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Initial testing of components of the cultural determinants of trauma recovery (CDTR) theory amongst American Gender-Based violence survivors: Structural equation modelling

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Abstract

Aim: We tested key hypotheses derived from the Cultural Determinants of Trauma Recovery Theory (CDTR) with an American sample.

Design: A cross-sectional study using anonymous online surveys.

Methods: This study was conducted with 225 American survivors of gender-based violence (GBV) between August to November 2019. Demographics, distress (depression: PHQ8; PTSD: PCL-5), mental health service utilization (counselling and medication), sense of coherence (SOC), internal barriers to help-seeking (shame, frozen and problem management subscales: BHS-TR Internal) and the GBV healing (GBV-Heal) were used. Structural equation modelling (SEM) was conducted to test the hypotheses.

Results: The final SEM model showed that the relationship between distress and mental health service utilization was not mediated by internal help-seeking barriers; the relationship between distress and trauma healing was partially mediated by internal help-seeking barriers; the relationship between internal help-seeking barriers and trauma healing was partially mediated by SOC; mental health service utilization was not significantly associated with trauma healing. Overall, the relationship between distress and trauma healing was partially mediated by internal help-seeking barriers and SOC.

Conclusions: This study confirmed some hypothetical pathways between distress and trauma healing. Further research with larger and international samples should be necessary to test the overall CDTR and compare groups.

Impact: This study can help us focus on psychological interventions that enhance meaning and mitigate internal help-seeking barriers to promote holistic trauma recovery. Public and public contribution: The sample was gathered from a clinical population registry that alerts patients of potential research opportunities.

KEYWORDS
depression, gender-based violence, help-seeking barriers, nursing, posttraumatic stress disorder, psychological nursing, sense of coherence, structural equation theorizing, trauma recovery

1 | INTRODUCTION

Gender-Based Violence (GBV) is a human rights violation that is a pervasive threat to worldwide public health (Heise et al., 2002). We define GBV as harm inflicted on individuals and groups based on normative understandings about gender (Ott, 2021) and understand that GBV experience, and recovery, are deeply rooted in cultural beliefs and social norms and practices. GBV profoundly impacts survivors' health, social engagement, and overall quality of life. It increases women's long-term risk for health problems, including chronic pain, physical disability, drug and alcohol abuse, depression, and posttraumatic stress (Pico-Alfonso et al., 2006).

Emerging scientific models have emphasized that public health should be analysed in a Social Determinants of Health framework (Marmot, 2005; World Health Organization, 2016). Social Determinants of Health are the broader set of cultural, political, economic, and environmental circumstances, forces, and systems that shape the conditions of daily life. Whilst this model illustrates the critical importance of social structure and cultural forces, few have operationalized the *cultural* determinants of health. Culture is defined as a collectively formed and shared conceptual understanding, transmitted across generations, including an internalized set of mental perspectives, proclivities and motivations (Williams, 1995). Cultural determinants of health exist in any culture and include the beliefs, values, social organization and practices that are influenced by culture and influence health behaviour, health care utilization or help-seeking. We define cultural determinants of health as the interacting ideological, socio-economic, and practice-level processes that influence all health-related perceptions, categorizations and behaviours.

This paper proposes a cultural determinant of trauma recovery (CDTR) theory that focuses on how internalized beliefs, values, social organization and practices are influenced by culture. First, the paper outlines the revision of the cultural determinants of help-seeking theory to trauma recovery processes. Next, we hypothesize relationships amongst key variables. Whilst it is ideal to test the entire theory, some of its concepts have emerged from empirical qualitative data and have yet to be measured quantitatively. Furthermore, some of the variables in the theory have been measured in other countries. Still, the American sample is the only one for which we have most of the variables and healing outcome data, allowing testing of key variables in the theory. Unfortunately, sample size considerations for structural equation modelling (SEM) constrain the number of variables that can be tested. Nonetheless, this study used SEM to test key propositions arising from the theory using data from an American GBV sample, providing initial data about theoretical relationships.

1.1 | Cultural context, GBV and trauma recovery

Social and cultural dynamics significantly impact GBV experience and survivorship at the social or group level, guiding individual beliefs about the self and the world and individual and shared beliefs about recovery behaviours. For example, there is an emerging body of literature about the power of GBV normalization (Rodelli et al., 2021). Regardless of any given normalized behaviour, various external and internal pressures maintain cultural and social norms in all cultures. Individuals are discouraged from violating these norms through social control mechanisms such as social disapproval or punishment (Black, 2014). Likewise, individuals internalize norms and may feel guilt and shame if they violate them (Straus et al., 1988). Sinko and Saint Arnault found that social context was central to the survivors' shame and self-doubt and that confronting these norms was central to their healing (Sinko, Burn, et al., 2021). For example, Sinko, Burns, and Saint Arnault found that GBV survivors' perceptions of healing were rooted in the norms and values of their culture. Social norms about strength were central to social pressure on self-disclosure and help-seeking for American women. In contrast, beliefs about motherhood and the social consequences of 'breaking up the family' inhibited help-seeking for Irish women (Sinko, Burn, et al., 2021). Moreover, they found that de-normalization of violence was central in the survivor's ability to make sense of their situation, define violence for what it was, and move towards healing and recovery (Sinko, Munro-Kramer, et al., 2021).

Dworkin et al. also examine the influential role of social context, operationalizing it in terms of the social reactions survivors experience when they seek help after GBV (Dworkin et al., 2019). They report that the vast majority of survivors who disclose report receiving both positive social reactions (97%) *and* negative social reactions (98%) (Filipas & Ullman, 2001). They also found evidence suggesting that survivors report more negative social reactions when seeking help for more severe psychopathology. Harmful negative social reactions consisted of reactions turned against the survivor (victim-blaming, stigmatization) and unsupportive acknowledgement (controlling reactions, infantilization (Dworkin et al., 2019; Relyea & Ullman, 2015). Taken together, the importance of culture and GBV help-seeking is important. In addition, understanding more about the relationships between context, distress and barriers to help-seeking and recovery is warranted.

1.2 | Theoretical model

This study adopts the cultural determinants of help-seeking (CDHS) theory (Saint Arnault, 2009; Saint Arnault & Woo, 2018) to trauma recovery research, proposing the CDTR theory (see Figure 1). The original CDHS theory focused on help-seeking as a process that begins with perceiving abnormal circumstances or distressing physical or emotional sensations. Once signs of distress are experienced and labelled, the theory focuses on the interpretation processes and their influences on help-seeking actions. In the CDTR theory, we adapt, refine and expand the CDHS to theorize about trauma recovery.

