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A Web-based Psychoeducation Program for People with Pathological Dissociation: Development and Pilot Testing

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ABSTRACT

Purpose: Although people with pathological dissociation (PD) can benefit from specific interventions, there are challenges in providing suitable interventions for them in the field (e.g., high cost, lack of specialized services, stigma). Many people with PD cannot receive dissociation-focused services in their current service locations. It is important to develop easily-accessible interventions that can support people with PD, especially for those who cannot access dissociation-specific treatment. The authors developed a web-based psychoeducation program to support people with PD, and examined its feasibility and acceptability.

Method: A single-group pretest-posttest pilot study was conducted.

Results: Findings showed that most of the intended psychosocial outcomes were achieved as planned, which initially proved the feasibility and acceptability of the program.

Discussion: This is one of the first studies that report the use of web-based interventions to support people with PD, especially those who are in the early stages of recovery. The findings suggest that information and communication technology can contribute to different aspects of clinical practice, including recruitment, engagement, assessment and interventions. Further discussion and research are required.

KEYWORDS

Pathological dissociation; dissociative disorders; post-traumatic symptoms; web-based psychoeducation; mental health; online methods

Pathological dissociation (PD), which is defined as "a disruption of and/or discontinuity in the normal integration of consciousness, memory, identity, emotion, perception, body representation, motor control, and behavior" (American Psychiatric Association, 2013, p. 291), is generally regarded as a post-traumatic reaction (Irwin, 1999; Van der Hart et al., 2005), and is a common mental health problem that affects a large number of people (Lyssenko et al., 2018; Şar, 2011, 2014). Examples of PD include: amnesia for painful memories, depersonalization, intrusive symptoms (e.g., flashbacks) and identity dissociation (e.g., awareness of the presence of other personality states) (Dell, 2009). PD has been well operationalized with reliable and valid measures for many years, such as the Dissociative Experiences Scale-Taxon (DES-T) (Bernstein & Putnam, 1986; Waller & Ross, 1997), the Dissociative Disorders Interview Schedule (DDIS) (Ross, 1997; Ross et al., 1989), the Structured Clinical Interview for DSM-IV Dissociative Disorders (SCID-D) (Steinberg, 1994) and the Multidimensional Inventory of Dissociation (MID)

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(Dell, 2006). PD occurs not only in patients with dissociative disorders, but it may also affect patients with other mental disorders, such as post-traumatic stress disorder (PTSD) and borderline personality disorder (BPD) (Ross, 2007; Ross et al., 2014; Dell, 2009). Studies have shown that PD is common in both clinical and nonclinical settings (see Şar, 2011). Although untreated PD can lead to significant impairment and distress, specific interventions – in particular, trauma-informed and dissociation-focused interventions – have been found to be effective in people with PD (Brand et al., 2009).

Current challenges in providing suitable treatments for people with PD

Despite the existence of empirically supported treatments, there are many challenges in providing suitable interventions for people with PD. For example, dissociation-focused interventions are not often available in many places. A lack of professional education about trauma and dissociation has been a serious issue in the field (International Society for the Study of Trauma and Dissociation, 2011). In addition, specialized individual therapy is expensive and unaffordable for many people who need help. Further, stigma and discrimination are also significant barriers to accessing mental health services in many cultures; as a result, some people with mental health problems tend not to seek help from professionals. Stigma increases the difficulties of recognizing and treating individuals with mental health problems in general, and PD in particular, in the community. For people suffering from trauma and dissociation, sometimes it can be difficult for them to quickly establish a trusting relationship (treatment alliance) with their therapists (Chu, 1988; Cronin et al., 2014). As such, easily-accessible interventions are particularly important for this group of service users, especially those who cannot access dissociation-specific treatment.

