





Demanding and effective: participants' experiences of internet-delivered prolonged exposure provided within two months after exposure to trauma

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ABSTRACT

Background: The use of remotely delivered early intervention after trauma may prevent and/or reduce symptoms of post-traumatic stress. Our research group evaluated a novel three-week therapist-guided internet-delivered intervention based on prolonged exposure (Condensed Internet-Delivered Prolonged Exposure; CIPE) in a pilot trial. The results indicated that the intervention was feasible, acceptable and reduced symptoms of post-traumatic stress at post-intervention compared to a waiting-list condition. Exposure to traumatic memories can be emotionally demanding and there is a need for detailed investigation of participants' experiences in receiving this type of intervention remotely.

Objective: Investigate participants' experiences of receiving CIPE early after trauma.

Method: In this study, qualitative thematic analysis was used and semi-structured interviews with 11 participants six months after intervention completion were conducted. All interviews were audio-recorded and transcribed verbatim.

Results: One overarching theme labelled as 'demanding and effective' was identified. Participants expressed that treatment effects could only be achieved by putting in a lot of effort and by being emotionally close to the trauma memory during exposure exercises. Participants reported CIPE to be a highly credible- and educative intervention that motivated them to fully engage in exposure exercises. The most distressing parts of the intervention was perceived as tolerable and important to do to heal psychologically after trauma. For many participants, the possibility to engage in the intervention whenever and where it suited them was helpful, although some participants described it as challenging to find a balance between their own responsibility and when to expect therapist support. The internet-based format was perceived as a safe forum for self-disclosure that helped some participants overcome avoidance due to shame during imaginal exposure.

Conclusion: CIPE was considered demanding, yet effective by the interviewed participants. The most distressing parts of the intervention was perceived to be the most important and were tolerable and feasible to provide online.

Exigente y eficaz: experiencias de los participantes de exposición prolongada a través de internet proporcionada dentro de dos meses posteriores a la exposición al trauma

Antecedentes: El uso de una intervención temprana administrada a distancia después de un trauma puede prevenir y/o reducir los síntomas de estrés postraumático. Nuestro grupo de investigación evaluó una nueva intervención de tres semanas entregada por internet y guiada por un terapeuta, basada en exposición prolongada (Exposición prolongada condensada por Internet; CIPE por sus siglas en inglés) en un ensayo piloto. Los resultados indicaron que la intervención fue factible, aceptable y redujo los síntomas de estrés postraumático en la postintervención en comparación con una condición de lista de espera. La exposición a recuerdos traumáticos puede ser emocionalmente exigente y es necesario realizar una investigación detallada de las experiencias de los participantes al recibir este tipo de intervención de forma remota.

Objetivo: Investigar las experiencias de los participantes al recibir CIPE en forma temprana después del trauma.

Método: En este estudio se utilizó un análisis temático cualitativo y se realizaron entrevistas semiestructuradas con 11 participantes seis meses después de finalizada la intervención. Todas las entrevistas fueron grabadas en audio y transcritas textualmente.

Resultados: Se identificó un tema general etiquetado como 'exigente y eficaz'. Los participantes expresaron que los efectos del tratamiento solo se pueden lograr haciendo un gran esfuerzo y estando cerca emocionalmente del recuerdo del trauma durante los ejercicios de exposición. Los participantes informaron que CIPE era una intervención educativa y de gran credibilidad que los motivó a participar plenamente en los ejercicios de exposición. Las partes más angustiantes de la intervención se percibieron como tolerables e importantes

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关键词

早期干预; 延长暴露; 预防; 急性应激障碍 (ASD); 创伤后应激障碍 (PTSD); 在线干预; 创伤; 体验

HIGHLIGHTS

- Condensed online prolonged exposure (CIPE) was perceived by participants as a demanding yet effective early intervention after trauma.
- The most distressing part, revisit the memory of the traumatic event, was perceived as the most helpful component.

para sanar psicológicamente después del trauma. Para muchos participantes, la posibilidad de participar en la intervención cuando y donde les convenía fue útil, aunque algunos participantes describieron como desafiante el encontrar un equilibrio entre su propia responsabilidad y cuándo esperar el apoyo del terapeuta. El formato basado en Internet se percibió como un foro seguro para la autorrevelación que ayudó a algunos participantes a superar la evitación debida a la vergüenza durante la exposición imaginaria.