1.2.1 | Culture

Culture is defined as the internalized and shared perceptions, beliefs and values that motivate or constrain practical and social activity. We propose that culture is an overarching dynamic process that impacts all interpretations of distress and help-seeking, recovery actions and

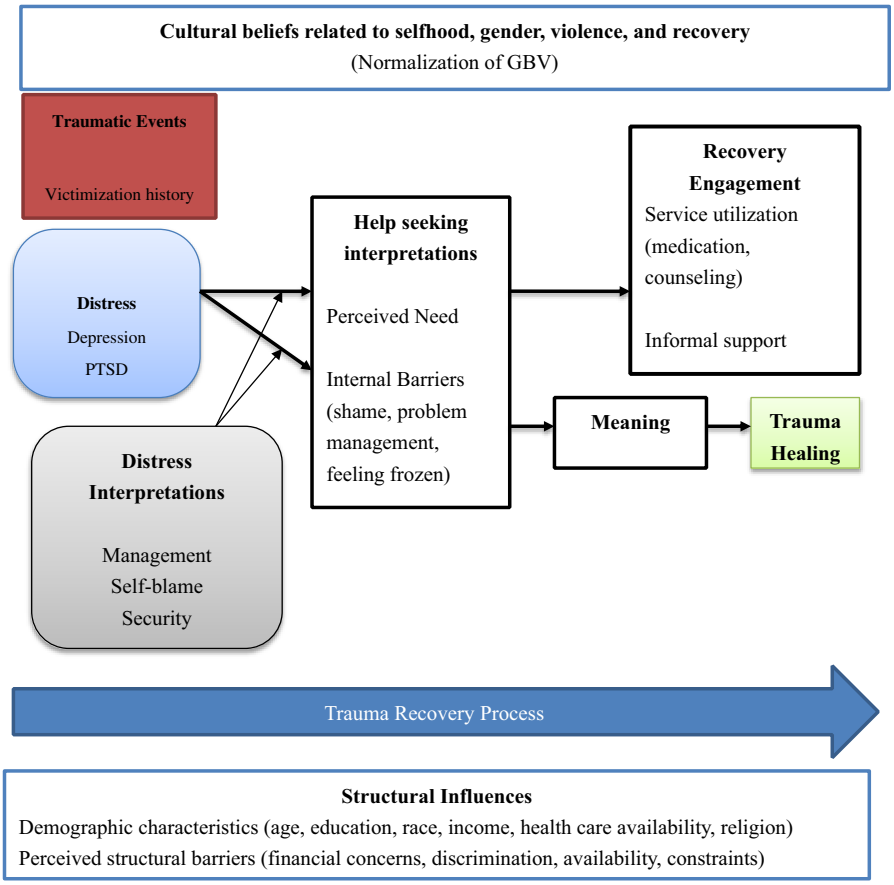


FIGURE 1 Theoretical model of cultural determinants of trauma recovery.

meaning-making. Unlike research that frames culture as existing only in non-majority populations, we believe culture exists in every group and frames all interpretive processes and behaviour. In addition, we are particularly interested in the cultural norms and practices that normalize GBV and the impact of internalizing these on survivors' recovery. We hypothesize that these internalized beliefs and values arise from culture and impact survivors' interpretations, responses, perceived barriers, recovery engagement and healing. Whilst it is desirable to test the impact of culture directly, at the time of this writing, a psychometric examination of the GBV normalization instrument is underway (Rodelli et al., 2021) and has not yet been applied to survivor trauma recovery.

1.2.2 | Structural influences

Using recommendations from the WHO's Social Determinants of Health model (World Health Organization, 2016), we consider structural influences to be characteristics of the sample and their social context that can impact health care utilization. These include age, race, education, income, religion and health care availability.

1.2.3 | Traumatic events

Survivors have often experienced more than one type of victimization, and many types of abuse occur together over time, often lasting for years. These include the victimization history (e.g., sexual assault, intimate partner violence, stalking and child abuse) and types of violence (e.g., physical violence, psychological/emotional violence and sexual violence) experienced by the survivor. We use this as a sample characteristic variable in this study, but we believe future studies could look at the cumulative effects of complex trauma on the recovery process.

1.2.4 | Distress experiences

Survivors describe their diverse distress experiences using cultural language and depressive and posttraumatic disorder (PTSD) symptoms are common (Heise et al., 2002).

1.2.5 | Interpretations

Our research has found two types of interpretations survivors engage in distress interpretations and help-seeking interpretations. *Distress Interpretations* are interpretations of the trauma events from intrapersonal and interpersonal perspectives. Distress Interpretations include whether the survivor believes they can manage the distress, their beliefs about their responsibility, feelings of security and safety and perceived stigma about their suffering (Sinko, Burn, et al., 2021; Sinko, Munro-Kramer, et al., 2021). We

are currently conducting qualitative interviewing to determine the contours of these phenomena and did not measure these variables in this study. *Help-Seeking Interpretations* are about one's perceived need for help, the perceived help, the available resources and the social consequences of seeking help (Ansara & Hindin, 2010; Fugate et al., 2005; Saint Arnault & Zonp Ozaslan, 2022; Westbrook, 2008).

Because of the normalization of GBV, there is a dynamic interplay between how survivors are treated socially and how they perceive themselves. Survivors can internalize the negative social reactions described above as self-blame, shame, and anticipatory stigma. A systematic review of 123 reports of GBV documents widespread survivors' self-blame, shame, internalized stigma and anticipatory stigma, as well as negative social reactions in response to survivors' disclosure (Kennedy & Prock, 2018; Sinko, Munro-Kramer, et al., 2021). From the perspective of theorizing about the cultural determinants of help-seeking for GBV, these interacting socio-cultural variables can influence survivors' interpretations of trauma, related distress experiences and willingness to self-disclose or seek help.

1.2.6 | Recovery engagement

Recovery engagement is the complex multidimensional process of mobilizing the actions, skills, and strengths that, together, restore or enhance health, security and well-being. Recovery engagement includes seeking help from informal sources such as one's social network and the use of social support. However, in a study of Irish Intimate Partner Violence survivors, we found no differences in mean levels of social support or social conflict for women who endorsed barriers to help-seeking (Saint Arnault & O'Halloran, 2016). Therefore, in the interest of parsimony, we excluded these variables to allow testing of our model with our relatively small sample.

Recovery engagement also includes seeking help from formal services, including formal mental health service use. However, literature has found that many trauma survivors are reluctant to seek professional help. Many trauma survivors avoid traumatic reminders and are concerned about dealing with specific memories in treatment (Kantor et al., 2017). Fugate et al. (2005) reported how women's perceptions could form significant barriers to seeking help for domestic violence (Fugate et al., 2005). The primary reason for not using services was the perception that the violence was 'not serious'. Similar findings were reported in a New Zealand study. More than 75% of the respondents reported telling someone about the violence; however, more than 40% of women indicated that no one had helped them. Almost one quarter indicated that they had not told anyone about their partners' violence, and almost half had not sought help from any formal services because they interpreted the violence as 'normal/not serious'; emotional investment in the relationship; staying for the sake of the children; feeling ashamed or embarrassed; or because they 'feared the consequences', wanted to 'deal with it alone' (Fanslow & Robinson, 2010).

In a recent systematic review, the most prominent barriers included concerns related to stigma, shame and rejection, low mental health literacy, lack of knowledge and treatment-related doubts, fear of negative social consequences, limited resources, time and expenses. Another prominent finding was that trauma survivors face specific trauma-related barriers to mental health service use, especially concerns about re-experiencing the traumatic events. Because mental health service use is a broad category, we define mental health service engagement as medication and counselling in this study. Furthermore, whilst trauma-informed and trauma-specific service use should be helpful, most survivors do not believe that the typical mental health service is not trauma-informed (O'Callaghan et al., 2022; Parcesepe et al., 2015). Therefore, we believe that the relationships between service use and trauma healing (as defined in our study) are unknown, leading us to ask a research question rather than hypothesize at this stage in the theory testing. Future studies will examine the breadth of survivors' informal recovery actions and trauma healing.

1.2.7 | Meaning

The recovery experience is influenced by consciousness of the self-in-the-world, often glossed as 'meaning.' Meaning is a set of evaluations about the self, one's purpose in life, and the meaning in one's life. Meaning-making processes have been described as central in this recovery journey (Courtois, 2017; Herman, 1998; Park, 2013; Sinko, Munro-Kramer, et al., 2021). Trauma-related meaning-making involves comprehending one's experience and the implications to selfhood, emotions and behaviour (Courtois, 2017). Meaning-making facilitates moving from a state of irresolution and pain into a state where one can work out, come to terms with and perhaps settle their emotional, cognitive and behavioural systems, restoring a homeostatic and peaceful state of recovery.