A web-based psychoeducation program for people with PD

The possibility of using web-based interventions

The literature suggests that web-based interventions can be used in helping people with different mental health problems (Andersson & Titov, 2014; Lal & Adair, 2014). There is evidence supporting the use of web-based interventions for many mental health problems, including depression (Karyotaki et al., 2017), anxiety (Reger & Gahm, 2009) and psychosis (Rotondi et al., 2010). Systematic reviews also indicate that web-based interventions for PTSD can result in moderate to large effect sizes (Kuester et al., 2016; Simblett et al., 2017).

Advantages of web-based interventions include overcoming time and geographical limits, powerful distribution capability, enabling a disinhibition effect, supporting asynchronous interactions (Chan & Ngai, 2018), ensuring a sense of safety, and potentially being more cost-effective (Andersson & Titov, 2014). These functionalities may potentially overcome the problems of service unavailability, expensive service charges, and stigmatization faced by people with PD.

However, until recently, no study has investigated any web-based intervention for people with PD. During the development of the present study, Brand et al. (2019) provided the first report of an online intervention study in the dissociative disorders

field – they reported that their online educational program can help their participants reduce symptoms; however, their program was not fully self-paced because participation of the user's therapist was required. Given the advantages and technical features of information and communication technology (ICT) mentioned above, more efforts should be made to investigate the possibility of using online methods to assist people with PD.

Rationales of using psychoeducation

First, psychoeducation is an essential component in the treatment of both PTSD and PD and should be included in any early intervention for PD (Cloitre et al., 2012; Brand et al., 2012; Phoenix, 2007). People with PD need to learn many things, such as acknowledging the impacts of trauma, identifying triggers, understanding and coping with their symptoms and mastering self-help skills.

Moreover, psychoeducation is helpful for people with other trauma-related conditions. Studies have shown that psychoeducation can be used to reduce both stigma (Pratt et al., 2005) and PTSD symptoms (e.g., Kuhn et al., 2017; Possemato et al., 2016). Moreover, a recent meta-analysis of group treatments for complex PTSD revealed that both trauma processing therapies (e.g., exposure) and psychoeducation interventions are better than usual care (Mahoney et al., 2019). Psychoeducation may be helpful for people with PD too.

Last but not least, psychoeducation can be implemented in self-help formats, which are generally helpful for people with mental health problems and are effective and superior to waitlist or no treatment conditions (Den Boer et al., 2004; Lewis et al., 2012).

In sum, psychoeducation is text-based, structured and self-administered, and therefore it is flexible and can be easily delivered using online methods (e.g., Blog, YouTube audiobook). No matter which online platform is used, the web-based psychoeducation program provides users with access to the psychoeducation package (text- or audio-based materials) wherever they are. As such, the nature of psychoeducation makes it very suitable to be adapted in a web-based learning package, which is easily accessible, self-paced, and has high privacy settings.

The contents

We developed the psychoeducation content for the web-based program by making reference to (1) the trauma psychoeducation/self-help literature (e.g., Fisher, 1999; McFetridge et al., 2017; Phoenix, 2007; Whitworth, 2016), (2) the PD treatment literature (Ross & Halpern, 2009; International Society for the Study of Trauma and Dissociation, 2011; Brand et al., 2009, 2012; Van der Hart et al., 2006), (3) online resources that include discussion of self-help tips or coping strategies for people with pathological dissociation (e.g., www.discussingdissociation.com), and (4) other works that review and discuss the use of psychoeducation for people with mental disorders (e.g., Kumar et al., 2015; Motlova et al., 2017).

In order to cover relevant topics and at the same time provide readers with enough time to read and process the psychoeducation materials, the full set of the trauma-informed, dissociation-focused psychoeducation package includes 12 chapters (see Fung & Ross, 2019). This set of materials, written in English, aims at enabling readers to (1) understand post-traumatic and dissociative reactions, (2) learn healthy coping strategies,

and (3) remain hopeful for recovery. The web-based psychoeducation program in the present study used 6 chapters (number of words ranges from 832 to 3143 per chapter) from this package. Thus, it includes 6 sessions that aim to contain several psychoeducation elements (see Table 1).