Conclusión: CIPE fue considerada exigente, pero eficaz por los participantes entrevistados. Las partes más angustiantes de la intervención fueron percibidas como las más importantes y fueron tolerables y factibles de proporcionar en línea.

高需求和有效: 参与者创伤暴露后两个月内的网络延长暴露体验

背景: 在创伤后使用远程早期干预可以预防和/或减轻创伤后应激症状。我们的研究组在预试验中, 评估了一种为期三周的基于延长暴露, 有治疗师指导的新颖网络干预措施 (密集型网络延长暴露 CIPE)。结果表明, 干预是可行的, 可接受的并且相较于等候名单条件, 在干预后减轻了创伤后应激症状。暴露于创伤性记忆可能在情感上是高需求的, 需要对参与者远程接受此类干预的体验进行详细考查。

目的: 考查参与者在创伤后早期接受CIPE的体验。

方法: 在本研究中, 使用定性主题分析, 在干预完成六个月后对11名参与者进行了半结构化访谈。所有采访均进行录音并逐字记录。

结果: 确定了一个标记为‘高需求和有效’的总体主题。参与者表示, 只有通过付出大量努力并在暴露练习中在情感上贴近创伤记忆, 才能达到治疗效果。参与者报告说, CIPE是一种高度可靠且具有教育意义的干预措施, 可以促使他们充分参与暴露练习。在创伤后为了治愈心理, 干预中最痛苦的部分被认为是可以忍受且很重要的。对于许多参与者, 能够在适合他们的时间和地点参加干预的可能性是有帮助的, 尽管一些参与者认为在其责任与何时期望治疗师支持之间寻求平衡是一个挑战。基于网络的方式被认为是一个自我披露的安全论坛, 可以帮助一些参与者克服在假想曝光时因羞耻感产生的回避。

结论: 受访者认为CIPE是高需求但有效的。干预中最痛苦的部分被认为是最重要的, 可以容忍并且可以在线提供。

1. Introduction

Trauma is common in the general population and may lead to both short and long-term psychological reactions such as intrusions, avoidance of reminders of the trauma, alterations in arousal and reactivity and changes in cognition and mood. Around 5–6% of people exposed to trauma develop Post-Traumatic Stress Disorder (PTSD) (Koenen et al., 2017), a debilitating disorder associated with an increased risk of suicide attempts (Arnberg et al., 2015) and various psychiatric and medical conditions such as depression, substance use, anxiety disorders, heart problems and autoimmune diseases (Kessler, Sonnega, Bromet, Hughes, & Nelson, 1995; McFarlane, Atchison, Rafalowicz, & Papay, 1994; Song et al., 2018).

Interventions within the first 3 months after a potentially traumatic event have been defined as early interventions (Roberts, Kitchiner, Kenardy, Lewis, & Bisson, 2019). Trauma-focused cognitive behaviour therapies (CBT-T) provided within the first days to up to 3 months after the traumatic event has in several trials been shown to be effective in reducing symptoms of post-traumatic stress (eg. Bryant, Harvey, Dang, Sackville, & Basten, 1998; Bryant, Moulds, & Guthrie, 2000; Maples-Keller et al., 2020; Rothbaum et al., 2012; Sijbrandij et al., 2007). A common component in the treatment protocols used has been exposure to trauma reminders in the form of both trauma-related situations (*in vivo* exposure) and trauma memories (imaginal

exposure). The role of the therapist has traditionally been regarded as very important in exposure-based interventions. Specifically, the therapist guides and helps the patient to remain appropriately emotionally engaged with the trauma memory during the recounting and revising of the traumatic memory and provide encouragement and support. Another important responsibility of the therapist is to assist the patient to evolve the trauma memory recounting in such a way that they can allow for appropriate emotional engagement during the recounting of the event and also to assist the patient to challenge erroneous thoughts about oneself and the world (Foa, Hembree, Rothbaum, & Rauch, 2019; Schnyder et al., 2015).