Park proposes meaning-related mechanisms in trauma recovery, theorizing that people have a global meaning-orienting system that provides cognitive tools to interpret their experiences and motivate functioning. She also proposes that the gap or distance between an individual's 'global meaning' and their interpretation of any given event causes distress and initiates behaviours to resolve the discrepancy. People may use actions that resolve the situation, thereby restoring a sense of the world as meaningful, or by reframing one's meaning of the events (meaning-making; Park, 2013). Herman also highlights the centrality of meaning in trauma recovery, noting that one source of distress is the moral questions of guilt and responsibility. The need for meaning-making allows survivors to reconstruct a system of belief that makes sense of undeserved suffering (Herman, 1998).

1.2.8 | Trauma healing

Contemporary research is beginning to differentiate the symptom reduction and symptom management aspects of trauma recovery from the holistic processes that constitute overall trauma recovery (or what we will call trauma healing) (Allen & Wozniak, 2010; Draucker et al., 2009). The restoration of the self and relationships

with others and the world involves learning to trust, reconnect to the self, connect with others, and restore hope and faith in the world. However, the subjective and cultural dimensions of trauma outlined above can impede resolution and restoration. The outcome of trauma recovery efforts for GBV survivors is the experience of healing, which includes feelings of personal power, authenticity with oneself and with others, and feeling hopeful and worthy. Trauma healing includes a more extensive, multifaceted set of experiences that includes self-related, social, spiritual, cultural, and psychological processes (Sinko & Saint Arnault, 2020). In a recent metasynthesis of 26 articles, recovery included active engagement in trauma processing and reexamination, managing negative states, rebuilding the self, connecting with others and regaining hope and power (Sinko, James, et al., 2021).

2 | THE STUDY

2.1 | Aims

This study aimed to test some hypotheses derived from the Cultural Determinants of Trauma Recovery Theory for 225 American GBV survivors. Sample size constraints and available instruments limited the variables we could study, and we excluded distress interpretations, perceived need, social conflict and social support (see Figure 2). Future studies with larger samples will examine these other interrelationships. The hypotheses we test are:

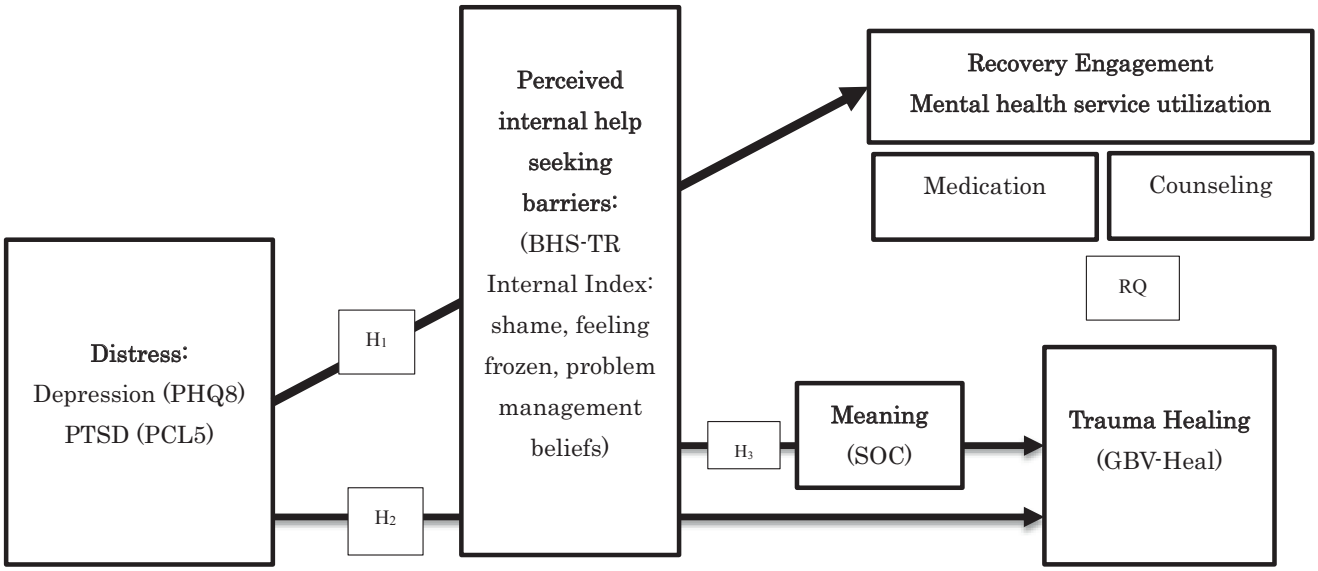
H1: The relationship between distress and mental health service utilization will be mediated by internal barriers to help-seeking.
H2: The relationship between distress and trauma healing will be mediated by internal help-seeking barriers.
H3: The relationship between internal barriers and trauma healing will be mediated by meaning.
RQ: What is the relationship between mental health service utilization (counselling and medication) and trauma healing.

2.2 | Design

This cross-sectional study uses structural equation modelling to test hypotheses derived from the CDTR theory.

2.3 | Participants

Eligible participants were 18 years or older, self-identified as women and self-identified as having experienced gender-based violence of any type.



H1: The relationship between distress and service utilization will be mediated by internal barriers to help seeking.
H2: The relationship between distress and trauma healing will be mediated by internal help seeking barriers.
H3: The relationship between internal barriers and trauma healing will be mediated by meaning.
RQ: What is the relationship between mental health service utilization (counseling and medication) and trauma healing.

FIGURE 2 SEM analytic model. H1: The relationship between distress and service utilization will be mediated by internal barriers to help seeking. H2: The relationship between distress and trauma healing will be mediated by internal help seeking barriers. H3: The relationship between internal barriers and trauma healing will be mediated by meaning. RQ: What is the relationship between mental health service utilization (counseling and medication) and trauma healing.

2.4 | Data collection

Sampling was conducted between August to November 2019. Participants were invited to join the study through a health system research portal designed to connect individuals who utilize the broader university health care system with research opportunities. Anonymous survey data were collected from an online survey platform. The survey took an average of 20 min to complete. A random sample of four participants was selected and received a $25 gift card.

2.5 | Questionnaires

The concepts in the CDTR theory are operationalized by the variables listed below.

2.5.1 | Traumatic events

Trauma events were assessed using two questions about victimizations history and types of violence to understand their background of violent experiences. Because survivors have often experienced more than one type of violence in their lifetime, the questionnaire about GBV victimization history allowed survivors to select all that apply from the list. In detail, they were asked to choose the kind(s) of violence they have experienced (including sexual assault, sexual harassment, intimate partner violence, stalking, forced prostitution and child abuse). Regarding types of violence, participants were asked to choose the detailed type(s) of violence when they experienced violence (including physical violence, psychological/emotional violence, sexual violence and economical/financial violence).

2.5.2 | Structural determinants

Structural influences were the control variables of this study and included age, ethnicity, sexual orientation, employment and educational background.

2.5.3 | Distress

Distress was assessed using depression and PTSD instruments. Depression was assessed with the Patient Health Questionnaire-8 (PHQ-8) was used to measure the degree and rate of depressive symptoms amongst the participants in the past week (Kroenke et al., 2009). The PHQ-8 has 8 items using a four-point Likert scale from 0 (not at all) to 3 (nearly every day) but excludes the suicide item that is included in the PHQ-9 (Kroenke & Spitzer, 2002). The score range was 0 to 24, and a higher score indicates more severe symptoms of depression. A score of 15 or higher indicates moderately severe to severe depression. Posttraumatic stress disorder was evaluated using the Posttraumatic Stress Disorder Checklist for DSM 5 (PCL-5) (Blevins et al., 2015; Bovin et al., 2016). The PCL-5 is a 20-item asking about symptoms of PTSD in the past 2 weeks and responding on a 4-point Likert scale: 0 (not at all) to 4 (extremely). The score range is 0 to 80, and a higher score means more severe symptoms of PTSD. The PCL-5 has a cutoff point over 31 for severe PTSD symptoms.