Session 1 uses Chapter 1 from the psychoeducation package (i.e., Fung & Ross, 2019). It is an introduction to the program and it also focuses on dispelling stigma and promoting hope for recovery (elements: 3, 8).

Session 2 (Chapter 2) focuses on safety issues. It discusses common challenges in life and suggests some possible solutions (elements: 1, 9).

Session 3 (Chapter 3) introduces some basic self-help skills and aims at helping users better prepare for future challenges (elements: 1, 7, 10).

Session 4 (Chapter 4) discusses the impacts of trauma and stress and explains why these are reversible (elements: 2, 3, 4, 8).

Session 5 (Chapter 5) aims at enabling users to identify and cope with the common reactions to trauma and stress (elements: 2, 4, 5, 6, 7, 9).

Session 6 (Chapter 8) focuses on the theme "trauma recovery and integration of the personality". It aims at enabling users to be familiar with the process and direction of recovery. It also explains why "integration" is the goal of recovery and reviews some important concepts related to trauma recovery so as to decrease shame and confusion (elements: 3, 4, 5, 8).

After each session, users are invited to do homework assignments or record their reflections on what they had learned. The assignments are also based on the psychoeducation package.

The steps

The psychoeducation materials are delivered using the specific online platform regularly with e-mail notifications and reminders (e.g., every 5 days or every week), according to the printed schedule and sequence (6 sessions in total). Users are asked to do the post-session homework assignments, but no comments or feedbacks are provided in the program. Users can revisit previous psychoeducation materials whenever they want during the program.

Table 1. Elements of the web-based psychoeducation program.

Number	Psychoeducation elements	Examples of relevant literature
1	Safety issues, trigger management and crisis planning	Brand et al., 2012; Fisher, 1999; International Society for the Study of Trauma and Dissociation, 2011
2	Education about the impacts of trauma and stress	Herman, 1992; Phoenix, 2007
3	Education about the condition (e.g., diagnosis), treatment options and the hope of recovery	Herman, 1992; Phoenix, 2007
4	Education about the concept of dissociation	Ross & Halpern, 2009; Van der Hart et al., 2006
5	Promoting internal (intrapersonal/inter-personality) communication and cooperation and integration of the personality	International Society for the Study of Trauma and Dissociation, 2011; Van der Hart et al., 2006
6	Identifying and coping with symptoms	Brand et al., 2012; Fisher, 1999; Whitworth, 2016
7	Self-help skills and coping strategies	Fisher, 1999; Whitworth, 2016
8	Decreasing shame and confusion and dispelling myths and stigma	Fisher, 1999; Whitworth, 2016
9	Understanding and resolving interpersonal problems	Brand et al., 2012; Ross & Halpern, 2009
10	Self-care and living well	Stige, 2011

A pilot study

We conducted a single-group pretest-posttest pilot study in March to May 2019 in order to explore the potential benefits of using this web-based psychoeducation program to support people who suffer from PD. This pilot study only used six sessions of the program.

Sample

This study was approved by The Hong Kong Polytechnic University (PolyU) Human Subjects Ethics Sub-committee. People who were suspected or confirmed to have PD were recruited through online channels (e.g., Facebook Groups and Fan Pages related to mental health). The 23 phenomena of PD suggested by Dell (2009) were listed for potential participants to learn about examples of PD. Interested people were invited to complete an online screening survey. They were told that they could freely access psychoeducation and self-help resources in a 6-session online program and that no face-to-face contact was required. Inclusion criteria included: aged 18 or above; agreed to give online informed consent; can read and write English; and can access the Internet. Exclusion criteria included (1) self-reported recurrent suicidal ideation and (2) suicidal attempts or homicidal plans in the past two months because it is believed that people with these high-risk symptoms need active interventions rather than psychoeducation. E-Mail addresses were collected for the following purposes: (1) granting access to the intervention program; (2) E-Mail contact (e.g., sending reminders and the post-intervention survey); and (3) matching screening (pretest) and posttest data. For technical reasons (Google Classroom user needs a Gmail account), those who could not provide a Gmail address were also excluded. Online methods such as these can greatly facilitate the research process (Chan, 2016; Chan et al., 2017; Chan & Holosko, 2016).

