to fit the needs of Indigenous

women. All trials used a different set of primary and secondary measures to analyze the effectiveness of the online intervention, with most focusing on decisional conflict, recurrence of IPV, mental health outcomes (depression and PTSD), self-efficacy, and helpfulness of safety behaviors. Without analyzing participants subgroups, results across all four trials showed a lack of statistically significant differences between groups, indicating the online SDA was not more effective than a static control website in supporting IPV survivors. However, subgroup analysis revealed that the personalized SDA was more effective compared to the static control websites among certain groups of women: Maori in iSAfe, Spanish speakers in IRIS, and with children under 18 living at home; reporting more severe violence; living in medium-sized and large urban centers; and not living with a partner in iCAN. These findings support the importance of attending to the diverse needs of survivors, suggesting that the personalized nature of this app could be particularly beneficial for certain subgroups. Despite quantitative results producing insignificant differences between intervention and control, qualitative findings showed that women in the intervention groups praised the personalized nature of the intervention, whereas women in control groups criticized the lack thereof in the static control websites. These studies were crucial in better understanding how personalized, internet-based SDAs can support women in their pursuit of a life free of violence and laid the foundation for future effectiveness testing in other settings.

Online SDAs in LMICs

Widespread access to the internet and high rates of IPV in LMICs present low-resource settings as a promising context to test the impacts of online SDAs. Formative work by Wood, Glass, and Decker (2021) reviewed the use of safety strategies for women experiencing IPV in LMICs, noting that among the 16 studies included, women found safety planning strategies

feasible and acceptable. To date, the online SDA has been adapted to fit the needs of women in three LMICs: Kenya, Brazil, and Thailand. Projects in Brazil and Thailand are in formative phases, while results from an RCT testing myPlan Kenya show potential for online SDAs to be an important tool in addressing IPV in LMICs.

To adapt the American myPlan to fit the needs of women in each LMIC, researchers in Kenya, Thailand, and Brazil relied on community-participatory research processes to engage key stakeholders, such as IPV survivors and IPV service providers, to assess the feasibility of the adapted SDA. After consulting with community health volunteers and survivors of IPV, Decker et al (2020) found high levels of feasibility and acceptability of the myPlan app version for Kenyan women. Participants provided recommendations to further tailor the app to Kenya, such as increased visualization of messaging and that community health workers support implementation of the intervention. In Thailand, Udmuangpia et al. (2020) focused on the perspectives of Thai IPV service providers, health providers, and nurses, concluding that the adapted myPlan app was "appropriate for Thai culture, aligned with Thai government policy and resources, and having potential to help abuse survivors." In Brazil, the nature of the feasibility study differed from Kenya and Thailand in that the researchers looked to IPV service workers and survivors at a one- stop center that provides specialized and cross-sectoral services for women experiencing violence (Signorelli et al., 2022). Like the formative studies in Kenya and Thailand, most participants found that the pilot Brazilian SDA, *Eu-Decido* (I-Decide), was feasible and could serve as a beneficial tool for IPV survivors (Signorelli et al., 2022). Participants in the Kenya and Brazil studies emphasized that the adapted SDAs would be especially helpful to women if they were guided through it alongside a health professional or IPV service provider. This theme emerged among participants in the Thai study as well, although

more participants described the appropriateness of this intervention for private use compared to the other two studies.

myPlan Kenya is the first and only online SDA to be tested for effectiveness in a LMIC setting to date. To do so, Decker and colleagues conducted a randomized controlled superiority trial comparing safety-related outcomes at baseline, immediate post-intervention, and three-month follow-up. Contrary to RCTs conducted in HIC which were conducted online, the myPlan Kenya RCT was conducted at three informal settlements in Nairobi, Kenya. Eligibility criteria for this study also differed from RCTs in HIC in that participants had to have experienced physical/sexual IPV or fear of partner in the last three months compared to six, resided in the target community (with no plan to move), and were between the ages of 18-35. In contrast with HIC, this age group was identified during the formative phases of myPlan Kenya as the group with the highest technological literacy rate. Where participants of the HIC RCTs completed the intervention or control website online, myPlan Kenya participants did so on a tablet alongside a trained community health volunteer (CHV). Primary outcomes for this trial were safety preparedness, decisional conflict (DCS), use and helpfulness of safety strategies and IPV experience (Revised Conflicts and Tactics Scale and Women's Experiences of Abuse Scale). Secondary outcomes included resilience (Connor-Davidson Scale), depression (CESD-R), self-blame, recognition of abuse, self-efficacy (Generalized Self-Efficacy Scale), safety-specific self-efficacy and risk for severe/lethal violence (Danger Assessment Scale; intervention participants only), and relationship quality.

A total of 312 participants completed the study, with 51.28% having completed primary school or less and the vast majority (94.23%) were unemployed. Immediately post intervention, safety preparedness and use of helpful safety strategies were higher for intervention participants

as compared with control, while decisional conflict and IPV experience decreased in both groups with no significant between group differences. At three-month follow-up, women in the intervention arm had a greater increase in use of helpful safety strategies and felt they had information needed to make safety decisions. Among women reporting more severe IPV at baseline, women in the intervention group reported significantly greater resilience and helpfulness of the safety strategies they used relative to control participants. “Among women who had previously sought services for IPV, intervention women reported improvements in resilience and helpfulness of safety strategies and a reduction in decision conflict about safety.” The three-month follow up period presents a huge limitation of this study, as it eliminates the study’s ability to speak to the potential long-term effects of this intervention. It is likely that no significant between-group differences in overall depression and IPV were observed due to the short follow-up period, as changes to these outcomes often occur over a longer period.

Online SDAs in Brazil: Eu-Decido

Results from several formative studies have informed the development of *Eu-Decido,* a prototype of the first web-based SDA for use in Brazil. These formative works have involved the adaptation and validation of IPV assessment tools and a preliminary assessment of the perceived feasibility of online SDAs in the Brazilian context.

The first of these was the translation and cross-cultural adaptation of the Danger Assessment (DA) to create the DA-Brazil, which was followed by a mixed-methods triangulation study assessing the instrument’s face validity and comprehension (Evans et al., 2022; Manders et al., 2022). For the latter study, 55 IPV survivors who sought care at the HBW-Curitiba completed cognitive interviews after using the DA-Brazil, with the majority (73.2%, n=41) indicating they found the instrument to be easily comprehensible. Out of the 21 items

contained in the instrument, 14 items (66.7%) did not provoke any questions, indicating a high degree of overall face validity and comprehension. This study also examined the feasibility of using the DA-Brazil among professionals who provide services to IPV survivors. These professionals reported that the DA-Brazil could be effectively used in specialized IPV centers and healthcare settings, highlighting the significance of risk assessment tools for enabling early intervention in cases where femicide is a risk.

Members of the *Eu-Decido* research team were also responsible for cross-culturally adapting the Composite Abuse Scale (CAS), a validated measurement tool used to assess IPV frequency, severity, and typology included in several SDAs (da Rocha et al., 2022). To do so, researchers conducted a literature review of translation processes for IPV programs in English, Spanish, and Portuguese, yielding 15 translation and cross-cultural adaptation studies. This review informed a ten-step translation and cross-cultural adaptation protocol that included: 1) conceptual analysis; 2) double-blind translation; 3) comparison and reconciliation of translation; 4) back-translation; 5) back-translation review and reconciliation; 6) review by an expert committee; 7) comparison of expert reviews and reconciliation; 8) cognitive interviews; 9) user evaluation and reconciliation; and 10) review of the final version by the instrument's creator (da Rocha et al., 2022). The completion of this rigorous protocol yielded a highly reliable version of the CAS in Brazilian Portuguese that was subsequently embedded in the *Eu-Decido* prototype.

Researchers employed a participatory action research (PAR) approach to assess the feasibility of a web-based SDA for use in Brazil by centering the perceptions of IPV survivors and staff at the HBW-Curitiba. Triangulated results from observation, field notes, and in-depth interviews with 28 HBW staff and survivors indicate that most participants considered the SDA feasible, with 89.3% (n=25) reporting they considered the proposed SDA appropriate for the

Brazilian context. They reported several advantages for the proposed SDA including: 1) agility, safety and anonymity in helping women take the first step towards formal protection mechanisms, especially for women who did not wish to be exposed and who failed to look for specialized services in person; 2) an informational tool with safety tips that could help women recognize abusive relationships, since many do not see themselves as living in one; and 3) a tool for accessing community services, helping users to find professional support and connect to direct care. Participants also raised concerns as to the safety risks for users and barriers to accessing such a tool for the most vulnerable women, providing recommendations for safety measures to be implemented within the tool and to improve access for women with limited internet access and literacy levels (Signorelli et al., 2022). Recommendations from participants of this study were collaboratively discussed among members of the research team and later incorporated to create the prototype *Eu-Decido*, the first mobile SDA for use in Brazil and more broadly, Latin America.

Upon opening the current version of *Eu-Decido*, users are greeted with the phrase "you are not alone" and a brief explanation of the tool's purpose. They are then prompted to create a profile by providing basic demographic information. Subsequently, users are directed to the homepage where they can voluntarily complete a series of validated assessments related to their relationship and experiences of different forms of IPV, such as physical, sexual, psychological, technological, and economic abuse, as well as their mental health and coping strategies. Completing the assessments is optional, however the more assessments a user completes, the more personalized safety recommendations will be. Users are then asked to prioritize their safety concerns through a series of pairwise comparisons, where they can slide a bar toward the criterion they consider most important in each comparison. The program then calculates priority

weights and provides immediate feedback regarding the user's relationship, using a color scheme to indicate level of risk (red for high, orange and yellow for intermediate, and green for low risk). This is followed by a summary of the user's priorities and a tailored action plan that includes information about community resources and safety tips for the user and their children. Users can also print or email a copy of their personalized safety action plan to share with relevant parties. Additionally, *Eu-Decido* includes modules on Brazilian laws related to violence against women, an overview of different types of IPV, information on the Brazilian social support network, and a map that provides the closest community resources based on the user's location, such as health clinics, hospitals, and police stations.

Summary

IPV poses a significant threat to the well-being and human rights of people across the globe. Addressing IPV requires interventions at multiple levels, with evidence-based approaches at the secondary prevention level that incorporate principles of survivor-centered and trauma-informed care being essential for assisting women currently experiencing violence. The use of online safety decision aids (SDAs) has shown promise in providing women with an accessible tool that support their decision-making regarding their relationships, reduce decisional conflict, and enhance their ability to safely exit abusive relationships. Preliminary studies have led to the development of the first online SDA for use in Brazil, a nation where high rates of IPV, government action in response to violence against women, and internet access create an ideal context for the development and testing of SDAs in LMIC settings. The current study advances formative work for *Eu-Decido* by looking to key stakeholders – such as IPV survivors and staff of the HBW-Curitiba—to provide their perceptions and feedback on the acceptability, appropriateness, and safety of the current prototype. This work is an essential next-step in

preparing for wide-scale testing of *Eu-Decido*, and will add to the limited literature regarding the use of mHealth SDAs for IPV prevention in LMIC.

Chapter III: Manuscript

"*It Could Save Her Life*": Perceptions of a Mobile Safety Decision Aid for Women Experiencing Intimate Partner Violence in Curitiba, Brazil

By

Maria Amália Carvalho Guimarães

Abstract

Intimate partner violence (IPV) presents a severe threat to the health and safety of women globally, presenting an urgent need for accessible and efficient services. Online safety decision aids (SDA) are tools that show promise in supporting women experiencing IPV, however little is known about their potential use in low- and middle-income countries (LMIC) and no prior SDAs have been tested in Brazil, a country with alarmingly high rates of IPV and femicide. The purpose of this study was to assess the perceptions of key stakeholders as to the feasibility of *Eu-Decido*, an app-based SDA developed for use in Brazil. Focus group discussions (FGD) were conducted with staff of a cross-sectoral one-stop center called the House of the Brazilian Woman (HBW), survivors of IPV, and community stakeholders working in the field of IPV (n=20). Qualitative data from FDGs were coded in MAXQDA20 and analyzed thematically using inductive codes. Results from this analysis indicated that the majority of participants considered *Eu-Decido* feasible, highlighting its potential to sensitize survivors to IPV and the inclusion of safety features and visual aids as primary advantages of the tool. HBW staff raised concerns regarding the appropriateness of app length and language for low-literacy survivors and safety risks associated with independent use, advocating for facilitated use of *Eu-Decido* alongside a trained IPV-service provider. Survivors, however, praised the confidentiality and flexibility associated with independent use, suggesting that further research should investigate the feasibility of both modalities, including potential integration into primary care settings given the limited availability of HBWs nationwide. Findings from this study provide significant insights into the use of internet-based SDAs in Brazil, emphasizing the importance of centering the voices of survivors in all phases of IPV intervention research and contributing to the growing body of knowledge surrounding how SDAs can be implemented in LMIC to support and empower survivors of IPV.