2.5.4 | Help-seeking interpretation

Barriers to help-seeking-trauma version (BHS-TR; Saint Arnault & Zonp Ozaslan, 2022; Thorvaldsdottir et al., 2021) is a 24-item measure of perceived barriers to help-seeking for GBV in the last year on a 4-point Likert scale from 0 'Did not influence me' to 3 'Strongly influence me'. Respondents were asked to indicate barriers they experienced when they had physical and/or psychological problems in the past year but did **not** seek help. This study used the 11 items belonging to the internal help-seeking barrier index, including the subscales 'Shame' (4 items) sample items: 'I was ashamed or embarrassed' and 'I thought my situation was normal or was not severe'), 'Frozen' (4 items) sample items: 'I felt paralyzed or frozen and unable to get started' and 'I was confused or unable to plan out all the details or step' and 'Problem management beliefs' (3 items) (sample item: 'I thought the problem would probably go away by itself'). The score range was 0 to 33, and a higher score means higher internal help-seeking barriers.

2.5.5 | Recovery engagement

We operationalized recovery engagement as the current utilization of mental health counselling and medication, measured with the help-seeking questionnaire (Lin et al., 1996) that asks respondents about their mental health service utilization in the past year, including professional medical, psychological, and medication therapies. If they answered yes to medication therapies for their mental health in the past year, they were identified as the current use of medications. In addition, if participants answered yes to either or both counselling and psychologist, they were coded as the current use of counselling. Binary variables (1 = use of medications and 0 = non-use of medication; 1 = use of counselling and 0 = non-use of counselling) were used statistical analyses.

2.5.6 | Meaning

The meaning was operationalized using the Sense of Coherence (SOC) scale (Antonovsky, 1993; Eriksson & Lindström, 2006) to measure understanding and meaning in life (no time frame). This scale has 13 items with a 7-point Likert scale and three subscales: Comprehensibility, manageability and meaningfulness. The score

ranges from 1 to 91, and higher scores indicate a higher sense of coherence.

2.5.7 | Trauma healing

Trauma Healing was operationalized using the Healing after Gender-Based Violence Scale (GBV-Heal) scale (Sinko et al., 2021; Sinko, Schaitkin, et al., 2021). This 18-item scale measures healing after GBV trauma with items on a 5-point Likert scale from 1: 'Not at all' to 5: 'To a great extent'. Respondents are asked to evaluate their current feelings (no time frame). This scale has four subscales: Relation to others (5 items) (sample item: 'I trust those close to me to act in my best interest'), Regaining hope and power (6 items) (sample item: 'I feel hope that healing is possible in time'), Self-connection (4 items) (sample item: 'I feel able to accept the parts of myself that I do not like'), and Trauma processing (3 items) (sample item: 'I am able to forgive myself for past behaviors that bring me guilt and shame'). The scores range from 18 to 90, and higher scores mean a higher trauma healing.

2.6 | Validity and reliability

The validities and reliabilities of the PHQ-8, PCL, SOC, BHS-TR, GBV-Heal were reported in the previous studies (Antonovsky, 1993; Blevins et al., 2015; Bovin et al., 2016; Eriksson & Lindström, 2006; Kroenke et al., 2009; Saint Arnault & Zonp Ozaslan, 2022; Sinko, Burns, et al., 2021; Sinko, Schaitkin, et al., 2021). The Cronbach's alphas of the total and subscale scores of those scales in this study were: PHQ-8 = 0.88; PCL-5 = 0.93; SOC = 0.82 (Total), 0.61 (Comprehensibility), 0.54 (Manageability) and 0.68 (Meaningfulness); BHS-TR = 0.84 (Total), 0.73 (Shame), 0.81 (Frozen), 0.50 (Problem management beliefs); GBV-Heal = 0.93 (Total), 0.86 (Relation to others), 0.86 (Regaining hope), 0.80 (Self-connection) and 0.75 (Trauma processing).

2.7 | Ethical considerations

The Ethical Committee of the University of Michigan (HUM00168381) approved the protocol used for this study.

2.8 | Data analysis

First, descriptive statistics of demographics and the main variables (i.e., PTSD, depression, SOC, perceived internal help-seeking barriers, and trauma healing) were calculated. Next, correlations between all variables were examined using Spearman's rank correlation coefficients after the distributions of those variables were confirmed. Next, structural equation modelling (SEM) was conducted using all the main variables according to the hypotheses (Figure 1). The model's fit with the data was evaluated using chi-square statistics (CMIN), degrees of freedom (*df*), the comparative fit index (CFI), the adjusted goodness-of-fit index (AGFI), the goodness-of-fit index (GFI) and the root mean square error of approximation (RMSEA; Schermelleh-Engel et al., 2003). A good fit would be indicated by CMIN/*df* < 2, CFI > 0.97, AGFI > 0.90, GFI > 0.95, RMSEA < 0.05, whilst an acceptable fit would be indicated by CMIN/*df* < 3, CFI > 0.95, AGFI > 0.85, GFI > 0.90, and RMSEA < 0.08 (Schermelleh-Engel et al., 2003). In addition, the Akaike information criterion (AIC) was used to compare models and explore the best model fit (Schermelleh-Engel et al., 2003). Next, variables that were not significantly associated with the other main variables were reduced to explore a better model to fit the data. After trimming, the model fit indicators were compared with find a better model to fit the data. Finally, a bias-corrected bootstrapping was performed to confirm the significance of the direct and indirect effects in the final SEM model. The minimum sample size in this study calculated by a priori Sample Size Calculator for Structural Equation Models (Soper, 2017; Westland, 2010) was 232 (anticipated effect size: 0.3; desired statistical power level: 0.8; number of latent variables: 5; the number of observed variables: 14; probability level: 0.05). Error variables of the endogenous variables in the SEM models (e.g. SOC, counselling, internal barriers and trauma healing) were used as potential factors influencing the endogenous variables except for the exogenous variables (i.e. depression, PTSD and medication) used in this study. This indicates potential and non-potential (measured) covariates were statistically and theoretically adjusted in the SEM models using these error variables (Schermelleh-Engel et al., 2003). The descriptive statistics and correlations were conducted using the Statistical Package for Social Science (SPSS) version 20.0 and SEM, including testing direct and indirect effects, for Amos 20.0 (IBM, Corp., 2013).

3 | RESULTS

3.1 | Participant demographics

A total of 225 participants took the survey. The mean age of the participants was 33.91 years (SD: 13.18), and its range was from 18 to 71 years old. Most of the participants were Caucasian (84.9%), heterosexual (72.0%) and employed (61.3%). Approximately 77.0% of the participants were students in a college or had a bachelor's degree, and 81.8% had had a history of mental health treatment. GBV history was not exclusive, and approximately 73% of this sample had experienced multiple victimizations (i.e. complex trauma). Reported GBV history was sexual assault (52.4%), sexual harassment (45.3%), intimate partner violence (43.1%), rape (79%), stalking (31.6%) and child abuse (30.7%). The common violence types were psychological/emotional violence (81.8%), sexual violence (68.4%) and physical violence (54.2%). A total of 129 (57.3%) and 154 (68.4%) of the participants received counselling (i.e. counselling and psychologist) and medication, respectively (see Table 1).