Participants who met the inclusion criteria were granted permission to access the online program. They were asked to complete an online survey again immediately after completing the program (posttest).

The program and treatment adherence

Participants were granted access to a 6-session web-based psychoeducation program delivered using Google Classroom. The Google Classroom-based program included six sessions as described above. The text-based reading materials were uploaded to the Google Classroom once every five days (i.e., 6 times in total). Participants received E-Mail notifications and reminders. The intervention was implemented as planned because the program was structured and because the contents were fixed. Other than sending e-mail reminders and resolving technical problems, the researcher did not interact with the participants. We encouraged their participation through e-mail reminders; we did not provide feedback, suggestions or other interventions for participants.

Instruments and outcome measures

To explore the potential benefits of the program, the following outcome measures were used, which included a dissociation measure, two measures of comorbid symptoms (i.e., PTSD and depression symptoms) and a measure of clinical recovery:

The Dissociative Experiences Scale-Taxon (DES-T)

The DES-T is a self-report measure of PD. It is a subscale (items 3, 5, 7, 8, 12, 13, 22 and 27) of the original DES (Bernstein & Putnam, 1986; Waller et al., 1996). Ross et al. (2002) suggested using 20 as the DES-T cutoff score for screening for dissociative disorders. The DES-T was administered at pretest (i.e., screening survey) and posttest.

The post-traumatic stress disorder checklist for DSM-5 (PCL-5)

The PCL-5 is a self-report measure of post-traumatic symptoms (Blevins et al., 2015). Bovin et al. (2016) suggested that 31 to 33 were the optimal cutoff PCL-5 scores for detecting PTSD. The PCL-5 was administered at pretest and posttest.

The Patient Health Questionnaire-9 (PHQ-9)

The PHQ-9 is a 9-item measure of depression (Kroenke & Spitzer, 2002). Manea et al. (2012) indicated that 8 to 11 were acceptable PHQ-9 cutoffs for detecting major depressive disorder. The PHQ-9 was administered at pretest and posttest.

The clinical recovery ("Mastering my illness") subscale of the Recovery Assessment Scale – Domains and Stages (RAS-DS)

The RAS-DS is a self-report measure of mental health recovery with excellent internal reliability and validity (Hancock et al., 2015). It has been suggested that it is a promising outcome measure because of its responsiveness (Scanlan et al., 2018) (for the details, see https://ras-ds.net.au/). The 7-item Clinical Recovery subscale (e.g., *"I can identify the early warning signs of becoming unwell", "My symptoms interfere less and less with my life"*) of the RAS-DS (i.e., CR) was administered at pretest and posttest. The CR mainly assesses the sense of control over symptoms and how well a person can master his/her symptoms.

The Client Satisfaction Questionnaire adapted to internet-based interventions (CSQ-I)

The CSQ-I is a self-report measure that is designed specifically for assessing global satisfaction with a Web-based intervention. It has 8 items and has been validated in the German context; its English version is also available, although its psychometric properties have not been evaluated (see Boß et al., 2016). The English version of the CSQ-I was administered at posttest. However, we changed the word "training" to "program" on each item to fit our study.

In addition to the above-mentioned outcome measures, we also included the following instruments at pretest:

The self-report version of the Dissociative Disorders Interview Schedule (DDIS)

The DDIS is a structured diagnostic interview for dissociative disorders, and a self-report version (i.e., SR-DDIS) is also available (Ross & Browning, 2017; Ross et al., 1989). It includes sections that assess Schneiderian first-rank symptoms, BPD and secondary

features of dissociative identity disorder (DID). The SR-DDIS sections for DSM-5 dissociative disorders, BPD and secondary features of DID were administered at pretest.