Introduction

Background and Significance

Intimate partner violence (IPV) is a complex problem with significant public health implications across the globe. It is defined by the World Health Organization (WHO) as, "behavior by an intimate partner or ex-partner that causes physical, sexual or psychological harm, including physical aggression, sexual coercion, psychological abuse, and controlling behaviors" (2013). Globally, approximately one in three (35%) women will experience IPV in their lifetime, and poorer, younger, and less educated women are disproportionately at risk (WHO, 2013). Exposure to IPV has been linked to a vast myriad of negative health outcomes, including post-traumatic stress disorder (PTSD), depression, substance misuse, chronic pain, cardiovascular disease, injury, and death (Brokaw et al., 2002; Golding, 1999; Asmundson et al., 1998; Yang et al., 2006; Smith et al., 2018). Rates of IPV in Brazil are high— as many as 36.9% of women experience physical and sexual violence and 48.9% of women experience psychological abuse during their lifetimes (Garcia-Moreno et al., 2006; Schraiber et al., 2007; DataSenado, 2017). In Brazil, a recent analysis of National Health Survey data determined that 69% of women who experienced violence in the last year reported psychological consequences resulting from abuse (Signorelli et al., 2023); four women are murdered by their partner every day, ranking the nation 5th in the world for rates of femicide (Waselfisz, 2015).

Despite the severe health consequences of IPV and high levels of such violence in Brazil, fewer than one in seven (13.9%) Brazilian women who experience IPV ever seek formal services (Signorelli et al., 2023). Challenges in accessing care, lack of material resources, system failures, lack of awareness, and consequences associated with disclosure of abuse have been identified as primary barriers to receiving formal help among women experiencing IPV in Brazil (Evans et al.,

2021; Robinson et al., 2021), accentuating the need for accessible tools that can circumvent these barriers and connect those at risk with available social support services (Signorelli et al., 2023).

Increasing internet access across the globe (Donner, 2008) has influenced the use of mHealth technologies as a cost-effective manner of supporting healthcare and public health practice, with results of several studies indicating mHealth shows promise particularly in supporting vulnerable populations dealing with stigmatized outcomes such as IPV (Free et al., 2010; Muessing et al., 2020; Lelutiu et al., 2018; Saboury et al., 2022). Among the mHealth tools developed for IPV are online Safety Decision Aids (SDAs), an evidence-based tool that allows users to assess IPV and associated risks, receive information and support at their convenience, and become connected to local resources (Glass et al., 2015; Eden et al., 2015). Online SDAs circumvent barriers to seeking care by allowing survivors to safely and confidentially recognize abusive and harmful actions carried out by a partner, identify safety priorities for themselves and their family members, and develop a personalized safety plan tailored to their individual circumstances (Dutton, 2004).

Several studies have tested the efficacy of online SDAs in high-income countries (HIC), with results showing such tools have provided women with a greater sense of support regarding decisions about their relationship, decreased decisional conflict, and improved ability to safely exit abusive relationships (Eden et al., 2015; Glass et al., 2017; Ford-Gilboe et al., 2017; Hegarty et al., 2019; Koizol-McLain et al., 2018). High rates of IPV in conjunction with increased internet access make Brazil an opportune setting in which to explore the potential use of online SDAs to address IPV in low- and middle-income (LMIC) settings. Results from a formative study assessing perceptions of the feasibility of the proposed SDA concluded that key stakeholders found this tool to be appropriate and beneficial for women experiencing violence in

Brazil (Signorelli et al., 2022). Results from this study informed the development and design of *Eu-Decido* (I-Decide), a prototype of the first mobile SDA for use in Brazil.

Purpose

While results from trials in the U.S., Canada, Australia, and New Zealand make clear the potential benefits of online SDAs for people experiencing abuse in HIC, only two studies in Kenya and Thailand have evaluated the potential use of this tool in LMIC (Eden et al., 2015; Glass et al., 2017; Ford-Gilboe et al., 2017; Hegarty et al., 2019; Koizol-McLain et al., 2018; Decker et al., 2020; Udmuangpia et al., 2020). Despite promising findings from these studies, our current understanding of the potential role of online SDAs in LMIC remains limited. Additionally, no studies have been conducted in Latin America, a region with high rates of IPV and mobile technology use. To assess whether *Eu-Decido* can effectively serve as the first such tool used in this region, there is a need to gauge the perceptions of key stakeholders— such as survivors of IPV and IPV service providers— as to how the prototype can be improved for increased acceptability, feasibility, and safety among users in Brazil. Additionally, there is a need to further refine the current prototype in preparation for future feasibility studies.

Objectives

To create an updated and more appropriate version of *Eu-Decido*, we sought to understand the perceptions of IPV survivors, staff of a one-stop center, and other professionals working in the field of IPV regarding the acceptability, appropriateness, and safety of the current prototype. To inform further adaptations to best fit the Brazilian context, we aim to understand what survivors and the staff that care for them perceive to be the key benefits and barriers to the feasibility of *Eu-Decido,* as well as gain insights as to their recommendations for app improvement.

Methods

Research Design

This study uses qualitative methods grounded in Human-Centered Design (HCD). Three focus group discussions (FGDs) were conducted with survivors of IPV, staff of the House of the Brazilian Woman (HBW), a one-stop resource center for victims of IPV, and community stakeholders who work in the areas of IPV. FGDs were conducted from June-July of 2022 at the HBW in Curitiba, Brazil.

Study setting

This study took place in the capital city of Curitiba, located in the Southern state of Paraná. Curitiba is the 7th largest city in Brazil with a population of 3.4 million (*Curitiba Population*, 2022). This metropolitan center reports above-average rates of femicide compared to the rest of the state (Wanzinack et al., 2020). In response to these high rates of violence, a federally funded one-stop center (OSC) known as the House of the Brazilian Woman (HBW) (*Casa da Mulher Brasileira*) offering resources to women experiencing violence was established in 2016 (Alameida et al., 2020). The HBW-Curitiba is one of seven HBWs launched by the Brazilian government in an to effort address high rates of violence against women (VAW) in the nation (Alameida et al., 2020). To meet the multifaceted needs of victims of VAW, the HBW-Curitiba is staffed by an interdisciplinary team of experts specialized in VAW who provide a wide range of services including psychosocial and health care, law enforcement, legal resources, temporary housing, and financial assistance (Alameida et al., 2020). Since its founding in 2016, the HBW-Curitiba has served as the primary resource for victims of IPV in Curitiba, having provided comprehensive services to over 50,000 users since its launch (Alameida et al., 2020).

Population and Sample

Participants for this study included IPV survivors, staff of the HBW-Curitiba, and community stakeholders. Staff of the HBW included members of the administrative, psychosocial support, social work, and specialized police teams. Community stakeholders were professionals in the fields of law, healthcare, and informatics with a history of engaging with IPV-related work. By including an intersectoral group of professionals we maximized the diversity of disciplines to gain a holistic perspective of how to appropriately tailor an IPV prevention tool to a low-and-middle-income country (LMIC) context. To be eligible for participation in this research, participants had to be older than 18, have a smartphone, and be able to read and write in Portuguese. IPV survivors had to have sought care at the HBW and be deemed not in immediate risk of violence after being evaluated by the HBW's psychosocial department. HBW staff had to be employed at the HBW and community stakeholders had to have a history of engaging in IPV research or work in a professional capacity in Curitiba.

Instrument

The research team developed an original semi-structured FGD guide that was used for all three FGDs. This guide consisted of six domains: (1) positive aspects of the app; (2) aspects of the app that could be improved; (3) parts of the app that should be eliminated; (4) usability of the app; (5) evaluation of app graphics and presentation; (6) suggestions and recommendations for improvement. Probing questions were used to gain further insights.

Procedures

Three focus group discussions (FGD) with up to seven members of key stakeholder groups were conducted from June–July 2022 in person at the HBW. Participants were purposively recruited by members of the local research team and through flyers distributed at the

HBW. FGDs were composed of a mixed variety of members of each stakeholder group. After obtaining verbal informed consent, participants were asked to download the Android or iPhone version of *Eu-Decido* on their smartphone and were given one hour to navigate through each segment of the app. Participants were able to ask the facilitators questions throughout this process. Using the FGD guide, facilitators solicited feedback regarding the design, navigation, and content of each section of *Eu-Decido*, asking participants to bear in mind their respective areas of expertise. To maintain a non-hierarchical relationship with participants, facilitators encouraged questions, criticisms, and suggestions. A portable recording device was used to record FGDs, which were then uploaded to a password-protected cloud that was only available to the study team. Using Microsoft Word's audio transcription feature, FDGs were transcribed verbatim in Brazilian Portuguese. A member of the study team who is a native Portuguese speaker deidentified and cross-checked transcripts to assure their accuracy. Deidentified transcripts were transferred to MAXQDA in preparation for analysis.

Data Analysis

Using an inductive methodology, the author created a codebook in English that defined and illustrated patterns and common themes found across the data. To develop the codebook, the author became familiar with the data by closely reading each transcript and making notes of initial codes and emerging themes. Initial codes were used to begin the coding process, and the codebook was modified as coding progressed in a process known as open coding. Data were coded inductively to identify patterns that appeared throughout the raw data. Coding was utilized to identify common aspects that were liked or disliked about the app as well as suggestions for app improvement. Examples of codes included: “positive aspects of the app”, “negative aspects of the app”, “suggestions/recommendations”, and “cultural/contextual factors.” Examples of

subcodes included: “app structure”, “complex language”, “repetitive questions”, “easy to navigate”, and “supports self-realization.” To get a deeper understanding of the data, thematic analysis, which is based on theme recurrence and the presence of patterns, was used.

Ethical Considerations

IRB approval for this project was obtained by the IRB of the Federal University of Paraná and the city of Curitiba (CAAE 89411818.4.0000.0101- Plataforma Brasil). WHO guidelines for conducting research on violence against women were followed (WHO, Ellsberg & Heise, 2006). Among IPV survivors, only those deemed not to be in immediate crisis after being evaluated by the psychosocial department were included in order to maximize safety. Facilitators expressed throughout the FGDs that participation was completely voluntary and optional, and all participants could cease participation at any time.

Results

All study participants (n= 20) identified as female and were between 32 and 65 years of age, with an average age of 48.5 years. Nearly two-thirds (70%) of the sample identified as white (n=14), 20% identified as mixed-race (n=4), one participant identified as Black, and one as Asian. Participant household monthly income was evenly distributed with 25% of participants reporting a monthly income (MI) of between $250-500 (n=5), 20% between $750-1,250 (n=4), 25% between $1,500-2,500, 25% with an MI of more than $2,500, and one participant reporting no income. More than half of the sample (60%) had received a graduate education and the remaining participants (n=8) reported completing at least high school. Nearly half (40%) of the sample had no religious affiliation (n=9) while 35% reported being Evangelical/Protestant (n=7)(Table 1).

Table 1. Demographic Characteristics of Focus Group Discussion Participants

Characteristic	Category	n	%
Gender			
	Female	20	100%
	Male	0	0%
Age			
	30-39	6	30%
	40 -49	8	40%
	50- 65	6	30%
Race			
	Asian	1	5%
	Black	1	5%
	Mixed- race	4	20%
	White	14	70%
Educational Attainment			
	High School Degree	4	20%
	Undergraduate Degree	4	20%
	Graduate Degree	12	60%
Monthly Income			
	No income	1	5%
	$250-500	5	25%
	$750-1,250	4	20%
	$1,500-2,500	5	25%
	More than $2,500	5	25%
Religious Affiliation			
	Catholic	2	10%
	Evangelical/Protestant	7	35%
	Spiritualist	1	5%

	Umbanda/Candomblé	1	5%
	No religious affiliation	8	40%
	Not answered	1	5%
Disability			
	Auditory	2	10%
	Physical	1	5%
	None	17	85%

Participants represented a wide range of HBW staff and professionals from various fields of expertise. HBW roles represented by this sample included the HBW director, panic button administrators, a psychologist, a social worker, administrative services, and members of the Maria da Penha Patrol. Among professionals, there was one informatics professor, a law professor, a medical student, a nurse, and a local government worker (Table 2). Some of the survivors of IPV either worked at the HBW or occupied another profession that awarded them a dual role in this study.

Table 2. Professions of Focus Group Discussion Participants by Group

Profession		**n**	**%**
Survivors of IPV			
	No profession reported	1	5%
	Nurse	1	5%
	Retired Nurse	1	5%
	Professor (unspecified)	1	5%
	Artist/ caretaker (informal)	1	5%
	HBW Director	1	5%
	Public Social Worker	1	5%
Total		**7**	**35%**
House of the Brazilian Woman Staff			

	Panic Button Administrator	2	10%
	Psychologist	1	5%
	Administration	1	5%
	Social Worker	1	5%
	Maria da Penha Patrol	2	10%
Total		**7**	**35%**
Other Professionals			
	Informatics Professor	1	5%
	Nurse	1	5%
	Lawyer	1	5%
	Professor (unspecified)	1	5%
	Not answered	3	15%
Total		**7**	**35%**

Of the 20 study participants, 7 (35%) reported having personal experiences with IPV. Of the survivors included in this study, four reported having left their abusive relationship within the last two years and two were widowed. One of the survivors that had left their abusive relationship less than one year ago was pregnant at the time focus group discussions were conducted (Table 3).