As a way to increase the availability of early CBT-T, our research group recently developed an internet-delivered intervention based on prolonged exposure, Condensed Internet-Delivered Prolonged Exposure (CIPE). The intervention is provided completely online as a text-based self-help intervention and all communication with the therapist is done asynchronously through an email-like system within the intervention platform. Instead of providing a therapist in the same room as the participant who guides the individual through the exposure-based interventions, our ambition in the development of CIPE was to transfer the skills necessary for exposure to the individual. The intervention rationale and psychoeducation are provided in writing along with case examples on how to engage in imaginal and *in vivo* exposure, as well as common pitfalls (e.g. over-

and under-engagement and/or experiencing dissociative reactions during imaginal exposure). Participants conduct imaginal exposure on their own, either by audio-recording the verbal recounting of the traumatic event or writing the trauma narrative down on paper or computer. Online work sheets with questions are provided following the imaginal exposure to facilitate emotional and cognitive processing and assist participants to reflect on the corrective learning experience resulting from the prolonged imaginal exposure. The work sheets are subsequently assessed by an online therapist who provides the participant with written feedback within 24 hours on weekdays. The main function of this feedback is to coach the patient, provide emotional support and troubleshoot problems that may have arisen during the exposure exercises.

The CIPE intervention was recently tested in a pilot randomized trial ($N = 33$) by our research group (Bragesjö, Arnberg, Särholm, Olofsdotter Lauri, & Andersson, 2021). The results indicated a high degree of adherence: 82% of the participants completed all intervention modules during the three-week intervention. The participants randomized to CIPE had a statistically significant reduction in symptoms of post-traumatic stress (from $M = 52.56$ at baseline to $M = 30.27$ at post-intervention on the PTSD Checklist for DSM-5) as compared to the waiting-list group (from $M = 47.52$ at baseline to $M = 37.93$ at post-intervention).

Although these results suggest that CIPE can be effective as an early intervention, participants might experience significant challenges, or possibilities, when conducting remote therapist lead imaginal and *in vivo* exposure. Qualitative analysis of individuals' experiences from completing the CIPE intervention could shed further light on the therapist role during exposure. This issue might be particularly important during the current covid-19 pandemic, which is accelerating the need for remotely delivered therapy alternatives. The aim of this study was therefore to perform a qualitative in-depth investigation of the participants' experiences of CIPE.

2. Methods

We recruited participants from a pilot trial that investigated if CIPE is feasible, acceptable and preliminary efficacious in reducing early symptoms of post-traumatic stress. In the current study, participants' experiences were examined through individual semi-structured interviews using qualitative data analysis. The study was approved by the Regional Ethical Review Board in Stockholm, Sweden (ID: 2019-02596). A sample size of six to ten participants was deemed appropriate, in line with recommendations for phenomenological qualitative research (Malterud, Siersma, & Guassora, 2016; Sandelowski, 1995). The study is reported in accordance with COREQ standards (Tong, Sainsbury, & Craig, 2007).

2.1. Participants

The participants in the pilot trial were recruited through advertisements in newspapers, social media and at hospital emergency departments throughout Sweden. Applicants conducted a pre-selection screening on an encrypted webpage and was subsequently screened by a clinician who conducted the Mini International Neuropsychiatric Interview (MINI) via telephone. Inclusion criteria were 1) having residency in Sweden, 2) exposure to a traumatic event according to the DSM-5 criterion A for PTSD (i.e. exposed to actual or threatened death, serious injury or sexual violence) within the past 2 months and 3) experiencing at least one intrusion from this event per day during the past week. Exclusion criteria were 1) other serious psychiatric comorbidity as primary concern (e.g. ongoing substance dependence, untreated bipolar disorder, psychotic symptoms, severe depression, borderline personality disorder, high suicidal risk according to the MINI), 2) currently receiving CBT for trauma-related reactions and 3) ongoing trauma-related threat (e.g. living with a violent spouse). We decided to set a time limit for inclusion at 2 months after the event because we wanted the intervention participants to complete the intervention within 3 months, the timeframe during which a large part of natural recovery can be expected in a majority of persons (e.g. Bryant, 2003; Rothbaum, Foa, Riggs, Murdock, & Walsh, 1992). We used criterion A in the DSM-5 as definition of traumatic event as this is the most established definition used in health care. We decided to provide the intervention to individuals who experienced a certain level of intrusive memories, as this has been shown to be a risk indicator of long-term psychiatric problems such as PTSD (Bryant, O'Donnell, Creamer, McFarlane, & Silove, 2011; Creamer, O'Donnell, & Pattison, 2004; Galatzer-Levy, Karstoft, Statnikov, & Shalev, 2014) and was a specific target for one of the quantitative outcomes in the trial. Included participants conducted a baseline assessment of intrusive memories during 1 week and was subsequently randomized to either CIPE ($n = 16$) or waiting list ($n = 17$) for 3 weeks. After 3 weeks of CIPE, the participant completed the post-intervention assessment. See Bragesjö et al. (2021) for more details.