The Brief Betrayal Trauma Survey (BBTS)

The BBTS is a 24-item self-report measure of both childhood and adulthood trauma (Goldberg & Freyd, 2006). It assesses 12 different types of traumatic events before and after age 18. Participants may answer "never", "one or two times" or "more than that" for each item. The BBTS was administered at pretest. In this study, a participant was considered to have experienced a certain traumatic event if he/she endorsed "one or two times" or "more than that" for that item.

Demographic information and psychiatric histories were also gathered at pretest, and questions for feedback were included in the posttest survey.

Data analysis

Statistical analysis was conducted using SPSS 22. We compared pretest characteristics for completers (i.e., participants who completed the posttest) and non-completers (i.e., participants who accessed the Google Classroom but did not submit the posttest) using chi-square and independent sample t tests.

Both completers analysis and intent-to-treat (ITT) analysis (using the last observation [i.e., pretest data] carried forward method) were conducted.

Paired sample t tests were used to explore differences in DES-T, PCL-5, PHQ-9 and CR scores between pretest and posttest. Cohen's *d* was calculated to assess the effect size for paired sample t tests (0.2 = small effect size, 0.5 = moderate effect size, 0.8 = large effect size) (Sawilowsky, 2009). In particular, we tested the following three hypotheses: 1) participants would have significant decreases in dissociation scores (i.e., the DES-T scores) after the program; 2) the participants would have significant decreases in the measures of comorbid symptoms (i.e., the PCL-5 and PHQ-9 scores) after the program; and, 3) participants would have significant increases in the clinical recovery measure (i.e., the CR scores) after the program. Descriptive data were also examined.

Results

Overall sample characteristics

Eighty-three individuals completed the screening survey and gave informed consent. Among them, 23 did not meet the criteria to participate (e.g., no Gmail address was provided, or self-reported recurrent suicidal ideation, suicidal attempts or homicidal plans in the past two months). Access to the intervention platform (Google Classroom) was granted to the remaining 60 individuals through e-mail, but 20 of them did not accept the invitation.

Therefore, this pilot study had a total of 40 participants (37 females, two males, and one reported as "others") who accepted an invitation to the platform and received the intervention. Their data were included for analysis. Their ages ranged from 20 to 70 (M = 41.1, SD = 12.0); 60.0% were currently employed. They were from diverse regions, including the United States (55.0%), United Kingdom (10.0%), Canada (7.5%), Australia (5.0%), Germany (5.0%) and Hong Kong (5.0%).

Twenty-five participants (62.5%) completed the posttest survey. Except for one participant who only completed 4 chapters, all other participants reported that they had read all 6 chapters. These 25 participants were "completers" and the other 15 participants were "non-completers" (attrition rate = 37.5%).

This is a highly traumatized and dissociative sample. At pretest, the mean DES-T score was 44.8 (SD = 23.2), only 10% scored below 20 on the DES-T; the mean PCL-5 score was 57.4 (SD = 12.1), and only one participant scored below 33 on the PCL-5. Participants reported an average of 8.2 (SD = 4.37) secondary features of DID. On the BBTS, they reported an average of 5.45 (SD = 2.78) and 4.55 (SD = 2.81) types of childhood and adulthood trauma, respectively. Twenty participants (50%) self-reported a clinical diagnosis of major depressive disorder, 15% reported acute stress disorder, 77.5% PTSD, 62.5% any dissociative disorder (35.0% DID), and 15.0% BPD. Most participants (75%) were currently receiving psychological treatments for post-traumatic and/or dissociative symptoms/disorders, and 40% were receiving medications.