Table 3. IPV Experience and Relationship Status of Focus Group Discussion Participants

Relationship Status		**n**	**%**
Survivors of IPV			
	Divorced (less than 1 year ago)	2	10%
	Divorced (more than 1 year ago)	1	5%
	Separated (less than 1 year ago)	2	10%
	Widowed	2	10%

Total		**7**	**35%**
Other Participants			
	Divorced (more than 1 year ago)	1	10%
	Never partnered	2	10%
	Married	8	40%
	Dating	1	5%
	Not available	1	5%
Total		**13**	**65%**

Using Eu-Decido with Professional Support

Survivors and HBW staff expressed concern for the emotional toll answering the questionnaires might have on survivors, and suggested that they be accompanied by a professional at the HBW to offer support during this process. To illustrate the severity of violence that survivors often endure, one HBW staff member noted, "*When the app says here, 'how many times were you sexually abused?' she will put 'many.' 'Has he ever hit you, strangled you?' 'Yes.*'" She explained that answering these questions forces one to confront the severe violence experienced head-on, and the emotional toll this causes could make it difficult for women to fill out the questionnaires alone. A survivor echoed this sentiment when she expressed,

> *"But people arrive here with 1,001 things on their minds, right? They [the abuser] take you out of your balance point, a lot, because you, at least I was persecuted in every way, you know? So, we get really shaken, you know? So even to answer all those things its heavy too. The person does not have a structure, there is no one close, you know?"*

Participants explained that for some users, interacting with the content in *Eu-Decido* might be the first time they reflect on certain aspects of their relationship, potentially causing them to reach the difficult realization that their relationship is abusive. Participants noted that having a professional facilitate the use of *Eu-Decido* alongside the user would provide survivors with needed support as they face this emotionally-taxing awakening. HBW staff noted that having this

kind of support from a professional would be especially important for women of lower socioeconomic statuses who experience these same emotional burdens and may need literacy-related support.

Overall, participants emphasized the need for professional support during the use of *Eu-Decido* due to the emotionally-taxing nature of answering the questionnaires and highlighted the potential for the app to serve as a tool for survivors to reflect on their relationship and recognize the presence of abuse with the help of a professional.

Self-reflection and Sensitization to IPV

Participants described *Eu-Decido* as a tool that could help women experiencing IPV reflect on their relationship in a way that sensitizes them to the abuse they are experiencing. Throughout all focus groups, survivors and HBW staff mentioned this is especially important considering many survivors grow accustomed to violence and normalize it, thus preventing them from recognizing it as abuse. One survivor noted how *Eu-Decido* can help combat this normalization,

> *"Something that I found interesting in the application is precisely that people remember those questions, realize, start to feel that they have lived, experienced that. Of course, there are some things you can't miss, right? But sometimes, um, sometimes you don't realize it, you even end up thinking it's normal."* (Survivor, FGD2)

Participants described the process of completing the questionnaires in *Eu-Decido* as an opportunity for survivors to pause and reflect on their relationship, allowing them to view their situation in a different light, realize things they were not able to before this reflection process, and interrupt the normalization of violence by recognizing it as abuse. One survivor described that when she was in an abusive relationship, she initiated this process of reflection through writing, and later compared this strategy to the reflection process initiated by *Eu-Decido.* She

explained how writing down her experiences not only helped her reflect on her situation but also document it, a process that helped her combat feelings of self-doubt, confusion, and guilt that arose from being in an abusive relationship,

> *"I didn't have family support, I didn't have friends, I didn't have this space here. What I had was nothing. I created a system for myself, you know. It's just that, every day I only saw aggression, and when dawn came, I could be hurt, I could be all swollen from having cried and I questioned myself if the issue was that I had done something or him? I started reversing and blaming myself, saying it was my fault. Then I decided to write. So much so that when I decided to leave the house, you know, I stayed like that for a while, talking to him with papers in hand. I had paper in hand and a pen. I wrote everything, everything. When I questioned myself about what I was feeling, when I tried to blame myself, I would go there, 'no, you felt that way,' you know? Affirm myself, strengthen myself, you know? Not let them take you away from you, you know? I started trying to look at myself and respect myself. Because you start to lose respect for yourself, confidence in yourself and you start to not believe that you are living that. That it's not possible that someone is doing that. You did something to make it happen, but no! Sometimes you don't have to do anything, you know? So it was like, pretty heavy. It was crazy. I would pick it up and look at him like, and he- 'no! It's written here, you said it, I said it, I felt that way. It's not possible, there's no way.' As much as my head, my feelings wanted to say the opposite, it was there, in my handwriting, you know? One thing that helps a lot is this, because the woman needs it a lot, because she doubts herself a lot."* (Survivor, FGD3)

Participants emphasized the value of this process and drew comparisons between this documentation and reflection process that *Eu-Decido* allows for,

> *"Survivor 1: At the beginning of the abuse, we don't notice, we don't know. People start to think they are crazy, they really go crazy. But it helps, it helps a lot. You start, 'wait a minute, let me see that app', then you come here, you say, 'no, it's wrong.'*
> *Survivor 2.: Yes, you become emersed in that myth. You become a spectator of yourself and you realize this here is not right, right?*
> *Survivor 3: Actually, [Eu-Decido] looks a lot like when I would write, that's what I was doing. It was the same thing, only I wrote it down, right? Here it is already here and the person goes there and sees it and says 'no, this is wrong,' right?" (Survivors- FGD3)*

Many survivors noted the burden of dealing with abuse alone, without informal support from loved ones. One participant expressed that the process of self-reflection that *Eu-Decido* encourages can help women feel more secure and less alone in situations where they do not have support. One survivor shared,

> *"And I think that in addition to helping the woman, it will make her feel safer and the guy more intimidated, if he knows that you have a possibility to protect yourself with more agility, you know? Like 'I'm not, I'm not alone, it's not that simple,' you know?"*

Participants further emphasized the importance of this reflection/realization process supported through *Eu-Decido* by identifying the ideal users for this tool are women who are at imminent risk of experiencing further violence without realizing it, concluding that using *Eu-Decido* could be lifesaving,

> *"Participant 2: For the type of woman I see use for this is the one who is a little bit in the middle of the turmoil, but is in imminent risk without realizing it. It is a little before your realization... [Participants agree]*
> *Participant 3: And that it, it, it would have been useful to the one who didn't realize it and...*
> *Participant 2: And even save her life."*

Two participants expressed appreciation for this aspect of *Eu-Decido* but felt survivors had a more pressing need for emergency help. One survivor noted,

> *So, for information, to see if you're really being abused or not, to report it, see if you're being threatened, or if you're serious in your relationship, I think it's important, I'd give it a five [out of five]. But for matters, like, that help me with my security... I wouldn't even give a grade because I don't see anthing. I need more security... I kept reading there and I was like 'okay, okay, but what about the help?' I need help. When a woman has an extremely violent relationship, she reads everything there, but she needs help, okay?*

This concern came up again when another participant mentioned "*the woman that is locked in her bathroom will not be able to answer all of these questions*." These concerns were met with an explanation by other participants that *Eu-Decido* is not intended to be used in emergency situations, leading participants to recommend the addition of a pop-up notification at the beginning that discloses the tool is not intended to be used in emergency situations, and that if the user requires immediate help to call the appropriate local authorities.

Overall, participants found that *Eu-Decido* has the potential to be a valuable resource for women who may be experiencing confusion and uncertainty about their relationships by offering

them a clear and accessible way to understand and identify different types of abuse and how they may manifest within their relationship. A few participants felt the app needed to provide emergency help, highlighting the need to incorporate clear messaging regarding the purpose of *Eu-Decido* into its interface. They described this as a necessary and even lifesaving tool for those experiencing intimate partner violence.

Usability for Survivors

Participants praised the usability and clear information in *Eu-Decido*, stating it was easy to use. Out of 20 participants representing a diverse age group and varying levels of digital literacy, 95% (n=19) rated the usability of *Eu-Decido* as 5 out of 5 with five representing “very easy to use.” One 65-year-old participant expressed difficulty navigating the tool, explaining that she had limited experience using her smartphone. An HBW staff member said that this might be a challenge for other older survivors, which the HBW had increasingly seen more of. Participants agreed that for those with basic technological literacy skills, *Eu-Decido* is easy to understand and use.

Participants attributed the usability of *Eu-Decido* to the organization of content and the visuals included. They described the visuals as impressive, pretty, joyful, and cool, adding that the images helped make the content easy to digest and understand. This was especially true for the priority setting activity and risk assessment; survivors and HBW staff expressed appreciation for the color scale assigned to each level of risk in the DA-Brazil tool. Participants stated that the content included in *Eu-Decido* was highly relevant and well-organized, contributing to the overall usability of the tool. One survivor said that the information and resources section was especially valuable because the information provided, "*addresses issues that really happen*,”

such as the need for safety planning and information about digital abuse, patrimonial violence, and legal abortion.

Eu-Decido received positive feedback from survivors, HBW staff, and professionals regarding its usability, with 95% of participants rating it as very easy to use. Participants attributed the tool's usability to its well-organized content, impressive visuals, and relevance to addressing issues experienced by survivors of IPV.

Usability for HBW Staff

Given the high relevancy of the *Eu-Decido* content, HBW staff mentioned that *Eu-Decido* would be a valuable tool for staff to disseminate amongst survivors seeking IPV-related services at the HBW. Staff also said they felt the use of *Eu-Decido* in the HBW could provide much-needed support to staff as they navigate institutional challenges, particularly those related to the lack of integration between the various HBW departments. They suggested having HBW staff who work directly with survivors use *Eu-Decido* as a digital intake form which would be uploaded to a centralized database and help unify the departments. Without this centralization, survivors must explain their situation each time they visit a distinct department, forcing them to repeatedly engage in the emotionally taxing process of recounting their violent experiences. When discussing the toll of having to repeat your story, one survivor noted,

"G*oing through all this screening is psychologically burdensome... because it seems that you relive things that you lived in the past that you never wanted to remember again, you know?*"

An HBW staff member added that this process is especially burdensome given that many women go to the HBW at the height of violence. She explained that having to repeat their story several times, especially in moments of severe psychological distress, may further the suffering

and traumatization of survivors, further promoting the need and potential for tools like *Eu-Decido* to reduce the burden of triage processes.

HBW staff added that the DA-Brazil in *Eu-Decido* would be an efficient and standardized way to determine who receives protective measures. Currently, it is up to individual staff at the HBW to subjectively decide whether a woman gets this protective measure. Because staff judgment often does not align with the needs and/or desires of survivors, HBW staff explained that they often see women with protective measures in place who say it was forced upon them against their desires. This results in the ineffective allocation of this measure, which one HBW staff noted is especially problematic given the many women who need it,

> *"I think this risk evaluation is essential for preventive measures, because it's not every woman who needs a protective measure and the thing has become too trivial. It has become a situation where you end up, you don't attend to that woman who really needs it."*

Participants described that using the DA-Brazil scores could resolve this issue by providing a scientifically validated and standardized way of allocating protective measures based on risk, which staff said would relieve them from the pressure of having to use their own judgement and provide a greater sense of security and confidence in their decision to assign this to someone.

Length and Language as Barriers to Feasibility

Participants agreed that the length of and language used in *Eu-Decido* were potential barriers to feasibility for survivors with low literacy levels. HBW staff noted that the majority of women served by the HBW come from "*humble*" backgrounds, and because of this "*nine out of ten won't fill this out, no way*," according to one HBW staff. Another HBW staff member added that just seeing how many questionnaires are included in *Eu-Decido* could deter survivors with low-literacy levels from using it at all, explaining that they sometimes witness their struggle to

fill out the forms at the HBW. In response to this, a survivor emphasized the value of the tool despite its length,

> *"Is it time consuming to fill in? It is. But I think it's positive because the woman realizes several things there that alone she couldn't. Let's imagine a context where person has no information about this. Maybe she didn't fill everything in at one time. She goes in, leaves, gives up. But if she persists here, persists, she will have complete information too."*

HBW staff expressed concern about the vocabulary utilized in some of the *Eu-Decido* content, noting that it was not appropriate for the demographic of women they primarily serve. While several participants suggested the language used in *Eu-Decido* was too complex in general, two participants provided specific suggestions for lexical modifications. These included changing the term "loss of consciousness" in the Cerebral Lesion Questionnaire to a simpler term like "fainting," and changing "amphetamines" in the DA-Brazil to "meth" or other slang terms for the drug. Overall, the *Eu-Decido* language was deemed "*academic*" and more suitable for individuals belonging to the middle class or living in the "*first world*." Additionally, participants of the study reported that the use of such language had the potential to discourage women from utilizing the app. Instead, they suggested that using language that closely mirrors that of the users would enhance their motivation to engage with the tool,

> *"The more you can speak people's language, the more they will feel motivated to use it... Because if there's one word where she already says, 'oh my God,' then she gets discouraged and doesn't use it.*"

To address these challenges, participants suggested simplifying the language used and reducing the number of questions or questionnaires embedded in *Eu-Decido.* To enhance feasibility specifically related to the length of *Eu-Decido*, participants suggested incorporating a visual cue to display the progress of the user in completing the questionnaire. Additionally,

recommendations were made to integrate a pop-up notification informing the user of the option to save their responses and resume later instead of completing all the questionnaires at once.