Table 1. Demographics of interviewed participants ($n = 11$).

Gender	Women	8 (72%)
Age	Mean age (<i>SD</i>)	46
	Range	20–74
Education	College/university	5 (45%)
Occupational status	Working	9 (82%)
Psychiatric diagnoses	Current depressive episode	4 (36%)
	Anxiety disorders or OCD	5 (45%)
	PTSD	3 (27%)
	Any	7 (64%)
	Type of trauma	Rape/interpersonal violence
	Non-intentional trauma	6 (55%)

The current study was conceived when the pilot trial had started, and the process of receiving additional ethical approval meant that participants were contacted 6 months after completion of CIPE. At that point, a researcher phoned each participant in the CIPE group to inquire about interest in taking part in a semi-structured interview with the purpose to gain more insight into their experiences of the intervention. We were able to reach eleven participants and all of them agreed to participate in the qualitative study. Ten participants (91%) had completed all modules and one participant (9%) had completed two modules. None of the CIPE participants in the pilot trial dropped out of the intervention. We were unable to reach the remaining participants (five individuals) despite repeated attempts. A separate written consent form for the qualitative interviews was provided. Participants were reimbursed with two cinema tickets after the completion of the interview. Table 1 shows the demographics of the eleven study participants in the current study.

2.2. Intervention (CIPE)

The intervention was a three-week internet-delivered modified prolonged exposure protocol consisting of four modules. All modules were text-based and included psychoeducation, rationale for intervention, instructions on how to conduct imaginal and *in vivo* exposure, information about common pitfalls during exposure illustrated through case examples. In each module, participants were asked to read the text and follow the instructions for the intervention exercises, controlled breathing as well as imaginal and *in vivo* exposure. Participants gained access to each module sequentially after completing the homework exercises in the preceding module. This means that module completion was flexible, such that a participant could complete more than one module per week. Each participant was assigned a psychologist who supported and guided the participants throughout the intervention using an email system within the intervention platform. Participants were told that they could expect to receive a response from their psychologist within 24 hours on weekdays and they were encouraged to have daily contact with their psychologist. The first module included an introduction to the internet-platform and the CIPE intervention. The module also covered psychoeducation about common reactions after experiencing a psychologically traumatic event and how to use controlled breathing as a way to deal with general stress. In module 2, the participants were introduced to imaginal exposure and were instructed to revisit the trauma memory on a daily basis for at least 20 min followed by 15 min of cognitive processing. The participants either wrote down their trauma narrative or did an audio recording of their revisit. In

module 3, the participants were asked to revisit the memory of the trauma in a different way, focusing in on the most distressing parts (i.e. imaginal exposure to hotspots). Exposure *in vivo*, in which participants were asked to gradually approach safe and low-risk situations in their daily life that they had started to avoid since the traumatic event, was also introduced. The participants were asked to conduct *in vivo* exposure by following a predetermined individual hierarchy of avoided situations. Participants were asked to complete digital worksheets each time they engaged in exposure exercises and processing. The worksheets included questions to assist participants to observe changes in the intensity of emotion experienced during the exposure exercise and to assist participants to notice changes in beliefs about self as weak and unable to protect oneself as well as about the dangerousness of the world. Module 4 included worksheets to summarize the intervention, and instructions for the participants to make an individually tailored relapse-prevention plan. Participants was granted access to the intervention material up to 1 year after intervention completion but without any further online contact with the psychologist.

2.3. Reflexivity

The theoretical perspective on knowledge applied in this study is critical realism. In critical realism, the assumption is made that reality exists and operates independently of our awareness of it, but social and subjective factors will contribute to our understanding of it (Braun & Clarke, 2006). Consequently, an attempt to raise awareness of how any preunderstandings might have influenced the interpretation of data was conducted. The research group that conducted the original pilot trial of CIPE consisted of E. A., F.K.A., M.B, K.O.L and J.S; the last three authors were also therapists in the CIPE intervention.