TABLE 1 Descriptions of demographics and main variables ($n = 225$)

Variables	Total Mean/*n* (SD/%)	Min-max
Age	33.91 (13.18)	18–71
Ethnicity (multiple answers)		
Caucasian	191 (84.9)	
Asian	16 (7.1)	
African American	12 (5.3)	
Hispanic/Latinx	11 (4.9)	
Native American	5 (2.2)	
Pacific islander	0 (0.0)	
Prefer not to answer	1 (0.4)	
Others	1 (0.4)	
Sexual orientations (multiple answers)		
Heterosexual	162 (72.0)	
Homosexual	11 (4.9)	
Bisexual	44 (19.6)	
Prefer not to answer	1 (0.4)	
Others	12 (5.3)	
Employment (multiple answers)		
Working for payment or profit	138 (61.3)	
Looking for a first regular job	6 (2.7)	
Unemployed	17 (7.6)	
Student or pupil	66 (29.3)	
Looking after home/family	12 (5.3)	
Retired from employment	8 (3.6)	
Unable to work due to permanent sickness or disability	19 (8.4)	
Others	4 (1.8)	
Education		
High school graduate	22 (9.8)	
Technical or junior college graduate	14 (6.2)	
College education without a degree	55 (24.4)	
College graduate	53 (23.6)	
Some postgraduate	19 (8.4)	
Graduate degree	50 (22.2)	
Others	3 (1.3)	
Missing	9 (4.0)	
Current utilization of counselling		
Yes	129 (57.3)	
No	96 (42.7)	
Current utilization of medication		
Yes	154 (68.4)	
No	71 (31.6)	
History of victimizations (multiple answers)		
Intimate partner violence	97 (43.1)	
Other relationship violence	60 (26.7)	
Child abuse	69 (30.7)	
Sexual assault	118 (52.4)	
Rape	79 (35.1)	
Sexual harassment	102 (45.3)	
Stalking	71 (31.6)	
Forced prostitution	6 (2.7)	
Others	19 (8.4)	
Violence types (multiple answers)		
Physical violence	122 (54.2)	
Psychological/emotional violence	184 (81.8)	
Sexual violence	154 (68.4)	
Economical/Financial violence	54 (24.0)	
Others	6 (2.7)	
Depression[a]		
Total score	9.98 (5.77)	0–24
≥15: Severe depressive symptoms	49 (21.8)	
PTSD[b]		
Total score	27.80 (17.88)	0–76
≥31: Severe PTSD symptoms	92 (40.9)	
Sense of Coherence[c]		
Total score	50.26 (12.75)	21–85
Comprehensibility	17.58 (5.53)	5–31
Manageability	16.50 (4.77)	4–28
Meaningfulness	16.18 (4.48)	6–28
Internal help-seeking barriers[d]		
Total score	16.31 (7.85)	0–33
Shame	5.84 (3.03)	0–12
Frozen	5.41 (3.69)	0–12
Problem management beliefs	4.60 (2.42)	0–9
Trauma healing[e]		
Total score	29.45 (14.50)	−8–68
Relation to others	8.20 (4.76)	−7–20
Regaining hope and power	9.78 (5.76)	−5–24
Self-connection	6.98 (3.74)	−1–16
Trauma processing	4.50 (2.87)	−3–12

Abbreviations: IPV, Intimate Partner Violence.

[a]Depression was measured using Patient Health Questionnaire.

[b]PTSD was measured using PCL-5.

[c]Sense of Coherence was measured using Sense of Coherence Scale.

[d]Internal and external help-seeking barriers were measured using help-seeking behaviour questionnaire.

[e]trauma healing was measured using the help-seeking questionnaire.

3.2 | Descriptive statistics

A total of 49 (21.8%) participants were identified as having severe depressive symptoms and 92 (40.9%) for severe PTSD symptoms according to the cutoff points of PHQ and PCL-5, respectively. SOC total means and subscales' scores were 50.26 (Total; SD: 12.75), 17.58 (Comprehensibility; SD: 5.53), 16.50 (Manageability; SD: 4.77), and 16.31 (Meaningfulness; SD: 7.85), respectively. The mean scores of total and the subscales of BHS-TR and GBV-Heal were: BHS-TR_Total = 16.31 (SD: 7.85), BHS-TR_Shame = 5.84 (SD: 3.03); BHS-TR_Frozen = 5.84 (SD: 3.69); BHS-TR_Problem management beliefs = 4.60 (SD: 2.42); GBV-Heal total = 29.45 (SD: 14.50); GBV-Heal_Relation to others = 8.20 (SD: 4.76); GBV-Heal_Regaining hope and power = 9.78 (SD: 5.76); GBV-Heal_Self-connection = 6.98 (SD: 3.74); GBV-Heal_Trauma processing = 4.50 (SD: 2.87; see Table 1).

3.3 | Correlations

The total score of trauma healing was positivity correlated with the total and subscale scores of SOC (Total: $r = 0.21$; Comprehensibility: $r = 0.17$; Manageability: $r = 0.19$; Meaningfulness: $r = 0.15$) and one subscale of BHS-TR (Frozen; $r = 0.14$), and negatively correlated with PTSD ($r = -0.18$) and depression ($r = -0.18$). The total and subscale scores of SOC were negatively correlated with BHS-TR (e.g., Total: $r = -0.30$; Comprehensibility: $r = -0.29$; Manageability: $r = -0.26$; Meaningfulness: $r = -0.21$). The total and subscale scores of BHS-TR scores were positively correlated with PTSD (Total: $r = 0.29$; Shame: $r = 0.21$; Frozen: $r = 0.34$; Problem management beliefs: $r = 0.18$), and one subscale of BHS-TR (Frozen) was positively correlated with Depression ($r = 0.18$). PTSD and Depression were positively correlated with each other ($r = 0.50$; see Table 2). There were no correlations between medication or counselling with any of the other study variables.

3.4 | Hypothesis testing using SEM path models

The original model to test the theoretical model (Figure 3) demonstrated a moderate fit with data: CMIN/df = 2.45, CFI = 0.90, AGFI = 0.86, GFI = 0.91, RMSEA = 0.08, AIC = 241.12. The model showed that (1) Distress was negatively associated with trauma healing ($\beta = -0.36$); (2) Distress was positively associated with internal help-seeking barriers ($\beta = 0.46$); (3) internal help-seeking barriers were negatively associated with SOC ($\beta = -0.40$): (4) SOC was positively associated with trauma healing ($\beta = 0.20$); internal help-seeking barriers were positively associated with trauma healing ($\beta = 0.22$).

We reduced a latent variable (i.e. mental health service utilization) which was not significantly associated with the other main variables (distress, internal barriers, SOC and trauma healing) to explore a better model to fit the data and compared the model fit indicators between the revised model and the original model. As the result, the original model seemed to be a better model to fit the data compared with the revised model without mental service utilization: CMIN/df = 3.05, CFI = 0.90, AGFI = 0.85, GFI = 0.91, RMSEA = 0.10, AIC = 207.32. The overall results (e.g. the significance of the relationships between the variables) were not different between the two models (Figure 4).

3.5 | Direct and indirect effects of distress in the final model

We examined the indirect effects of distress on the relationships amongst the variables. The significance levels for the direct and indirect effects between the variables used for the final SEM model (Figure 3) are shown in Table 3. The results demonstrated that the direct and indirect effects between the following variables: Direct effects: (1) Distress → Trauma healing ($p = 0.01$); (2) Internal help-seeking barriers → Trauma healing ($p = 0.046$); Indirect effects: (1) Distress →Internal help-seeking barriers → Trauma healing ($p = 0.03$); (2) Distress → Internal help-seeking barriers → SOC → Trauma healing ($p = 0.03$); (3) Internal help-seeking barriers → SOC → Trauma healing ($p = 0.047$).