Safety Benefits and Risks

Overall, participants appreciated the safety features of *Eu-Decido* while also highlighting areas for improvement to fully support user safety. Specifically, survivors and HBW staff expressed concern regarding the risk of an abusive partner discovering that their partner is using *Eu-Decido*, which they perceived as the biggest threat to user safety. Some survivors reported that this threat might be so significant that they may feel scared to use *Eu-Decido*, and an HBW staff member further emphasized the severity of this threat with her statement, "*But if you have the application there, it's going to end in shit regardless.*" However, a professor countered this by noting that *Eu-Decido* is password-protected and has a generic icon, meaning a partner would be unable to identify the purpose of the tool without entering the password. Participants also appreciated the safety exit button, which was noted as another crucial feature that supports user confidentiality and safety.

To further mitigate the safety risks associated with the use of *Eu-Decido*, participants suggested sending a copy of the results to a trusted person's email and/or the HBW rather than the user's email. Participants noted that abusers often monitor their victim's email, and by giving the option to send the results to someone else, rather than themselves, the risk of having the abuser find out would be reduced. They mentioned this would allow a trusted individual to monitor the user's situation and offer support, thus preventing the woman from having to deal with abuse alone. Furthermore, one survivor noted that sending a copy of the results to a third party provides written documentation of the woman's situation in case something happens to her, thereby serving as proof that she was experiencing abuse and sought help,

> *"From the moment the woman filled this out, it automatically goes to her people's preferred email and any other emergency contact. You may have an agreement with I don't know who or a family e-mail. Because the woman runs the risk of printing this out and nobody has access to it if something happens to her. At least it's proof that she was going through something that she sought to know something about. Because sometimes, the woman experiences all this in silence, doesn't even go to the police station or anything. And in her moment of intimacy, she answers a questionnaire like that....If you send it to a third party, she will already be taken care of in a way. Or if something is really going to happen to her, she already has a history of what was happening, because she filled it out of her own free will, you know?"* (P1- Survivor)

Participants highlighted the confidential nature of *Eu-Decido* as a key factor in supporting user safety. Participants reported that women can use *Eu-Decido* whenever and wherever they want, without fear of being identified, thereby mitigating the risks associated with seeking in-person support due to fear of stigma and shame associated with IPV. However, despite the reported benefits of using *Eu-Decido* independently, participants noted they did not outweigh the reasons that caused them to deem professional support as a necessary aspect of ensuring the feasibility of *Eu-Decido* among survivors in Curitiba, Brazil. They noted that although independent use would increase accessibility for those who are unable to receive in-person services, participants remained confident that users would require professional support to help low-literacy survivors navigate the tool and support them as they deal with the emotional burdens of confronting experiences of abuse.

Discussion

This study provides an analysis of qualitative data from focus group discussions to examine the feasibility of *Eu-Decido,* an adapted online safety decision aid for women experiencing IPV. The findings from this study provide insights regarding overall acceptability, potential challenges, and recommendations to enhance feasibility among survivors of IPV and staff of the House of the Brazilian Woman (HBW) in Curitiba, Brazil.

Applying principles of Human-Centered Design (HCD) by incorporating feedback from key stakeholders such as survivors, HBW staff, and professionals proved to be an effective method to assess perceptions surrounding the usability, acceptability, and safety of *Eu-Decido*. These participants offered valuable insights as to how *Eu-Decido* could be applied in the context of Curitiba, Brazil, helping to fortify relationships between the research team and HBW staff and advancing the body of research investigating the use of online SDAs to address IPV, particularly in an LMIC setting. While professionals did not contribute significant perspectives related to their particular fields, their presence was important for the purpose of community buy-in. Given that IPV is a complex issue fueled by deeply rooted systems of oppression, researchers must deploy approaches that actively combat power imbalances by centering the voices of those most imminently affected. This study does so by relying on the expertise of those living with IPV and those serving them in informing adaptations to *Eu-Decido*.

Overall, participants deemed *Eu-Decido* a valuable tool to support survivors experiencing IPV, emphasizing the need for facilitated use alongside a professional trained in providing services to survivors to maximize acceptability and safety. Internet-based SDAs were originally developed and tested in high-income countries (HIC) for confidential and independent use, however findings from the present study along with those of formative studies in Kenya and Thailand suggest facilitated administration may be more appropriate for LMIC contexts.

In the present study, HBW staff acknowledged the benefits of independent use but felt strongly that low-income survivors, which make up the majority of those they care for, would be discouraged or unable to use *Eu-Decido* independently due to limited literacy levels. Facilitated use of *Eu-Decido* alongside a professional may be especially important in the Brazilian context given participants' concerns regarding the length of and language used in the app and the

challenges associated with modifying validated scales. There was a consensus among participants that the language used in *Eu-Decido* was overly complex and the tool took too long to complete, and they suggested simplifying terminology and shortening the content overall. While recommendations to change specific terminology or remove certain questions occurred in individual instances and were not common across the sample, they bring to light important concerns regarding modifying scales in *Eu-Decido* that have undergone thorough adaptation and validation processes. The Danger Assessment, for example, underwent a community-based content validation that produced the DA-Brazil (Manders et al., 2022), which was further authenticated through a study assessing its' face validity and comprehension among IPV survivors and HBW staff in Curitiba (Evans et al., 2022). The latter study produced an analysis of qualitative data from 56 cognitive interviews with survivors and staff that indicates 73.2% (n=41) of participants found the DA-Brazil easy to understand (Evans et al., 2022). The rigorous validation processes that scales like the DA-Brazil and Composite Abuse Scale (CAS) have undergone indicate they have been scientifically determined to be most accurate in their current form, meaning any changes made to these scales— such as shortening the questionnaires or changing the language— could potentially affect their validity and reliability. This suggests facilitated use of *Eu-Decido* alongside a professional may be appropriate in the Brazilian context to ensure users can ask questions about terms they do not recognize, rather than modifying validated scales and compromising their validity. In this way, facilitated use of *Eu-Decido* offers the potential to optimize user comprehension and engagement with content while upholding the scientific rigor of the assessment tools included in *Eu-Decido.* Additionally, scales deemed of lower priority by key stakeholders can be removed entirely to streamline app content without modifying questionnaires. Concerns regarding the length of the app also arose in the formative

phases of the adaptation of myPlan for use in Kenya, where participants suggested revising the app content to be more concise (Decker et al., 2020). To respond to concerns about the length of *Eu-Decido* without modifying questionnaires, further research must be conducted to prioritize or rank the scales and gain a better understanding of which scales should be removed to increase feasibility.

Perceptions of HBW staff regarding the appropriateness of language used in *Eu-Decido* for the demographic of women they serve provided important insights as to whom researchers should be asking these questions to. HBW staff seemed to perceive the literacy levels of the survivors they serve as extremely limited, with one stating they would not be able to use *Eu-Decido* independently because some "*can't even write their name*." However, literacy data from this region indicate Curitiba has the highest literacy rate (96.86%) and the best basic education quality out of all Brazilian capital cities (ISMIR, 2013). This discrepancy introduces the possibility that HBW staff's perceptions of survivor literacy levels is impacted by potential biases arising from racial and socioeconomic differences. Focus groups included survivors and HBW staff, presenting the possibility that survivors did not feel comfortable speaking against the perceptions of HBW staff. Of the HBW staff included in this study, 75% reported monthly incomes 3-5 times the national average, and all but one were white, whereas the women they serve are generally poorer and more racially diverse. Brazil's history of enslavement and systemic oppression of Black, Brown, and Indigenous populations has engendered the pervasiveness of race- and class-based discrimination across all levels of the social ecology (Bailey, 2009). In the healthcare field, this manifests in well-documented cases of prejudice and discrimination among healthcare providers, making IPV survivors particularly vulnerable to stigma based on race, class and their experience with violence (Constante, Marinho, & Bastos,

2022; Gomes, 2016; Pavão et al., 2012; Constante & Bastos, 2020; Evans et al., 2020). While HBW staff are well-equipped with knowledge and experience to speak to the demographic of those they serve, their perceptions of the survivors they attend, particularly non-white and low-income survivors, may be impacted by stigma and potential biases. This suggests that future research that aims to assess the appropriateness of language used in *Eu-Decido* should ask survivors recruited from the HBW for their direct input rather than relying solely on the perspectives of HBW staff.

Another prominent theme that emerged was that survivors pointed to the emotional toll answering questions about abuse may take as further evidence of the need for a professional to accompany and support survivors as they use *Eu-Decido.* To illustrate this need, survivors described the emotional difficulties that arise when they answer questions about their abuse, emphasizing that survivors would be best cared for if they had a trained professional to support them in the process of recounting or reflecting on traumatic experiences. They explained this was especially important for low-literacy survivors, noting that having an HBW staff help them complete *Eu-Decido* would prevent a survivor's literacy level from adding further stress to an already difficult task.

This suggestion differs from results of the formative phases of adaptation and testing of online SDAs in high-income countries (HIC), where the app was initially designed for confidential and independent use. For example, participants in the adaptation phases of New Zealand's I-DECIDE also raised concerns regarding the emotional impact of engaging with IPV-related content, however they suggested adding motivational pop-up banners with positive encouragements or asking a friend or advocate to back the user as they complete the SDA rather than enlisting in-person support from a professional (Young-Hauser et al., 2014). This contrasts

with results from formative studies of the Kenyan version of myPlan, where survivors and community health volunteers (CHVs) recommended personnel be available to assist users in navigating the app (Decker et al., 2020). This suggestion was incorporated into the randomized control trial (RCT) design and trained personnel were available to assist participants in using the app for the first time. In a study analyzing the perceptions of Thai healthcare providers on the feasibility of myPlan in Thailand, participants raised concerns about limited internet access among survivors in rural areas, suggesting healthcare providers be trained to incorporate the app into the routine care of survivors (Udmuangpia et al., 2020). The contrast in suggested approaches regarding the administration of online SDAs indicates that while independent use of these tools has proven to be feasible in HIC, facilitated administration may be more appropriate for initial effectiveness testing in LMIC with the possibility of integrating independent and confidential use in scale-up phases.

Scholars have established that gendered power imbalances contribute to the legitimization of relationship violence against women at all levels of the social ecology, including at the individual level among survivors themselves (DiNapoli et al., 2019). Such legitimization of abuse from the survivor's perspective can be understood as a form of maladaptive coping that can lead to acceptance of abuse, reduced help-seeking, and staying in the relationship (DiNapoli et al., 2019). In this study, the most prominent benefit of *Eu-Decido* that emerged throughout focus groups was that using this tool can help survivors become sensitized to the abuse they face, allowing them to come to their own realization that the violence they have perhaps normalized is in fact not normal and should not be tolerated. All survivors included in this study mentioned how they spent much of their relationship thinking the violence they were experiencing was normal. They explained that this normalization of violence operated

in tandem with feelings of guilt, self-doubt, fear and shame that arose from experiencing abuse, emphasizing a tool like *Eu-Decido* could incite the recognition of violence for what it is. Sensitization to IPV was coined as a key benefit of I-DECIDE in the New Zealand trial as well, where survivors emphasized answering the app's questionnaires induced a "wake-up call/reality check" which is a "painful but necessary realization" to initiate the journey towards a life free of violence (Younger-Hauser, 2014). Studies examining the ways in which women engage in and respond to IPV have coined the term “turning points” to describe specific incidents or situations that cause a permanent shift in how women view the violence, their relationship, and how they wish to respond (Chang, 2010). These turning points often coincide with help-seeking or self-empowerment behaviors as women try to change their situation and stay safe (Chang, 2010). Findings from this feasibility study suggest *Eu-Decido* could encourage sensitization to IPV, which would be an important turning point for survivors.

Participants expressed high satisfaction with the usability of *Eu-Decido*, describing the app as easy to use and navigate. They attributed the ease of use to the incorporation of visual aids which allowed for the content to be presented in an easily comprehensible and visually pleasing format that kept users engaged with the content. Similarly, participants in the adaptation phases of myPlan Kenya trial recommended the inclusion of graphics and animations to enhance readability among users (Decker et al., 2020). The inclusion of visual aids has been a consistent feature in all other adaptations of the app, indicating its potential as a key element in ensuring app feasibility and usability in the Brazilian and other contexts.

Results from the formative study to adapt myPlan for use in Kenya revealed that facilitated administration of the app was not only deemed necessary to maximize usability for survivors, but that myPlan could also serve as an important job aid for community health

workers and other lay professionals who provide services to survivors of IPV (Decker et al., 2020). HBW staff in both the present and previous feasibility study (Signorelli et al., 2022) corroborated this finding, suggesting that *Eu-Decido* could help mitigate some of the challenges staff and patients face at the HBW. Specifically, HBW staff and survivors noted that the absence of a centralized database that unifies departments makes survivors repeat their story each time they go to a different department, forcing them to repeatedly engage in the arduous task of recounting their traumatic experiences. Integrating *Eu-Decido* within the HBW workflow in a manner that enables all departments to access patient responses to questionnaires would help reduce the negative impact of repeated storytelling, allowing HBW processes to align more closely with principles of trauma-informed care.