Except for the diagnosis of depersonalization/derealization disorder and the number of adulthood traumas on the BBTS, chi-square and independent sample t tests revealed no significant differences in major variables between completers and non-completers. Non-completers were more likely to report a clinical diagnosis of depersonalization/derealization disorder than completers (40% vs 12%), $\chi 2$ (1) = 4.215, p =.040); they also endorsed significantly more types of adulthood trauma than completers (M = 5.80, SD = 3.19 vs M = 3.80, SD = 2.31), t = 2.296, p = .027).

Outcomes

To test the 1st hypothesis, we examined the changes in dissociation scores. No significant changes in the DES-T scores were observed after the program. Therefore, the 1st hypothesis was refuted.

To test the 2nd hypothesis, we examined the changes in measures of comorbid symptoms. Both completers analysis and ITT analysis showed that participants had a significant decrease in their PCL-5 and the PHQ-9 scores from pretest to posttest. There were moderate effect sizes for PTSD symptoms and depression in the completers analysis; the effect sizes were in the small-to-moderate range in the ITT analysis. Therefore, the 2nd hypothesis was corroborated.

To test the 3rd hypothesis, we examined the changes in the measure of clinical recovery. There was a moderate effect size for CR scores in the completers analysis; the effect size was in the small-to-moderate range in the ITT analysis. Therefore, the 3rd hypothesis was corroborated.

Table 2 summarizes the pretest and posttest scores, mean differences and effect sizes.

Satisfaction

The mean CSQ-I score for completers was 2.83 (SD = .90). Most completers agreed that the web-based psychoeducation program helped them understand and manage their conditions and remain hopeful for recovery. Table 3 presents the descriptive data regarding completers' satisfaction with the program.

Table 2. Mean differences in pretest and posttest scores on outcome measures.

	Intent-to-treat analysis (N = 40)							
	Pretest		Posttest					
Variables	Mean	SD	Mean	SD	t	p	Cohen's d	Cohen's d 95% CI
DES-T Total	44.81	23.23	42.47	25.18	1.841	0.073	0.09	[−0.01, 0.19]
PCL-5 Total	57.40	12.07	53.03	15.08	2.632	0.012	0.31	[0.07, 0.55]
PHQ-9 Total	17.60	4.43	16.18	6.14	2.322	0.026	0.25	[0.04, 0.46]
CR Total	18.58	3.51	19.93	4.12	−2.623	0.012	−0.35	[−0.62, −0.08]
	Completers analysis (N = 25)							
	Pretest		Posttest					
Variables	Mean	SD	Mean	SD	t	p	Cohen's d	Cohen's d 95% CI
DES-T Total	43.00	21.80	39.25	24.69	1.876	0.073	0.15	[−0.01, 0.32]
PCL-5 Total	57.68	11.02	50.68	15.46	2.763	0.011	0.50	[0.12, 0.88]
PHQ-9 Total	17.48	4.22	15.2	6.68	2.405	0.024	0.37	[0.06, 0.68]
CR Total	18.24	3.39	20.4	4.33	−2.753	0.011	−0.55	[−0.96, −0.13]

Notes: DES-T = The Dissociative Experiences Scale-Taxon; PCL-5 = The Post-traumatic Stress Disorder Checklist for DSM-5; PHQ-9 = The Patient Health Questionnaire-9; CR = The Clinical Recovery ("Mastering my illness") subscale of the Recovery Assessment Scale – Domains and Stages.

Table 3. Satisfaction with a web-based psychoeducation program for pathological dissociation (N = 25).