3.6 | Summary of the results according to hypotheses

The result of this study (Figure 3 and Table 3) showed that distress and mental health service utilization were not mediated by internal help-seeking barriers (H1); the relationship between distress and trauma healing was partially mediated by internal help-seeking barriers (H2); the relationship between internal help-seeking barriers and trauma healing was partially mediated by SOC (H3); mental health service utilization was not significantly associated with trauma healing (RQ). In addition, in the overall pathway from distress to trauma healing, the relationship between distress and trauma healing was partially mediated by internal help-seeking barriers and SOC.

4 | DISCUSSION

This study tested hypotheses based on the CDTR theory using SEM. Our results found that internal help-seeking barriers did not mediate the relationship between distress and mental health service utilization; however, they partially mediated the relationship between distress and trauma healing. In addition, meaning (measured by SOC) partially mediated the relationship between internal help-seeking barriers and trauma healing, and mental health service utilization was not directly associated with trauma healing. Regarding the overall pathway from distress to trauma healing, internal help-seeking barriers and meaning (SOC) partially mediated the relationship between these variables.

TABLE 2 Correlations of all the variables ($n = 225$)

	1	2	3	4	5	6	7	8	9	10	11	12
1. PTSD[a]	–											
2. Depression[b]	0.50***	–										
3. SOC_Total	−0.50***	−0.54***	–									
4. SOC_Comprehensibiility	−0.37***	−0.38***	0.86***	–								
5. SOC_Manageability	−0.48***	−0.44***	0.86***	0.62***	–							
6. SOC_Meaningulness	−0.43***	−0.50***	0.83***	0.56***	0.60***	–						
7. Internal help-seeking barriers (BHS)_Total	0.29***	0.10	−0.30***	−0.29***	−0.26***	−0.21**	–					
8. BHS_Shame	0.21**	0.02	−0.26**	−0.26*	−0.24*	−0.16*	0.86**	–			–	
9. BHS_Frozen	0.34***	0.18**	−0.33**	−0.29*	−0.29*	−0.24*	0.79**	0.52***	–			
10. BHS_Problem beliefs	0.18**	0.06	−0.14*	−0.16*	−0.14*	−0.09	0.74**	0.64***	0.34**	–		
11. Trauma healing_Total	−0.18**	−0.18**	0.21**	0.17*	0.19*	0.15*	−0.02	−0.00	0.01	−0.03	–	
12. Trauma healing_Relation	−0.15*	−0.15*	0.20**	0.20**	0.17**	0.13*	−0.06	0.01	0.14*	−0.02	0.82***	–
13. Trauma healing_Hope	−0.11	−0.23***	0.11	0.09	0.11	0.08	0.03	0.05	0.07	−0.05	0.97***	0.60***
14. Trauma healing_Connect	−0.16*	−0.19**	0.21**	0.15*	0.20***	0.16*	−0.03	−0.07	0.06	−.06	0.82***	0.58***
15. Trauma healing_Process	−.16	−0.23***	0.22***	0.14*	0.21***	0.19**	−0.01	−0.03	0.01	−0.03	0.76***	0.55***
16. Age	0.08	0.12	−0.15*	0.28***	0.13	−0.01	−0.09	−0.23*	0.01	−0.12	−0.05	−0.002
17. Ethnicity[c]	−0.03	−0.08	0.06	0.07	0.04	0.02	−0.04	0.06	−0.05	−0.03	0.01	0.03
18. Sexual orientation[d]	−0.09	−0.10	0.12	0.06	0.16*	0.11	−0.03	−0.06	−0.09	−0.01	0.01	−0.02
19. Employment[e]	−0.10	−0.08	0.13*	0.11	0.06	0.16*	−0.01	0.03	−0.02	−0.02	0.02	0.05
20. Education[f]	−0.21**	−0.09	0.03	0.03	−0.003	0.05	0.00	0.00	0.01	−0.04	0.07	0.08
21. Complex trauma[g]	0.13	0.11	0.01	−0.10	−0.20**	−0.13	0.12	0.13	0.20*	0.02	0.06	0.06
22. Utilization of counselling[h]	0.06	0.02	−0.09	−0.09	−0.09	−0.10	0.04	−0.05	0.08	−0.08	0.11	0.12
23. Utilization of medication[i]	0.06	0.08	−0.07	−0.03	−0.07	−0.07	−0.03	0.04	0.01	−0.06	0.09	0.12

	13	14	15	16	17	18	19	20	21	22	23
13. Trauma healing_hope	–										
14. Trauma healing_connection	0.61***	–									
15. Trauma healing_process	0.58***	0.58***	–								
16. Age	−0.09	−0.03	−0.003	–							
17. Ethnicity[c]	0.03	−0.06	0.04	0.01	–						
18. Sexual orientation[d]	0.003	0.001	0.003	0.19*	0.10	–					
19. Employment[e]	−0.02	0.004	−0.02	−0.08	−0.001	−0.02	–				
20. Education[f]	0.03	0.07	0.09	0.13	0.12	−0.07	0.14*	–			
21. Complex trauma[g]	0.04	0.08	0.05	0.003	−0.04	0.11	0.01	0.02	–		

TABLE 2 (Continued)

	13	14	15	16	17	18	19	20	21	22	23
22. Use of mental health services[h]	0.09	0.03	0.12	0.14	−0.19*	0.06	0.04	0.06	0.11	—	
23. Utilization of medication[i]	0.07	−0.04	0.10	0.10	−0.17*	−0.04	0.04	0.10	0.11	0.32***	—

Note: Correlations of all the variables were calculated using Spearman's rank correlation coefficients.

Abbreviations: PTSD, Posttraumatic stress disorder; SOC, Sense of Coherence; Trauma healing_relation, Trauma healing_relation to others; Trauma healing_hope, Trauma healing_regaining hope and power; Trauma healing_connect, Trauma healing_self-connect; Trauma healing_processing, Trauma healing_trauma processing.

[a]0 = Non to mild PTSD symptoms, 1 = severe PTSD symptoms.

[b]0 = Non to mild/moderate depressive symptoms, 1 = severe depressive symptoms.

[c]0 = The other ethnicity, 1 = Caucasian.

[d]0 = The other sexual orientations, 1 = heterosexual.

[e]0 = Non-employed, 1 = employed.

[f]0 = Graduated senior high school or technical or junior college, 1 = Over college.

[g]0 = Single victimization, 1 = Multiple victimizations.

[h]0 = No, 1 = Yes;

[i]0 = No, 1 = Yes.

*$p < 0.05$;; **$p < 0.01$;; ***$p < 0.001$.

Our first hypothesis, that internal help-seeking barriers (shame, feeling frozen and problem management beliefs) would mediate the relationship between distress (PTSD and depression) and mental health service utilization (medication and counselling), was not upheld. We believe that this finding might be explained in two ways. First, we assumed that symptom severity might prompt a survivor to consider seeking formal mental health treatment but that internal barriers might decrease this help-seeking. However, most of our population was already using mental health services. The second possible reason may be that for those that were not seeking formal mental health services, their reasons may not have been captured by the internal barriers scale. This finding aligns with previous studies, which demonstrated that because women who experience GBV often fear that self-disclosure will be met with unsupportive, judgmental, or critical blame, they are most likely to seek informal support (Williams & Mickelson, 2008) or use other actions to promote recovery, such as self-care, finding internal peace, seeking justice and working on relationships (Sinko, Goldner, et al., 2021). This finding may imply the importance of women's sense of control over their recovery process and relate to the idea that survivors may feel shame and freezing, but that they continue to seek healing despite these barriers, especially in the realms of meaning-making and self-empowerment (Frazier, 2003).