Another significant finding that emerged regarding how *Eu-Decido* can support the HBW-Curitiba involves the use of DA-Brazil scores to allocate protective measures. The DA was developed precisely for the purpose of allowing women and first responders (law enforcement officials, courts, and social service providers) to determine the need for protective measures (Campbell, 2005). The previously mentioned analysis of face validity and comprehension of the DA-Brazil determined survivors and HBW staff perceived the DA-Brazil is a valuable and culturally appropriate tool for immediate use at the HBW-Curitiba and other social service and healthcare settings (Evans et al., 2022). HBW staff in the current study echoed these findings by stating the need for a scientifically validated approach to dispensing protective measures based on a standardized determination of risk, relieving HBW staff from the pressure of relying on their own judgement. While this suggestion falls out of the scope in which *Eu-Decido* was originally designed for, it provides additional support to the idea that this tool could be a valuable job aid for HBW staff and other professionals who care for survivors of IPV.

Participants made clear they think *Eu-Decido* would be most beneficial to the demographic of survivors that seek care at the HBW if used alongside a professional and could also provide support to HBW staff if used as a job aid, highlighting the promise of using *Eu-Decido* in the HBW setting. While the HBW-Curitiba serves as the principal resource for survivors of IPV in Curitiba, those who live in places where HBWs do not exist rely primarily on the Brazilian National Health System (SUS) for care. Research suggests primary healthcare settings can play a significant role in early intervention of IPV, as survivors often make multiple visits to health professionals before disclosing abuse (Hegarty, 2018). Several studies have determined that healthcare providers who identify and counsel patients experiencing IPV can reduce victimization (Kiely et al., 2010; McFarlene et al., 2006; Miller et al., 2011) and positively impact health outcomes (McFarlene et al., 2006; McCaw et al., 2001; Coker et al., 2012). Garcia-Moreno et al. (2015) determined healthcare providers can support survivors by helping them understand—regardless of whether they plan to stay or leave their relationship—that what they are experiencing is abuse, implementing harm-reduction strategies, developing a safety plan, and connecting women to resources. Alvarez et al. (2017) conducted a study with healthcare providers serving primarily low-income, Latina patients in the U.S. to assess their perceptions of integrating myPlan into the clinical setting. They found that providers believed the app could provide important support to survivors in limited resource settings by helping women become sensitized to potential dangers, identify their safety priorities, and empowering them to create a tailored safety plan regardless of their intentions to leave or remain in their relationship (Alvarez et al., 2017).

The potential benefits of use evidenced by perceptions of participants in the current study and findings of previous online SDA trials warrant the investigation of implementing *Eu-Decido*

in healthcare settings as a potentially effective means of connecting survivors with valuable tools to protect themselves from IPV. In doing so, it is important to consider documented challenges in caring for survivors of IPV in SUS settings (Kiss et al., 2012; d'Oliveira et al., 2020; Evans et al., 2020). Previous studies point to a lack of adequate IPV training that successfully combats the idea held by many providers that IPV is an issue that falls outside the scope of healthcare, although there seems to be evidence of improvement on this front (d'Oliveira et al., 2020). Furthermore, IPV survivors have reported stigma and victim-blaming behaviors from healthcare providers that erodes their trust in provider's ability to help them, serving as a barrier to seeking IPV-related care in primary healthcare settings (Evans et al., 2020). This means that trainings on the implementation of *Eu-Decido* in SUS clinics must be comprehensive in that they not only train providers on how to use this tool, but also on the importance of their role in addressing IPV in a survivor-centered and trauma-informed manner.

Consistent with findings from Signorelli et al.'s (2022) feasibility study, participants expressed concerns about the risk of abusers discovering the use of *Eu-Decido* through monitoring survivors' phones, emphasizing the importance of safety measures that ensure the use of *Eu-Decido* does not increase user's exposure to IPV. While most participants felt that safety features such as password-protection and the safety exit were sufficient to ensure user safety, others felt strongly that the presence of *Eu-Decido* on the survivor's phone poses too great of a risk to their safety given the frequency and intensity with which many abusive partners monitor the phones of their victims. These participants felt that the safest way to use *Eu-Decido* would be in-person on a device provided in a health or social service setting, that way survivors would not have any records of use on their phone. Previous online SDAs have been offered via a website rather than a mobile app (Ford-Gilboe et al., 2020; Hegarty et al., 2018), an alternative that could

offer recourse to safety concerns regarding having *Eu-Decido* downloaded on the user's phone. In future *Eu-Decido* feasibility studies, this option should be offered to participants to gain a better understanding of the best modality for users to access this SDA.

Participants suggested implementing the option to send results to a trusted person rather than themselves as an additional safety measure, allowing the survivor to be monitored by a trusted individual that could provide more support if needed. However, most of the scales and questionnaires embedded in *Eu-Decido* are designed for one-time use, and thus inappropriate for use for monitoring. Concerns regarding potential threats to survivors' safety in using *Eu-Decido* allow us to consider additional safety measures that have been implemented in other SDA trials that can be used in *Eu-Decido*. Among these are guidelines for using a "dummy" personal identification number (PIN) that redirects the user to a cooking website to conceal the genuine intention of the app in case women are being forced to sign in (Decker et al., 2020). Facilitating access via a web-based platform or a downloadable application is another safety measure that provides users with the option to select the most secure mode of access (Decker et al., 2020). Overall, these findings highlight the importance of considering user safety when designing and implementing technology-based interventions for survivors of IPV.

Conclusion

Rates of IPV and femicide remain alarmingly high despite the existence of several public policies aimed at addressing violence against women in Brazil, suggesting the need for innovative interventions that are accessible nationwide to support those experiencing abuse. In this study, using principles of Human-Centered Design (HCD) was crucial in ensuring that the perspectives of those most directly impacted by the issue of IPV were central to the development of *Eu-Decido*.

Overall, participants regarded *Eu-Decido* as a valuable tool in supporting survivors of IPV, providing critical feedback on its feasibility, benefits, and barriers. House of the Brazilian Woman (HBW) staff emphasized the importance of facilitated use in conjunction with trained professionals to enhance feasibility, considering the limited literacy levels of the survivors they serve and the potential need for support as they engage in the emotionally difficult task of reflecting on abuse. However, survivors praised the confidential nature of the app, pointing to the value of being able to utilize it on their own time and at their own pace. These findings suggest that future research on *Eu-Decido* should consider investigating the feasibility of both modalities of delivery, including potential integration into primary care settings due to the limited availability of HBWs nationwide.

The most significant benefit of *Eu-Decido* according to participants was its potential to sensitize women to the violence they are experiencing, suggesting this tool could facilitate a crucial "turning point" for help-seeking and safety planning behaviors. Consistent with findings from previous research (Signorelli et al., 2020), participants in this study also expressed concerns about user safety, emphasizing the importance of safety features such as the safety exit, and recommending the development of a web version to mitigate the risk of potential monitoring by abusers if the app is downloaded on their phone.

Overall, the findings of this study corroborate those of existing formative research (Signorelli et al., 2020) suggesting that *Eu-Decido* is highly feasible for use among Brazilian women, while also providing important insights for maximizing the use of internet-based SDAs to empower and support women in violent relationships. Future research informing updates to *Eu-Decido* should continue to engage survivors of IPV served by the HBW-Curitiba to ensure inclusivity and address potential biases from HBW staff. This study has yielded significant

insights into the use of internet-based SDAs in Brazil, contributing to the growing body of knowledge surrounding how mHealth and SDAs can be implemented in LMIC settings to improve outcomes for survivors of IPV.

Limitations

While the findings of this study provided important insights as to the perceptions of key stakeholders regarding the feasibility of *Eu-Decido* for use in Brazil, they are limited to one of the seven HBWs in the nation, meaning they may not be generalizable across all HBWs. As this study was conducted in an urban center in the Southern region of Brazil, the perspectives of participants should be interpreted within that context and may not be generalizable to the entire population of such a vast and diverse country. Additionally, the inclusion of both HBW staff and survivors in the focus groups may have introduced the possibility of social desirability bias, as survivors may have felt inhibited to express dissenting opinions or concerns against the perspectives shared by the HBW staff. Because the current version of *Eu-Decido* was designed primarily for cisgender female survivors of IPV experiencing abuse from a male partner, the scope of this study was limited to investigating the use of *Eu-Decido* among this particular demographic and thus excludes the voices of queer, non-binary, trans, and heterosexual cisgender male survivors.

Chapter IV: Public Health Implications for Future Research

Findings from this analysis suggest the following:

1) Future research endeavors pertaining to *Eu-Decido* should engage both survivors recruited from the HBW-Curitiba and HBW staff, in order to ensure that updates to *Eu-Decido* are feasible for both key stakeholder groups and to avoid potential bias stemming from the opinions of HBW staff.
2) Feasibility studies in the future should investigate the potential of delivering *Eu-Decido* as a standalone app for individual use, as well as with facilitated assistance from a professional at the HBW or other settings where survivors seek IPV services, such as SUS clinics.
    a) Studies examining the potential integration of *Eu-Decido* in SUS clinics must explore strategies to address the current lack of training among providers in IPV and trauma-informed care. This may involve assessing the knowledge level of SUS providers on these topics, as well as screening participants for potential biases or stigmas towards survivors based on their violent relationships. The findings from this research should inform the development of training materials for SUS providers.
3) To address concerns about the complexity of language beyond questionnaires, it is important to simplify the language used in *Eu-Decido*. Feedback from survivors and HBW staff should be sought to validate any changes made to the language.
4) Further research is needed to determine which questionnaires are not a priority for survivors, so that they can be removed from the app in order to shorten it and make it more user-friendly.

5) Additional investigation into how *Eu-Decido* can be used to address shortcomings at the HBW is warranted, particularly in exploring its potential as an intake questionnaire that can be shared across all departments. This could help address issues related to fragmentation of departments, which requires survivors to repeat their story each time they interact with a different department. Furthermore, the potential use of results from *Eu-Decido* as a determinant for the distribution of protective measures should be investigated, involving input from members at all levels and departments within the HBW.
6) Further research should be conducted to ensure the safety of app users. Specifically, the potential of creating a web-based version of *Eu-Decido* should be explored as a means of mitigating potential safety threats associated with having a resource of this nature downloaded on the personal devices of women who may experience monitoring by their abusers.
7) Given high rates of IPV and low rates of formal help-seeking behaviors among queer, transgender, and non-binary communities in Brazil, it is imperative that future research explores the potential for *Eu-Decido* to address the unique needs and challenges faced by individuals across diverse gender and sexual identities.

References

Ahmad, F., Hogg-Johnson, S., Stewart, D. E., Skinner, H. A., Glazier, R. H., & Levinson, W. (2009). Computer-assisted screening for intimate partner violence and control: a randomized trial. *Annals of internal medicine*, *151*(2), 93–102. https://doi.org/10.7326/0003-4819-151-2-200907210-00124

Almeida, J., Rocha, R., Signorelli, M., Silva, V., Prado, S., & Evans, D. (2020). The House of the Brazilian Woman: Impacts of a cross-sectoral public health policy for abused women. *European Journal of Public Health*, *30*(Supplement_5), ckaa166.945. https://doi.org/10.1093/eurpub/ckaa166.945

Alvarez, C., Debnam, K., Clough, A., Alexander, K., & Glass, N. E. (2018). Responding to intimate partner violence: Healthcare providers' current practices and views on integrating a safety decision aid into primary care settings. *Research in Nursing & Health*, *41*(2), 145–155. https://doi.org/10.1002/nur.21853

Amorim, V. C., Tourinho, E. Z., & Cihon, T. M. (2022). Brazilian public policies for assistance to women in situations of violence: Contributions from culturo-behavioral science. *Behavior and Social Issues*. https://doi.org/10.1007/s42822-022-00095-1

Anderson, E. J., Krause, K. C., Meyer Krause, C., Welter, A., McClelland, D. J., Garcia, D. O., Ernst, K., Lopez, E. C., & Koss, M. P. (2021). Web-based and mhealth interventions for intimate partner violence victimization prevention: A systematic review. *Trauma, Violence, & Abuse*, *22*(4), 870–884. https://doi.org/10.1177/1524838019888889

Ansara, D. L., & Hindin, M. J. (2010). Formal and informal help-seeking associated with women's and men's experiences of intimate partner violence in Canada. *Social Science & Medicine*, *70*(7), 1011–1018. https://doi.org/10.1016/j.socscimed.2009.12.009

Bacchus, L. J., Ranganathan, M., Watts, C., & Devries, K. (2018). Recent intimate partner violence against women and health: A systematic review and meta-analysis of cohort studies. *BMJ Open*, *8*(7), e019995. https://doi.org/10.1136/bmjopen-2017-019995

Bailey, S. (2009, June 2). *Legacies of race: Identities, attitudes, and politics in brazil*. https://www.semanticscholar.org/paper/Legacies-of-Race%3A-Identities%2C-Attitudes%2C-and-in-Bailey/50fa385163453d6937768fa0c06781f50b31cfb1

Bandura, A., & National Inst of Mental Health. (1986). *Social foundations of thought and action: A social cognitive theory.* Prentice-Hall, Inc.