The Client Satisfaction Questionnaire adapted to Internet-based interventions (CSQ-I)	Does not apply to me (%)	Does rather not apply to me (%)	Does partly apply to me (%)	Does totally apply to me (%)
1. The program I attended was of high quality	8	16	44	32
2. I received the kind of program I wanted	12	12	48	28
3. The program has met my needs	16	20	40	24
4. I would recommend this program to a friend, if he or she were in need of similar help	12	20	36	32
5. I am satisfied with the amount of help I received through the program	12	40	16	32
6. The program helped me deal with my problems more effectively	20	20	36	24
7. In an overall, general sense, I am satisfied with the program	16	8	36	40
8. I would come back to such a program if I were to seek help again	20	12	36	32
Overall feedback	**Strongly disagree (%)**	**Disagree (%)**	**Agree (%)**	**Strongly agree (%)**
1. Do you think the web-based psychoeducation for pathological dissociation (WPPD) program can help you understand your conditions?	0	16	52	32
2. Do you think the WPPD program can help you manage your conditions?	12	24	52	12
3. Do you think the WPPD program can help you remain hopeful for recovery?	0	32	40	28
4. Do you think the WPPD program is easy-to-use?	8	8	36	48

On two 10-point items, completers rated an average of 8.00 (SD = 2.27) for "*the contents relate to your experience*" and 8.40 (1.87) for "*have learned the contents before*". This means the psychoeducation was very relevant for them.

Fourteen completers provided written feedback at posttest. For example:

"I guess for people who haven't been exposed to the psychology of trauma, the program might help them feel less alien and be reassuring."

"I've been diagnosed with DID for a long time and the program was more geared toward those with a recent diagnosis. Later chapters I found more useful in comparison to earlier ones."

"Just being validated in my experiences of derealization post-trauma is exceptionally helpful. Post-trauma we feel so unrelatable that research like this helps us to understand the psychological after effects of trauma. It takes the unreal (unnoticed or misunderstood by society who don't like to look at victimization and trauma) and makes it real, which for some strange reason, makes me feel safer."

"I think the content was good and well explained in a way that was easy to understand. However, as someone with a learning disability, and a dissociative disorder I think it would be helpful to break up the information, adding some visuals would also help, and spaces between the words, it was hard to maintain focus on what was being explained."

"While the information was not new to me, because a big part of my struggle is avoidance, it was good to read, and then go back and do the work attached."

We identified several preliminary themes/points: (1) The formats (e.g., spacing) of the reading materials can be improved; (2) the program is more helpful for those who are new in the recovery process; (3) and the program may be enriched by adding additional content (e.g., more practical exercises and more information regarding the neurobiology of trauma).

Discussion

People with PD are an underserved population. The paper discusses the need of using ICT to enhance support and service provision to people with PD and describes the development of a web-based psychoeducation program for people with PD. We undertook a pilot study to explore the possibility of using this web-based program to support people with PD. At posttest, participants with PD reported statistically significant reductions in PTSD and depressive symptoms and improvements in clinical recovery (mastering illness). The effect sizes were small-to-moderate. Most participants were satisfied with the program, although there is room for improvement. We were not surprised that reductions in the dissociation scores on the DES-T were not statistically significant because in prior studies significant score reductions are not observed until after months of outpatient psychotherapy (Ross, 2005).

The study is preliminary and there are several limitations. For instance, the sample size was small, the intervention was brief, and program usage data were not examined. Moreover, the pilot study did not include a control group and most participants were female. There are various possible reasons that most participants were female. In fact, in most previous studies on dissociation, most participants were also female (e.g., Ross & Ellason, 2005; Brand et al., 2019). Besides, some studies showed that females were more likely to suffer from dissociation, which may have sociocultural reasons (e.g., women were more likely to be victimized) (Şar, 2011). Despite the limitations, the findings are encouraging and indicate that a web-based psychoeducation program is feasible and acceptable and may be beneficial for people who suffer from PD. In particular, there were significant improvements in comorbid symptoms and clinical recovery, and participants were generally satisfied with the program. In the literature, ICT-enhanced treatments have been suggested to be cost-effective for many mental health problems, and we believe that this

also applies to people with PD. There are several issues that require discussion - in particular, how ICT can contribute to different components of mental health practice.