The mediation effect of internal barriers on the relationship between distress and trauma recovery is an important finding that should be considered in trauma recovery intervention. Although the internal barriers scores of the sample seem low, there appears to be a positive correlation between distress and internal barriers, showing that the higher symptoms might be associated with increased shame, more feelings of being frozen or unable to act, or beliefs that their symptoms are normal or that the survivor wants to deal with it on their own. These interactions may disable help-seeking, which could prolong or exacerbate the symptom burden, leading to more shame and freezing (Timblin, 2021; Zhu et al., 2020).

We were surprised that the internal barrier or feeling frozen was positively associated with trauma healing. Some of the items are 'I could not seem to clarify my feelings or know what I needed' and 'I was afraid I could not clearly express my needs'. One possible reason for this relationship might be that survivors may use alternative strategies for dealing with internal barriers, such as trying to confront and overcome feelings of shame and immobilization or freezing. Thus, survivors with high freezing scores may use other recovery actions to heal from their trauma (Sinko, Goldner, et al., 2021). This finding, therefore, helps advance the science of trauma recovery by pointing to additional recovery dynamics that need to be explored in qualitative research and additional variables that might need to be added to the model.

Our second hypothesis, that internal barriers (including shame, feeling frozen, and problem management beliefs) would mediate the relationship between distress and trauma healing, was partially supported. Internal barriers mediated the relationship between distress and trauma healing. The link between shame and PTSD symptomology

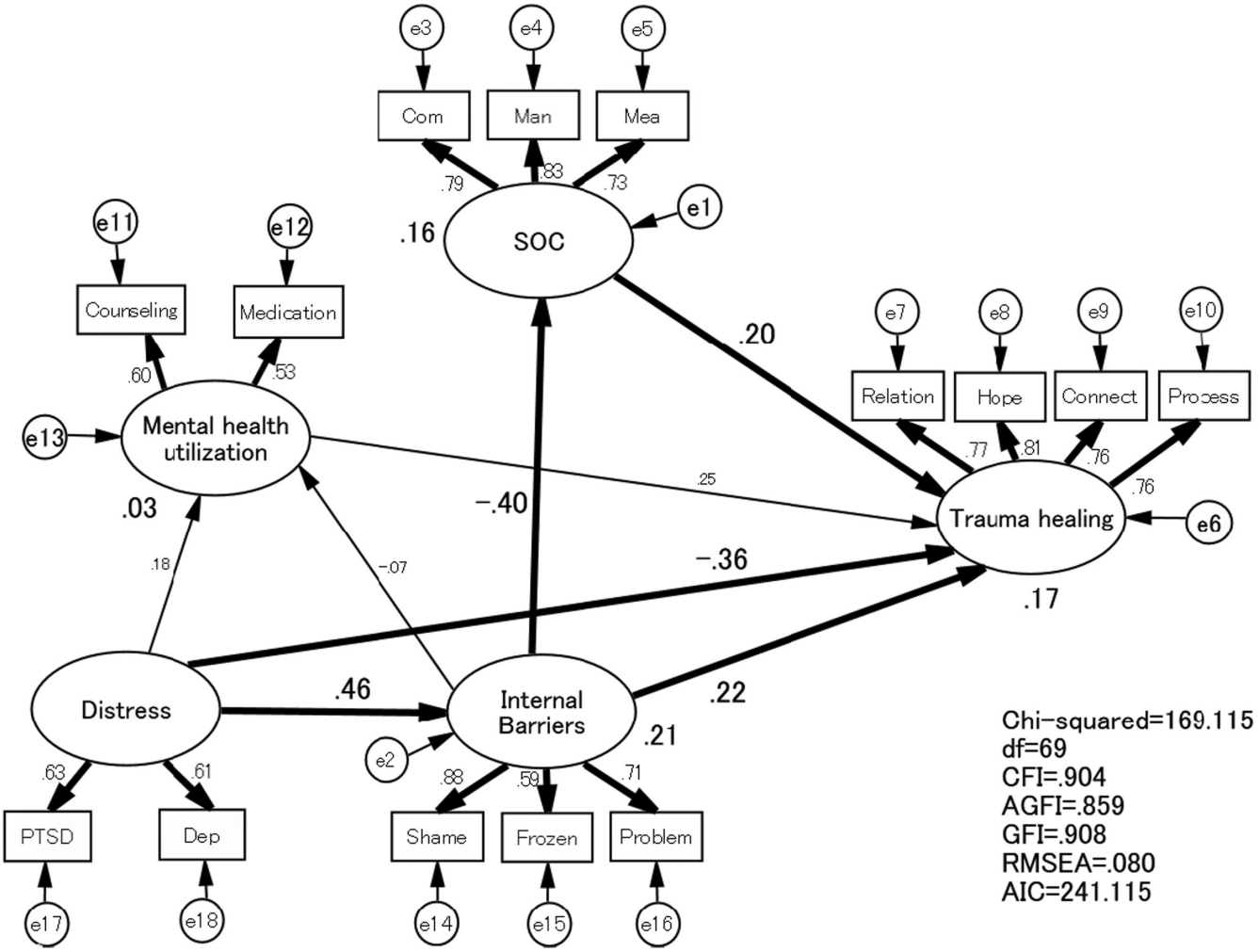


FIGURE 3 The SEM model to test the cultural determinants of trauma recovery (CDTR) model: Final model ($n = 225$). *Note*. Dep, Depression (the sum score of PHQ); PTSD, Post traumatic stress disorder (the sum score of PTSD); SOC, Sense of Coherence; Com, Comprehensibility; Man, Manageability; Mea, Meaningfulness; Internal barriers, Internal help seeking barriers; Problem, Problem management beliefs; Relation, Relation to others; Hope, Regaining hope and power; Connect, Self-connection; Process, Trauma processing; CFI, Comparative Fit Index; AGFI, Adjusted Goodness-of-Fit Index; GFI, Goodness-of-Fit Index; RMSEA, Root Mean Square Error of Approximation; AIC, Akaike's Information Criterion; Significant paths are in bold.

has been acknowledged (La Bash & Papa, 2014). However, less is known about shame and depression. Some authors have also found an association between avoidance coping and PTSD (Tipsword et al., 2021), whilst shame and depression are connected by way of rumination and self-recrimination (Bhuptani & Messman, 2021). We understand this relationship to be related to the nature of GBV as an interpersonal trauma, which therefore more directly and strongly influences one's sense of trust with others and the self, compared with those of natural disasters or severe disease (e.g. cancer; Labadie et al., 2018; Sinko & Saint Arnault, 2020). In addition, the symptoms of PTSD, such as intrusion and avoidance, may lead to distrust with others when trying to seek help. These symptoms might therefore be related to more shame and feeling frozen. In combination with the significant interactions between SOC and internal barriers, this relationship suggests that providers must attend to more than psychological symptoms and symptom management and examine survivors' stories about holistic aspects of recovery after GBV, such as meaning-making.

Our hypothesis, that meaning (SOC) would mediate the relationship between internal help-seeking barriers and trauma healing, was partially supported. We conceptualized trauma recovery using the GBV-heal instrument rather than decreased symptoms (Sinko, Schaitkin, et al., 2021). The GBV-heal instrument measures healing in relation to others, regaining hope, self-connection and trauma processing. Therefore, we believed that meaning should be related since self-understanding and meaning in life are essential components of hope and self-connection in the aftermath of some types of GBV (Harvey, 1996, 2000). We also saw that this was true when the symptom profile of the survivors included either depression or PTSD. We suspect that meaning (the motivational component of the SOC) is the active ingredient in this mediation pathway (Almedom & Glandon, 2007; Schäfer et al., 2019).