Barros, C. R. dos S., & Schraiber, L. B. (2017). Intimate partner violence reported by female and male users of healthcare units. *Revista de Saúde Pública*, *51*. https://doi.org/10.1590/S1518-8787.2017051006385

Belfrage, H., Strand, S., Storey, J. E., Gibas, A. L., Kropp, P. R., & Hart, S. D. (2011). Assessment and management of risk for intimate partner violence by police officers using

the spousal assault risk assessment guide. *Law and Human Behavior*. https://doi.org/10.1007/s10979-011-9278-0

Bloom, T. L., Glass, N. E., Case, J., Wright, C., Nolte, K., & Parsons, L. (2014). Feasibility of an online safety planning intervention for rural and urban pregnant abused women. *Nursing Research*, *63*(4), 243–251. https://doi.org/10.1097/NNR.0000000000000036

Boccolini, C. S., Boccolini, P. de M. M., Damacena, G. N., Ferreira, A. P. de S., & Szwarcwald, C. L. (2016). Factors associated with perceived discrimination in health services of Brazil: Results of the Brazilian National Health Survey, 2013/Fatores associados a discriminacao percebida nos servicos de saude do Brasil: resultados da Pesquisa Nacional de Saude, 2013. *CiêNcia & Saúde Coletiva*, *21*(2), 371–387. https://doi.org/10.1590/1413-81232015212.19412015

Bourey, C., Williams, W., Bernstein, E. E., & Stephenson, R. (2015). Systematic review of structural interventions for intimate partner violence in low- and middle-income countries: Organizing evidence for prevention. *BMC Public Health*, *15*(1), 1165. https://doi.org/10.1186/s12889-015-2460-4

Brazil and compliance with CEDAW: Shadow Report of Civil Society. (2007).

Brazil. (2020, June 5). https://www.commonwealthfund.org/international-health-policy-center/countries/brazil

Breiding, M. J., & Armour, B. S. (2015). The association between disability and intimate partner violence in the United States. *Annals of Epidemiology*, *25*(6), 455–457. https://doi.org/10.1016/j.annepidem.2015.03.017

Breiding, M. J., Smith, S. G., Basile, K. C., Walters, M. L., Chen, J., & Merrick, M. T. (2014). Prevalence and characteristics of sexual violence, stalking, and intimate partner violence victimization--national intimate partner and sexual violence survey, United States, 2011. *Morbidity and mortality weekly report. Surveillance summaries (Washington, D.C. : 2002)*, *63*(8), 1–18.

Campbell, J. C. (2002). Health consequences of intimate partner violence. *Lancet*, 359(9314), 1331–1336. https://doi.org/10.1016/S0140-6736(02)08336-8

Campbell, J., & Glass, N. (2009). Safety planning, danger, and lethality assessment. In C. Mitchell & D. Anglin (Eds.), *Intimate partner violence: A health-based perspective* (pp. 319–334). Oxford University Press.

Capaldi, D. M., Knoble, N. B., Shortt, J. W., & Kim, H. K. (2012). A systematic review of risk factors for intimate partner violence. *Partner Abuse*, *3*(2), 231–280. https://doi.org/10.1891/1946-6560.3.2.231

Carlson B. E., McNutt L. A., Choi D. Y. (2003). Childhood and adult abuse among women in primary health care: Effects on mental health. *Journal of Interpersonal Violence*, 18, 924–941.

Carneiro, J. B., Gomes, N. P., Estrela, F. M., da Silva, A. F., Carvalho, M. R. da S., & Webler, N. (2022). Care provided to women victims of intimate partner violence from the perspective of health professionals. *INQUIRY: The Journal of Health Care Organization, Provision, and Financing*, *59*, 00469580211064105. https://doi.org/10.1177/00469580211064105

Cattaneo, L., Stylianou, A., Hargrove, S., Goodman, L., Gebhard, K., & Curby, T. (2020). Survivor-centered practice and survivor empowerment: Evidence from a research–practitioner partnership. *Violence Against Women*, *27*, 107780122093519. https://doi.org/10.1177/1077801220935196

Chen, E., Moracco, K. E., Kainz, K., Muessig, K. E., & Tate, D. F. (2022). Developing and validating a new scale to measure the acceptability of health apps among adolescents. *DIGITAL HEALTH*, *8*, 205520762110676. https://doi.org/10.1177/20552076211067660

Chiavegatto Filho, A. D. P., Beltrán-Sánchez, H., & Kawachi, I. (2014). Racial disparities in life expectancy in Brazil: Challenges from a multiracial society. *American Journal of Public Health*, *104*(11), 2156–2162. https://doi.org/10.2105/AJPH.2013.301565

Chrisler, J. C., & Ferguson, S. (2006). Violence against women as a public health issue. *Annals of the New York Academy of Sciences*, *1087*(1), 235–249. https://doi.org/10.1196/annals.1385.009

Coker, A. L., Derrick, C., Lumpkin, J. L., Aldrich, T. E., & Oldendick, R. (2000). Help-seeking for intimate partner violence and forced sex in South Carolina. *American Journal of Preventive Medicine*, *19*(4), 316–320. https://doi.org/10.1016/S0749-3797(00)00239-7

Coker, A. L., Smith, P. H., Whitaker, D. J., Le, B., Crawford, T. N., & Flerx, V. C. (2012). Effect of an in-clinic IPV advocate intervention to increase help seeking, reduce violence, and improve well-being. *Violence Against Women*, *18*(1), 118–131. https://doi.org/10.1177/1077801212437908

Coll, C. V. N., Ewerling, F., García-Moreno, C., Hellwig, F., & Barros, A. J. D. (2020). Intimate partner violence in 46 low-income and middle-income countries: An appraisal of the most vulnerable groups of women using national health surveys. *BMJ Global Health*, *5*(1), e002208. https://doi.org/10.1136/bmjgh-2019-002208

Connell, R.W. (1995). Masculinities. Berkeley: University of California Press.

Constante, H. M., & Bastos, J. L. (2021). Mapping the margins in health services research: How does race intersect with gender and socioeconomic status to shape difficulty accessing healthcare among unequal brazilian states? *International Journal of Health Services*, *51*(2), 155–166. https://doi.org/10.1177/0020731420979808

Constante, H. M., Marinho, G. L., & Bastos, J. L. (2021). The door is open, but not everyone may enter: Racial inequities in healthcare access across three Brazilian surveys. *Ciência & Saúde Coletiva*, *26*(9), 3981–3990. https://doi.org/10.1590/1413-81232021269.47412020

d'Oliveira, A. F. P. L., Pereira, S., Schraiber, L. B., Graglia, C. G. V., Aguiar, J. M. de, Sousa, P. C. de, & Bonin, R. G. (2020). Obstacles and facilitators to primary health care offered to women experiencing domestic violence: A systematic review. *Interface - Comunicação, Saúde, Educação*, *24*, e190164.

da Rocha, R. W. G., de Oliveira, D. C., Liebel, V. A., Pallu, P. H. R., Hegarty, K., & Signorelli, M. C. (2022). Translation and cross-cultural adaptation protocol of abuse questionnaires: the Brazilian Portuguese Version of the Composite Abuse Scale (CAS). *Violence against women*, *28*(5), 1171-1187.

Danielson K. K., Moffitt T. E., Caspi A., Silva P. A. (1998). Comorbidity between abuse of an adult and DSM-III-R mental disorders: Evidence from an epidemiological study. *American Journal of Psychiatry*, 155, 131–133.

Dantas, L. O., Carvalho, C., Pena, C., Breda, C. C., Driusso, P., Ferreira, C. H. J., & Bø, K. (2022a). Mobile health technologies for the monitoring of menstrual cycle: A systematic review of online stores in Brazil. *Journal of Obstetrics and Gynaecology Research*, *48*(1), 5–14. https://doi.org/10.1111/jog.15082

Dantas, L. O., Carvalho, C., Pena, C., Breda, C. C., Driusso, P., Ferreira, C. H. J., & Bø, K. (2022b). Mobile health technologies for the monitoring of menstrual cycle: A systematic review of online stores in Brazil. *Journal of Obstetrics and Gynaecology Research*, *48*(1), 5–14. https://doi.org/10.1111/jog.15082

Dantas, L. O., Carvalho, C., Prando, B. C., McAlindon, T. E., & da Silva Serrão, P. R. M. (2021a). Mobile health technologies for the management of rheumatic diseases: A systematic review of online stores in Brazil. *Clinical Rheumatology*, *40*(7), 2601–2609. https://doi.org/10.1007/s10067-020-05561-y

Dantas, L. O., Carvalho, C., Prando, B. C., McAlindon, T. E., & da Silva Serrão, P. R. M. (2021b). Mobile health technologies for the management of rheumatic diseases: A systematic review of online stores in Brazil. *Clinical Rheumatology*, *40*(7), 2601–2609. https://doi.org/10.1007/s10067-020-05561-y

Dantas, L. O., Carvalho, C., Santos, B. L. de J., Ferreira, C. H. J., Bø, K., & Driusso, P. (2021). Mobile health technologies for the management of urinary incontinence: A systematic review of online stores in Brazil. *Brazilian Journal of Physical Therapy*, *25*(4), 387–395. https://doi.org/10.1016/j.bjpt.2021.01.001

Davies J., Lyon E. (2013). *Domestic violence advocacy: Complex lives/difficult choices*. Thousand Oaks, CA: Sage.

Debon, R., Bellei, E. A., Biduski, D., Volpi, S. S., Alves, A. L. S., Portella, M. R., & De Marchi, A. C. B. (2020). Effects of using a mobile health application on the health conditions of patients with arterial hypertension: A pilot trial in the context of Brazil's Family Health Strategy. *Scientific Reports*, *10*(1), Article 1. https://doi.org/10.1038/s41598-020-63057-w

Decker, M. R., Wood, S. N., Hameeduddin, Z., Kennedy, S. R., Perrin, N., Tallam, C., Akumu, I., Wanjiru, I., Asira, B., Frankel, A., Omondi, B., Case, J., Clough, A., Otieno, R., Mwiti, M., & Glass, N. (2020). Safety decision-making and planning mobile app for intimate partner violence prevention and response: Randomised controlled trial in Kenya. *BMJ Global Health*, *5*(7), e002091. https://doi.org/10.1136/bmjgh-2019-002091

Decker, M. R., Wood, S. N., Kennedy, S. R., Hameeduddin, Z., Tallam, C., Akumu, I., Wanjiru, I., Asira, B., Omondi, B., Case, J., Clough, A., Otieno, R., Mwiti, M., Perrin, N., & Glass, N. (2020). Adapting the myPlan safety app to respond to intimate partner violence for women in low and middle income country settings: App tailoring and randomized controlled trial protocol. *BMC Public Health*, *20*(1), 808. https://doi.org/10.1186/s12889-020-08901-4

Dekel, B., Abrahams, N., & Andipatin, M. (2019). Exploring the intersection between violence against women and children from the perspective of parents convicted of child homicide. *Journal of Family Violence*, *34*(1), 9–20. https://doi.org/10.1007/s10896-018-9964-5

Delgado, G. V., de Carvalho, R. B., Choo, C. W., Leite, R. S., & de Castro, J. M. (2020). Patient empowerment through mobile health: Case study with a Brazilian application for pregnancy support. *Proceedings of the Association for Information Science and Technology*, *57*(1), e221. https://doi.org/10.1002/pra2.221

Devries K., Watts C., Yoshihama M., Kiss L., Schraiber L. B., Deyessa N.…Jansen H. (2011). Violence against women is strongly associated with suicide attempts: Evidence from the WHO multi-country study on women's health and domestic violence against women. *Social Science & Medicine*, 73, 79–86.

Di Napoli, I., Procentese, F., Carnevale, S., Esposito, C., & Arcidiacono, C. (2019). Ending intimate partner violence (ipv) and locating men at stake: An ecological approach. *International Journal of Environmental Research and Public Health*, *16*(9), Article 9. https://doi.org/10.3390/ijerph16091652

Dobash, R. E., & Dobash, R. P. (1979). Violence against wives: A case against the patriarchy. New York, NY: Free Press.

Dolezal, T., McCollum, D. and Callahan, M. (2009) Hidden Costs in Health Care: The Economic Impact of Violence and Abuse. The Academy on Violence and Abuse, Eden Prairie.

Dutton, M. A. (1992). *Empowering and healing the battered woman: A model for assessment and intervention.* Springer Publishing Co.

Dutton, M. A. (2004). Complexity of women's response to violence: Response to Briere and Jordan. *Journal of Interpersonal Violence*, *19*(11), 1277-1282.