Effective recruitment and initial engagement via social media

In some places, dissociation-focused services are not available. Some people with PD need to travel long distances to receive treatment, while others can only receive general treatments that do not specifically target dissociative symptoms. Given their high accessibility and low cost, online programs can effectively reach out to a large number of people with mental health problems so as to easily recruit and engage people who may be suffering from PD. Previous studies have already indicated that social media can facilitate outreach engagement in social work practice (e.g., Chan & Holosko, 2017). In the pilot study, the program successfully recruited and engaged participants in different regions via various forms of social media. The web-based psychoeducation program has the potential to become a helpful resource for those people with PD who cannot access specialized dissociation-focused services. The findings suggest that mental health practitioners should consider using more online channels to effectively engage those who need timely services. Future web-based programs can be further improved by making the registration and confirmation processes more user-friendly and automatic (e.g., verifying the e-mail address automatically) and using a more accessible platform (e.g., a platform that does not necessarily require certain specific e-mail account).

Timely identification, assessment and evaluation using online questionnaires

Early identification of PD is often difficult in clinical settings. PD in psychiatric patients is usually unrecognized for many years before it is detected with standardized measures (International Society for the Study of Trauma and Dissociation, 2011). It has been suggested that online assessments using reliable and valid measures can facilitate early identification and timely assessment of mental health problems, including PD (Chan et al., 2017; Collins & Jones, 2004; Fung et al., 2018). In the pilot study, online questionnaires that included standardized measures not only helped screen for PD and assess related psychosocial factors (trauma histories, depression), but also helped monitor changes over time. In clinical practice in which support services are delivered using online methods, such as the web-based psychoeducation program, online questionnaires can ensure the possibility of early identification of people with PD, timely assessment of their mental health problems and regular evaluation of the service provided. Online assessments should be considered to facilitate screening and assessment in mental health practice.

Self-paced web-based learning can provide early support for people with PD

ICT sometimes makes the impossible possible. Without ICT, many people with PD may not be able to access any dissociation-specific resource in their own community. Web-based resources or interventions have become a new approach to support people with mental health problems (Andersson & Titov, 2014; Reger & Gahm, 2009). As illustrated in the pilot study, the web-based psychoeducation program for people with PD is fully online and self-administered. It is highly structured. There is a printed schedule and sequence.

Program users know which part to go through first. This feature not only confirms intervention fidelity, but also ensures that they start with the basics. For example, the program talks about safety issues first because these are the primary concerns; the program introduces self-help skills and coping strategies first because these are the foundations of recovery. To our knowledge, this is one of the first studies – another one is Brand et al. (2019) – that investigates web-based interventions for PD. The preliminary yet encouraging results suggest that web-based psychoeducation may be helpful for some people with PD. Most participants in our sample had been receiving therapy for trauma and/or dissociation; both qualitative feedback and ratings indicated that many participants had learned the content before. We believe that the web-based psychoeducation program would be most helpful for those who are in the early stages of treatment and recovery. Web-based psychoeducation has the potential to be a helpful entry-level first step intervention for people with PD. It is not designed to replace traditional treatment, but it may become a helpful resource in the early phases of recovery. For example, this program can be used to provide early support for mental health service users who have screened positive for having PD.

To conclude, this study explores the feasibility of using online methods to support people with PD. A pilot study of a web-based psychoeducation program was undertaken. The preliminary findings suggest that the web-based program is feasible and acceptable and that the technical features of ICT can contribute to different components in mental health practice, including recruitment, engagement, assessment and interventions. This study highlights the potential benefits of using web-based psychoeducation to support people with PD, especially those who are in the early stages of recovery. Further studies are needed to evaluate the cost-effectiveness of web-based interventions for people with PD and investigate whether the full web-based psychoeducation program can become an evidence-based entry-level support for people with PD, especially those who cannot access dissociation-focused services in their community.

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