This study posed the research question asking whether mental health services are related to trauma healing. Whilst mental health service use may be an essential component of recovery,

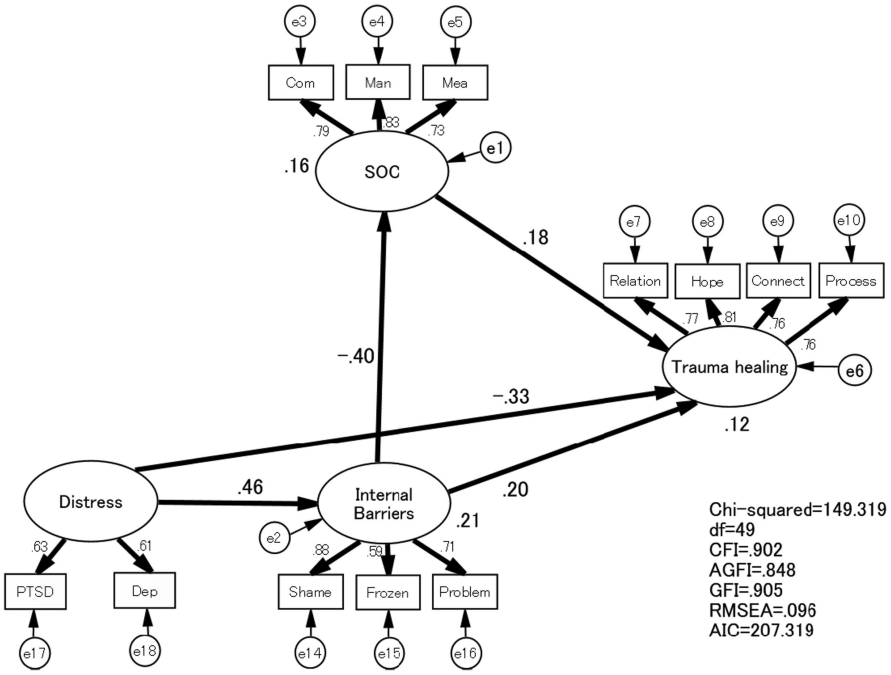


FIGURE 4 The revised SEM model to test the cultural determinants of trauma recovery (CDTR) model after removing mental health utilization ($n = 225$). *Note*. Dep, Depression (the sum score of PHQ); PTSD, Post traumatic stress disorder (the sum score of PTSD); SOC, Sense of Coherence; Com, Comprehensibility; Man, Manageability; Mea, Meaningfulness; Internal barriers, Internal help seeking barriers; Problem, Problem management beliefs; Relation, Relation to others; Hope, Regaining hope and power; Connect, Self-connection; Process, Trauma processing; CFI, Comparative Fit Index; AGFI, Adjusted Goodness-of-Fit Index; GFI, Goodness-of-Fit Index; RMSEA, Root Mean Square Error of Approximation; AIC, Akaike's Information Criterion; Significant paths are in bold.

TABLE 3 Significances of the direct and indirect effects

	p
Direct effects	
Distress → Trauma healing	0.01
Internal barriers → Trauma healing	0.046
Distress → Service utilization	0.19
Indirect effects	
Distress → Internal barriers → Trauma healing	0.03
Distress → Internal barriers → SOC → Trauma healing	0.03
Internal barriers → Service utilization → Trauma healing	0.61
Distress → Internal barriers → Service utilization → Trauma healing	0.57
Distress → Internal barriers → Service utilization	0.37
Internal barriers → SOC → Trauma healing	0.047

Note: The significances of the direct and indirect effects were tested using a bias-corrected bootstrapping.

Abbreviations: SOC, Sense of Coherence; PTSD, Posttraumatic stress disorder; Internal barriers, Internal help-seeking barriers.

most survivors do not use it or do not use it specifically for their trauma. Also, aspects of mental health services focus on symptom reduction (medication), and research supports the notion that symptom reduction alone is insufficient for healing (as measured in this study; O'Callaghan et al., 2022; Parcesepe et al., 2015). This finding suggests that we need to continue evaluating the interventions and processes needed in counselling or psychotherapy that encourage or facilitate meaning-making. We need to centre meaning in our interventions, providing survivors opportunities to recognize, understand and make meaning of their trauma (and their symptoms) for their life (Daneshvar et al., 2020; van der Spek et al., 2017). The importance of encouraging meaning-making throughout counselling, apart from or in addition to symptom reduction (such as providing medications when warranted), can help support holistic healing after GBV.

5 | LIMITATIONS

There are a few limitations of this study. First, this study was conducted using a cross-sectional design. Although the SEM model showed a moderate fit with data according to the hypotheses, the causal relationships between the variables may not be concluded yet. An additional longitudinal investigation should be necessary to identify more clear causal relationships between the variables tested in this study.

Second, the sample size of this study was relatively small, which may lead to type B errors in the significance of the associations amongst the variables. Indeed, the sample size of this study ($n = 225$) was slightly smaller than the minimum sample size calculated ($n = 232$). Thus, another study with a bigger sample size would

be needed to understand the relationships between the variables fully.

Third, the participants were collected in only one country and recruited using the university health system research portal. Thus, the participants of this study might be culturally and socio-economically biased (e.g. most of the participants were Caucasian and had a college degree/education). Previous studies have suggested that cultural norms and beliefs strongly influence trauma recovery (e.g. stigma on trauma and help-seeking) amongst and environment (e.g. social support system and resources) around survivors (Rodelli et al., 2021). Those findings indicate that the process of trauma recovery, such as the associations between the variables used for this study, may differ depending on survivors' cultural and socioeconomic backgrounds. At the time of our study, the trauma healing instrument we used had not yet been used with international samples. We have several studies underway validating and using this inventory with GBV survivors in other cultural groups, and we will re-evaluate this model when we have sufficient participants. Overall, further studies about survivors with diverse cultural and socio-economic backgrounds will be necessary to understand the impact of culture and socio-economic status on their trauma recovery and suggest effective transcultural interventions for survivors of GBV.

Fourth, the Cronbach's alpha reliability scores of the subscales of the SOC ranged from 0.54 to 0.68, which is consistent with findings from Zonp and Saint Arnault, in press, who found alpha reliabilities for SOC with GBV survivors ranged from 0.53 to 0.81. However, these are lower than those reported by Antonovsky (α = 0.74 to 0.91; Antonovsky, 1993). It is unknown whether this finding indicates that recognition of, or coping strategies to deal with life stressors, may differ between survivors of GBV and general populations. Thus, the results of this study should be interpreted cautiously. Additional investigations will examine these possibilities.

Fifth, because of the limited sample size, setting, and variables of this study, we could test only the parts of the CDTR as an initial step. Whilst we collected variables regarding the part of 'structural influences', such as demographics (e.g. race, age, education and income), and used these as error variables in the SEM models to adjust potential confounding factors. A further study with larger sample sizes and more variables in multiple countries, using more advanced analyses, such as a multiple-group SEM to test moderation and medication effects, should be necessary to test the whole CDTR theory.

6 | CONCLUSION

This study was a cross-sectional study for the American survivors of GBV to test the cultural determinants of trauma recovery (CDTR) theory using structural equation modelling. This study found that internal help-seeking barriers did not mediate the relationship between distress and mental health service utilization but partially mediated the relationship between distress and trauma healing. In addition, SOC partially mediated the relationship between internal help-seeking barriers and trauma healing, and mental health service utilization was not significantly associated with trauma healing. In the overall pathway from distress to trauma healing, internal help-seeking behaviours and SOC partially mediated the relationship between these variables. These results enhance our understanding of trauma recovery processes amongst GBV survivors and suggest the importance of providing psychological interventions that enhance meaning and mitigate internal help-seeking barriers to promote holistic trauma recovery.

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CONFLICT OF INTEREST

None.

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DATA AVAILABILITY STATEMENT

Authors do not wish to share the data.

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