Eden, K. B., Perrin, N. A., Hanson, G. C., Messing, J. T., Bloom, T. L., Campbell, J. C., Gielen, A. C., Clough, A. S., Barnes-Hoyt, J. S., & Glass, N. E. (2015). Use of online safety decision aid by abused women. *American Journal of Preventive Medicine*, *48*(4), 372–383. https://doi.org/10.1016/j.amepre.2014.09.027

Evans, D. P., Hall, C. D. X., DeSousa, N., Wilkins, J. D., Chiang, E. D. de O., & Vertamatti, M. A. F. (2020). "Women fear the law more than abusers": A study of public trust in health and legal response to violence against women in Santo André, São Paulo State, Brazil. *Cadernos de Saúde Pública*, *36*, e00114019. https://doi.org/10.1590/0102-311X00114019

Evans, D. P., Shojaie, D. Z., Sahay, K. M., DeSousa, N. W., Hall, C. D., & Vertamatti, M. A. F. (2021). Intimate partner violence: Barriers to action and opportunities for intervention among health care providers in São Paulo, Brazil. *Journal of Interpersonal Violence*, *36*(21–22), 9941–9955. https://doi.org/10.1177/0886260519881004

Evans, D. P., Xavier Hall, C. D., da Rocha, R. W. G., Prado, S. M., & Signorelli, M. C. (2022). "These questions have everything that happens to me": Analysis of a femicide risk assessment tool for abused women in Brazil. *Journal of Family Violence*, *37*(4), 547–557. https://doi.org/10.1007/s10896-021-00313-1

Ford-Gilboe, M., Varcoe, C., Scott-Storey, K., Perrin, N., Wuest, J., Wathen, C. N., Case, J., & Glass, N. (2020). Longitudinal impacts of an online safety and health intervention for women experiencing intimate partner violence: Randomized controlled trial. *BMC Public Health*, *20*(1), 260. https://doi.org/10.1186/s12889-020-8152-8

Free, C., Phillips, G., Felix, L., Galli, L., Patel, V., & Edwards, P. (2010). The effectiveness of M-health technologies for improving health and health services: a systematic review protocol. *BMC research notes*, *3*(1), 1-7.

Garcia-Moreno, C., & Watts, C. (2011). Violence against women: An urgent public health priority. *Bulletin of the World Health Organization*, *89*, 2–2. https://doi.org/10.2471/BLT.10.085217

García-Moreno, C., Hegarty, K., d'Oliveira, A. F. L., Koziol-McLain, J., Colombini, M., & Feder, G. (2015). The health-systems response to violence against women. *The Lancet*, *385*(9977), 1567–1579. https://doi.org/10.1016/S0140-6736(14)61837-7

Garcia-Moreno, C., Jansen, H. A., Ellsberg, M., Heise, L., & Watts, C. H. (2006). Prevalence of intimate partner violence: Findings from the WHO multi-country study on women's health and domestic violence. *The Lancet*, *368*(9543), 1260–1269. https://doi.org/10.1016/S0140-6736(06)69523-8

Garthe, R. C., Hidalgo, M. A., Hereth, J., Garofalo, R., Reisner, S. L., Mimiaga, M. J., & Kuhns, L. (2018). Prevalence and risk correlates of intimate partner violence among a multisite cohort of young transgender women. *LGBT Health*, *5*(6), 333–340. https://doi.org/10.1089/lgbt.2018.0034

Gattegno, M. V., Wilkins, J. D., & Evans, D. P. (2016). The relationship between the Maria da Penha Law and intimate partner violence in two Brazilian states. *International journal for equity in health*, *15*(1), 1-9.

Glass, N. E., Clough, A., Messing, J. T., Bloom, T., Brown, M. L., Eden, K. B., Campbell, J. C., Gielen, A., Laughon, K., Grace, K. T., Turner, R. M., Alvarez, C., Case, J., Barnes-Hoyt, J., Alhusen, J., Hanson, G. C., & Perrin, N. A. (2022). Longitudinal impact of the myPlan app on health and safety among college women experiencing partner violence. *Journal of Interpersonal Violence*, *37*(13–14), NP11436–NP11459. https://doi.org/10.1177/0886260521991880

Glass, N. E., Perrin, N. A., Hanson, G. C., Bloom, T. L., Messing, J. T., Clough, A. S., Campbell, J. C., Gielen, A. C., Case, J., & Eden, K. B. (2017). The longitudinal impact of an internet safety decision aid for abused women. *American Journal of Preventive Medicine*, *52*(5), 606–615. https://doi.org/10.1016/j.amepre.2016.12.014

Glass, N., Clough, A., Case, J., Hanson, G., Barnes-Hoyt, J., Waterbury, A., Alhusen, J., Ehrensaft, M., Grace, K. T., & Perrin, N. (2015). A safety app to respond to dating violence for college women and their friends: The MyPlan study randomized controlled trial protocol. *BMC Public Health*, *15*(1), 871. https://doi.org/10.1186/s12889-015-2191-6

Glass, N., Eden, K. B., Bloom, T., & Perrin, N. (2010). Computerized aid improves safety decision process for survivors of intimate partner violence. *Journal of interpersonal violence*, *25*(11), 1947-1964.

Goldenberg, T., Jadwin-Cakmak, L., & Harper, G. W. (2018). Intimate partner violence among transgender youth: Associations with intrapersonal and structural factors. *Violence and Gender*, *5*(1), 19–25. https://doi.org/10.1089/vio.2017.0041

Golding J. M. (1999). Intimate partner violence as a risk factor for mental disorders: A meta-analysis. *Journal of Family Violence*, 14, 99–132.

Gomes, C. (2016). Racism in health services in brazil. *Advances in Applied Sociology*, *6*(11), Article 11. https://doi.org/10.4236/aasoci.2016.611027

Goodkind, J. R., Sullivan, C. M., & Bybee, D. I. (2004). A contextual analysis of battered women's safety planning. *Violence Against Women*, *10*(5), 514–533. https://doi.org/10.1177/1077801204264368

Goodman L. A., Epstein D. (2008). *Listening to battered women: A survivor-centered approach to advocacy, mental health, and justice*. Washington, DC: American Psychological Association.

Graham-Kevan, N., & Archer, J. (2008). Does controlling behavior predict physical aggression and violence to partners? *Journal of Family Violence*, *23*(7), 539–548. https://doi.org/10.1007/s10896-008-9162-y

Harris, M., & Fallot, R. D. (Eds.). (2001). *Using trauma theory to design service systems.* Jossey-Bass/Wiley.

Hathaway J. E., Mucci L. A., Silverman J. G., Brooks D. R., Mathews R., Pavlos C. A. (2000). Health status and health care use of Massachusetts women reporting partner abuse. *American Journal of Preventive Medicine*, 19, 302–307.

Heise, L., Ellsberg, M. and Gottemoeller, M. (1999) Ending Violence Against Women. Population Reports, Series L, No.11. http://www.vawnet.org/assoc_files_vawnet/populationreports.pdf

ISMIR 2013 Brazil » Curitiba. (n.d.). Retrieved March 29, 2023, from https://ismir2013.ismir.net/curitiba/

Kahraman, M.S., & Bell, K.M. (2017). Safety Planning: A Vital Preliminary Step for Professionals Working With Intimate Partner Violence Victims -. *Journal of Cognitive-Behavioral Psychotherapy and Research, 6*, 141-150.

Kiely, M., El-Mohandes, A. A. E., El-Khorazaty, M. N., & Gantz, M. G. (2010). An integrated intervention to reduce intimate partner violence in pregnancy: A randomized trial. *Obstetrics and Gynecology*, *115*(2 Pt 1), 273–283. https://doi.org/10.1097/AOG.0b013e3181cbd482

Kiss, L. B., & Schraiber, L. B. (2011). Temas médico-sociais e a intervenção em saúde: A violência contra mulheres no discurso dos profissionais. *Ciência & Saúde Coletiva*, *16*, 1943–1952. https://doi.org/10.1590/S1413-81232011000300028

Kiss, L., d'Oliveira, A., Zimmerman, C., Heise, L., Schraiber, L., & Watts, C. (2012). Brazilian policy responses to violence against women: Government strategy and the help-seeking behaviors of women who experience violence. *Health and Human Rights*, *14*, E64-77.

Koziol-McLain, J., Vandal, A. C., Wilson, D., Nada-Raja, S., Dobbs, T., McLean, C., Sisk, R., Eden, K. B., & Glass, N. E. (2018). Efficacy of a web-based safety decision aid for women experiencing intimate partner violence: Randomized controlled trial. *Journal of Medical Internet Research*, *19*(12), e426. https://doi.org/10.2196/jmir.8617

Kulkarni S. J., Herman-Smith B. H., Ross T. C. (2015). Measuring intimate partner violence (IPV) service providers' attitudes: The development of the Survivor-Defined Advocacy Scale (SDAS). *Journal of Family Violence*, 30, 911-921.

Kwako, L. E., Glass, N., Campbell, J., Melvin, K. C., Barr, T., & Gill, J. M. (2011). Traumatic brain injury in intimate partner violence: A critical review of outcomes and mechanisms. *Trauma, Violence, & Abuse*, *12*(3), 115–126. https://doi.org/10.1177/1524838011404251

LeBlanc, A., Kenny, D. A., O'Connor, A. M., & Légaré, F. (2009). Decisional conflict in patients and their physicians: a dyadic approach to shared decision making. *Medical decision making : an international journal of the Society for Medical Decision Making*, *29*(1), 61–68. https://doi.org/10.1177/0272989X08327067

Li, Y., Marshall, C. M., Rees, H. C., Nunez, A., Ezeanolue, E. E., & Ehiri, J. E. (2014). Intimate partner violence and HIV infection among women: a systematic review and meta-analysis. *Journal of the International AIDS Society*, *17*(1), 18845. https://doi.org/10.7448/IAS.17.1.18845

Lindsay, M., Messing, J. T., Thaller, J., Baldwin, A., Clough, A., Bloom, T., Eden, K. B., & Glass, N. (2013). Survivor feedback on a safety decision aid smartphone application for college-age women in abusive relationships. *Journal of Technology in Human Services*, *31*(4), 368–388. https://doi.org/10.1080/15228835.2013.861784

Machtinger, E. L., Davis, K. B., Kimberg, L. S., Khanna, N., Cuca, Y. P., Dawson-Rose, C., Shumway, M., Campbell, J., Lewis-O'Connor, A., Blake, M., Blanch, A., & McCaw, B. (2019). From treatment to healing: Inquiry and response to recent and past trauma in adult health care. *Women's Health Issues*, *29*(2), 97–102. https://doi.org/10.1016/j.whi.2018.11.003

Malcher, M., & Rial, C. S. (2019). Quem tem medo do feminismo negro? A urgência do debate racial no Brasil. *Revista Estudos Feministas*, *27*. https://doi.org/10.1590/1806-9584-2019v27n360959

Matzopoulos, R., Bowman, B., Butchart, A., & Mercy, J. A. (2008). The impact of violence on health in low- to middle-income countries. *International Journal of Injury Control and Safety Promotion*, *15*(4), 177–187. https://doi.org/10.1080/17457300802396487

McCaw, B., Berman, W. H., Syme, S. L., & Hunkeler, E. F. (2001). Beyond screening for domestic violence: A systems model approach in a managed care setting. *American Journal of Preventive Medicine*, *21*(3), 170–176. https://doi.org/10.1016/S0749-3797(01)00347-6

McFarlane, J. M., Groff, J. Y., O'Brien, J. A., & Watson, K. (2006). Secondary prevention of intimate partner violence: A randomized controlled trial. *Nursing Research*, *55*(1), 52.

McFarlane, J., Malecha, A., Gist, J., Watson, K., Batten, E., Hall, I., & Smith, S. (2004). Increasing the safety-promoting behaviors of abused women: A telephone intervention for victims of intimate-partner violence showed efficacy for 18 months. *AJN The American Journal of Nursing*, *104*(3), 40.

Messing, J., Wachter, K., AbiNader, M., Ward-Lasher, A., Njie-Carr, V., Sabri, B., Murray, S., Noor-Oshiro, A., & Campbell, J. (2022). "We have to build trust": Intimate partner violence risk assessment with immigrant and refugee survivors. *Social Work Research*, *46*(1), 53–64. https://doi.org/10.1093/swr/svab030

Messinger A. M. (2011). Invisible victims: same-sex IPV in the National Violence Against Women Survey. *Journal of interpersonal violence*, *26*(11), 2228–2243. https://doi.org/10.1177/0886260510383023

Miller, E., & McCaw, B. (2019). Intimate partner violence. *New England Journal of Medicine*, *380*(9), 850–857. https://doi.org/10.1056/NEJMra1807166

Miller, E., Decker, M. R., McCauley, H. L., Tancredi, D. J., Levenson, R. R., Waldman, J., Schoenwald, P., & Silverman, J. G. (2011). A family planning clinic partner violence intervention to reduce risk associated with reproductive coercion. *Contraception*, *83*(3), 274–280. https://doi.org/10.1016/j.contraception.2010.07.013

Mittal M., Stockman J. K., Seplaki C. L., Thevenet-Morrison K., Guido J., Carey M. P. (2013). HIV risk among women from domestic violence agencies: Prevalence and correlates. *Journal of the Association of Nurses in AIDS Care*, 24, 322–330.

Moffitt, T. E., & Caspi, A. (1999). *Findings about partner violence from the Dunedin Multidisciplinary Health and Development Study* [Data set]. American Psychological Association. https://doi.org/10.1037/e311082004-001

Monteiro, M. F. G., Romio, J. A. F., & Drezett, J. (2021). Is there race/color differential on femicide in Brazil?: The inequality of mortality rates for violent causes among white and black women. *Journal of Human Growth and Development*, *31*(2), 358-366. https://dx.doi.org/10.36311/jhgd.v31.12257

Montesanti, S. R., & Thurston, W. E. (2015). Mapping the role of structural and interpersonal violence in the lives of women: Implications for public health interventions and policy. *BMC Women's Health*, *15*(1), 100. https://doi.org/10.1186/s12905-015-0256-4

Moraes, C. L., Hasselmann, M. H., & Reichenheim, M. E. (2002). Adaptação transcultural para o português do instrumento "Revised Conflict Tactics Scales (CTS2)" utilizado para identificar violência entre casais. *Cadernos de Saúde Pública*, *18*, 163–176. https://doi.org/10.1590/S0102-311X2002000100017

Muessig, K. E., Golinkoff, J. M., Hightow-Weidman, L. B., Rochelle, A. E., Mulawa, M. I., Hirshfield, S., ... & Bauermeister, J. A. (2020). Increasing HIV testing and viral suppression via stigma reduction in a social networking mobile health intervention among black and latinx young men and transgender women who have sex with men (HealthMpowerment): protocol for a randomized controlled trial. *JMIR Research Protocols*, *9*(12), e24043.

Nacional, I. (n.d.). *Lei nº 14.149, de 5 de maio de 2021—Dou—Imprensa nacional*. Retrieved April 2, 2023, from https://www.in.gov.br/web/dou

Naismith, I., Ripoll, K., & Pardo, V. M. (2021). Group compassion-based therapy for female survivors of intimate-partner violence and gender-based violence: A pilot study. *Journal of Family Violence*, *36*(2), 175–182. https://doi.org/10.1007/s10896-019-00127-2

Nicholls, T. L., Pritchard, M. M., Reeves, K. A., & Hilterman, E. (2013). Risk assessment in intimate partner violence: A systematic review of contemporary approaches. *Partner Abuse*, *4*(1), 76–168. https://doi.org/10.1891/1946-6560.4.1.76

Niolon, P. H., Kearns, M., Dills, J., Rambo, K., Irving, S., Armstead, T. L., & Gilbert, L. (n.d.). *Preventing intimate partner violence across the lifespan: A technical package of programs, policies, and practices*.

O'Leary, K. D., & Slep, A. M. (2012). Prevention of partner violence by focusing on behaviors of both young males and females. *Prevention science : the official journal of the Society for Prevention Research*, *13*(4), 329–339. https://doi.org/10.1007/s11121-011-0237-2

Parker, E. M., & Gielen, A. C. (2014). Intimate partner violence and safety strategy use: Frequency of use and perceived effectiveness. *Women's Health Issues*, *24*(6), 584–593. https://doi.org/10.1016/j.whi.2014.08.001

Pavão, A. L. B., Ploubidis, G. B., Werneck, G., & Campos, M. R. (2012). Racial discrimination and health in Brazil: Evidence from a population-based survey. *Ethnicity & Disease*, *22*(3), 353–359.

Rahman, M. O., Yamaji, N., Nagamatsu, Y., & Ota, E. (2022). Effects of mhealth interventions on improving antenatal care visits and skilled delivery care in low- and middle-income countries: Systematic review and meta-analysis. *Journal of Medical Internet Research*, *24*(4), e34061. https://doi.org/10.2196/34061

Reed, E., Raj, A., Miller, E., & Silverman, J. (2010). Losing the "gender" in gender-based violence: The missteps of research on dating and intimate partner violence. *Violence against Women*, *16*, 348–354. https://doi.org/10.1177/1077801209361127

Reichenheim, M., Moraes, C., Szklo, A., Hasselmann, M., Souza, E., Lozana, J., & Figueiredo, V. (2006). The magnitude of intimate partner violence in Brazil: Portraits from 15 capital cities and the Federal District. *Cadernos de Saúde Pública / Ministério Da Saúde, Fundação Oswaldo Cruz, Escola Nacional de Saúde Pública*, *22*, 425–437. https://doi.org/10.1590/S0102-311X2006000200020

Rempel, E., Donelle, L., Hall, J., & Rodger, S. (2019). Intimate partner violence: A review of online interventions. *Informatics for Health and Social Care*, *44*(2), 204–219. https://doi.org/10.1080/17538157.2018.1433675

Roure, J. G. (n.d.). Domestic violence in Brazil: Examining obstacles and approaches to promote legislative reform. *COLUMBIA HUMAN RIGHTS LAW REVIEW*.

Saboury Yazdy, N., Talaei, A., Ebrahimi, M., Ghofrani Ivari, A., Pouriran, M. A., Faridhosseini, F., & Mohaddes Ardabili, H. (2022). "Be my Voice" to break social stigma against domestic violence: The underestimated role of smartphone applications in protecting victims in developing countries. *Frontiers in psychiatry*, *13*, 954602.

Sabri, B., Njie-Carr, V. P. S., Messing, J. T., Glass, N., Brockie, T., Hanson, G., Case, J., & Campbell, J. C. (2019). The weWomen and ourCircle randomized controlled trial protocol: A web-based intervention for immigrant, refugee and indigenous women with intimate partner violence experiences. *Contemporary Clinical Trials*, *76*, 79–84. https://doi.org/10.1016/j.cct.2018.11.013

Sabri, B., Tharmarajah, S., Njie-Carr, V. P. S., Messing, J. T., Loerzel, E., Arscott, J., & Campbell, J. C. (2022). Safety planning with marginalized survivors of intimate partner violence: Challenges of conducting safety planning intervention research with marginalized women. *Trauma, Violence, & Abuse*, *23*(5), 1728–1751. https://doi.org/10.1177/15248380211013136

Sanjel, S. (2015). Gender-based violence: A crucial challenge for public health. *Kathmandu University Medical Journal*, *11*(2), 179–184. https://doi.org/10.3126/kumj.v11i2.12499

Schraiber, L. B., D'Oliveira, A. F. P. L., França-Junior, I., Diniz, S., Portella, A. P., Ludermir, A. B., Valença, O., & Couto, M. T. (2007). Prevalência da violência contra a mulher por parceiro íntimo em regiões do Brasil. *Revista de Saúde Pública*, *41*(5), 797–807. https://doi.org/10.1590/S0034-89102007000500014

Sere, Y., Roman, N. V., & Ruiter, R. A. C. (2021). Coping with the experiences of intimate partner violence among South African women: Systematic review and meta-synthesis. *Frontiers in Psychiatry*, *12*. https://www.frontiersin.org/articles/10.3389/fpsyt.2021.655130

Sheridan, D. J., & Nash, K. R. (2007). Acute injury patterns of intimate partner violence victims. *Trauma, Violence, & Abuse*, *8*(3), 281–289. https://doi.org/10.1177/1524838007303504

Signorelli, M. C., Costa da Silva, V. L., Evans, D. P., Prado, S. M., & Glass, N. (2022). 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. *Journal of Family Violence*. https://doi.org/10.1007/s10896-022-00409-2

Signorelli, M., de Souza, F. G., Junior, R. V. B. P., Valente, J., Andreoni, S., Rezende, L. F. M., & Sanchez, Z. V. D. M. (2022). *Panorama of intimate partner violence against women in Brazil and its association with self-perception of health: Findings from a national representative survey* [Preprint]. In Review. https://doi.org/10.21203/rs.3.rs-1262159/v1

Só 7% das cidades brasileiras contam com delegacia da mulher. (n.d.). AzMina. Retrieved December 19, 2022, from https://azmina.com.br/reportagens/so-7-das-cidades-brasileiras-contam-com-delegacia-da-mulher/

Stacey, D., Légaré, F., Col, N. F., Bennett, C. L., Barry, M. J., Eden, K. B., Holmes-Rovner, M., Llewellyn-Thomas, H., Lyddiatt, A., Thomson, R., Trevena, L., & Wu, J. H. (2014). Decision aids for people facing health treatment or screening decisions. *The Cochrane database of systematic reviews*, (1), CD001431. https://doi.org/10.1002/14651858.CD001431.pub4

Stark, E., & Hester, M. (2019). Coercive control: Update and review. *Violence Against Women*, *25*(1), 81–104. https://doi.org/10.1177/1077801218816191

Stöckl, H., Devries, K., Rotstein, A., Abrahams, N., Campbell, J., Watts, C., & Moreno, C. G. (2013). The global prevalence of intimate partner homicide: A systematic review. *The Lancet*, *382*(9895), 859–865. https://doi.org/10.1016/S0140-6736(13)61030-2

Storer, H. L., Nyerges, E. X., & Hamby, S. (2022). Technology "Feels Less Threatening": The processes by which digital technologies facilitate youths' access to services at intimate partner violence organizations. *Children and Youth Services Review*, *139*, 106573. https://doi.org/10.1016/j.childyouth.2022.106573

Thomas C. R., Miller G., Hartshorn J. C., Speck N. C., Walker G. (2005). Telepsychiatry program for rural victims of domestic violence. *Telemedicine Journal & e-Health*, 11, 567–573. Crossref. PubMed. ISI.

van der Put, C. E., Gubbels, J., & Assink, M. (2019). Predicting domestic violence: A meta-analysis on the predictive validity of risk assessment tools. *Aggression and Violent Behavior*, *47*, 100–116. https://doi.org/10.1016/j.avb.2019.03.008

van Gelder, N. E., van Rosmalen-Nooijens, K. A. W. L., A Ligthart, S., Prins, J. B., Oertelt-Prigione, S., & Lagro-Janssen, A. L. M. (2020). SAFE: an eHealth intervention for women experiencing intimate partner violence - study protocol for a randomized controlled trial, process evaluation and open feasibility study. *BMC public health*, *20*(1), 640. https://doi.org/10.1186/s12889-020-08743-0

Vasconcelos, N. M., Andrade, F. M. D., Gomes, C. S., Pinto, I. V., & Malta, D. C. (2021). Prevalence and factors associated with intimate partner violence against adult women in Brazil: National Survey of Health, 2019. *Revista brasileira de epidemiologia = Brazilian journal of epidemiology*, *24*(suppl 2), e210020. https://doi.org/10.1590/1980-549720210020.supl.2

Waiselfisz, J. J. (2015.). *Mapa da violência 2015*. Retrieved April 18, 2023 from http://www.onumulheres.org.br/wp-content/uploads/2016/04/MapaViolencia_2015_mulheres.pdf

Wanzinack, C., Signorelli, M. C., Shimakura, S., Pereira, P. P. G., Polidoro, M., Oliveira, L. B., & Reis, C. (2019). Indigenous homicide in Brazil: geospatial mapping and secondary data analysis (2010 to 2014). *Ciencia & saude coletiva*, *24*(7), 2637–2648. https://doi.org/10.1590/1413-81232018247.23442017

Wanzinack, C., Souza, M. G. de, Lucchesi, V. D. O., & Signorelli, M. C. (2021). Homicídios de mulheres e meninas no estado do Paraná: Uma análise territorial retrospectiva de 2014 a 2018. *Guaju*, *6*(2), 140. https://doi.org/10.5380/guaju.v6i2.77269

Westbrook, L. (2008). Understanding crisis information needs in context: The case of intimate partner violence survivors. *The Library Quarterly*, *78*(3), 237–261. https://doi.org/10.1086/588443

World Health Organization (WHO). (2013). Global and regional estimates of violence against women: prevalence and health effects of intimate partner violence and non-partner sexual violence. Geneva, World Health Organization, 2013. Retrieved April 18, 2023 from https://www.who.int/publications/i/item/9789241564625

Wood, S. N., Glass, N., & Decker, M. R. (2021). An integrative review of safety strategies for women experiencing intimate partner violence in low- and middle-income countries. *Trauma, Violence, & Abuse*, *22*(1), 68–82. https://doi.org/10.1177/1524838018823270

Wu, V., Huff, H., & Bhandari, M. (2010). Pattern of physical injury associated with intimate partner violence in women presenting to the emergency department: A systematic review and meta-analysis. *Trauma, Violence, & Abuse*, *11*(2), 71–82. https://doi.org/10.1177/1524838010367503

Wuest J., Ford-Gilboe M, Merritt-Gray M., Varcoe C., Lent B., Wilk P., Campbell J. (2009). Abuse-Related injury and symptoms of posttraumatic stress disorder as mechanisms of chronic pain in survivors of intimate partner violence. *Pain Medicine*, 10, 739–747.

Yllo, K.A. (2005). Through a Feminist Lens: Gender, Diversity, and Violence: Extending the Feminist Framework.

Young-Hauser, A. M., Eden, K. B., Wilson, D., & Koziol-Mclain, J. (2014). Intimate partner violence: Modifying an internet-based safety decision aid to a New Zealand context. *Journal of Technology in Human Services*, *32*(4), 297–311. https://doi.org/10.1080/15228835.2014.967905