The first author M.B. is a psychologist who has received extensive training in prolonged exposure (PE) by the treatment developer, professor Edna Foa, and has 19 years of clinical experience with the method. Her PhD-project focuses on the use of PE as an early intervention after trauma in different settings. E.A., who was the principal investigator of the current study and main supervisor to M.B, is a clinical psychologist and associate professor at the Karolinska institutet with extensive experience in internet-delivered interventions for various mental health conditions. F.K.A. is a clinical psychologist and associate professor who works as director at National Centre for Disaster Psychiatry in Uppsala, Sweden, and is co-supervisor for M.B. K.O.L is a doctoral student and a clinical psychologist who has worked clinically with PE for 1 year. She has also experience of working in intervention studies aiming to reduce intrusions. J.S. is a doctoral student and

clinical psychologist with 10 years of experience. She is trained in PE and has worked with PTSD in different clinical settings. Her PhD project is about internet-delivered interventions for atrial fibrillation. A.J and J.N joined the research group to assist in conducting this qualitative study and conducted, transcribed, and coded the interviews. They are both clinical psychologists with no previous experience with internet-based interventions and they were not involved at all in the development of CIPE. A.J. has worked clinically with PE for 10 years and J.N. has done the same for 3 years. C.vB is an associate professor at Stockholm University and is regarded as an expert in applying qualitative analysis in clinical studies. She has been working clinically mainly with psychodynamic therapy for 14 years and supervised A.J and J.N on the qualitative analyses in this study. The research group consisted of five women (M. B, K.O.L, J.S, A.J and C.vB) and three men (E.A., F.K. A. and J.N).

2.4. Data collection and analyses

The interviews were conducted by telephone by A. J. and J.N during January and February, 2020, and were recorded and transcribed verbatim. Participants were informed of the main aim of the study. The participants were also told that their answers would be helpful in further development of CIPE. The interviews ranged from 30 to 60 minutes.

As this was the first study of participants' experiences from CIPE, we chose an inductive approach where their experiences were used as a framework to guide the data analysis. The interviews were conducted using a semi-structured interview guide that included six broader topics:

- General positive and negative experiences or adverse events of the intervention
- The intervention process (the content and structure of the intervention)
- The level of care and contact with the online psychologist
- The experience of being provided with psychological intervention soon after a traumatic event
- The experience of conducting intervention exercises in everyday life
- Unmet expectations and suggestions for improvement

Each topic was investigated using a broad, open question. Open-ended follow-up questions were then used to allow the participants to express their experiences of CIPE in their own way (e.g. 'could you elaborate on this further?' or 'how do you mean?'). The interview guide was tested on one participant before it was finalized. Since no revisions in the interview guide were deemed necessary, we decided to include this interview in the analysis.

The data collection and thematic analysis followed the recommendations by Braun and Clarke (2006). Each transcript was first read separately by the two coders to begin the process of structuring the data according to the conceptual framework of the study (i.e. finding experiential categories). In a second step, the transcripts were divided equally between the coders. Each interview was analysed separately to determine themes within each response from the participants. Repeated themes and comments were coded and grouped together. The coders subsequently jointly compared individually identified themes, resolved redundancies and modified the themes further. Each identified theme was labelled with descriptive titles and exemplified with original quotes from the transcript. The naming of each theme was agreed upon by the two coders. As no new themes emerged after eleven interviews, the dataset was considered saturated and thus completed. The final coding scheme was reviewed and data were cross-checked by the first author. The final model was agreed upon by all authors. The anonymity of the participants is protected in the presentation of the quotes where each participant has been given a fictitious name and are presented in age ranges of 10 years. Trauma categories were condensed to further preserve anonymity. We have clarified some quotes by using comments in brackets.

3. Results

The results from the thematic analysis revealed one overarching theme, 'demanding and effective', which summarized the data and tied together the primary themes. Participants had a general experience of CIPE as a demanding, at times emotionally painful, intervention that facilitated recovery after trauma. The core intervention component, imaginal exposure, was perceived to be both the most distressing and the most effective part of CIPE to reduce trauma-related reactions. One participant described no beneficial effects of the intervention. The overarching theme comprised four primary themes and can be seen in Figure 1.

3.1. Demanding and effective

One of the core components of CIPE, imaginal exposure, was perceived as a very emotionally demanding task, and at the same time as the most effective element in the CIPE package. The participants reported a general experience of liberating oneself from the traumatic memory and gaining a new perspective on their trauma narrative and the things they had endured.

Yeah, that was the hard part, it was horrible but also, in a sense, the core in processing [the traumatic event]. (Ingrid, in her twenties, non-intentional trauma)

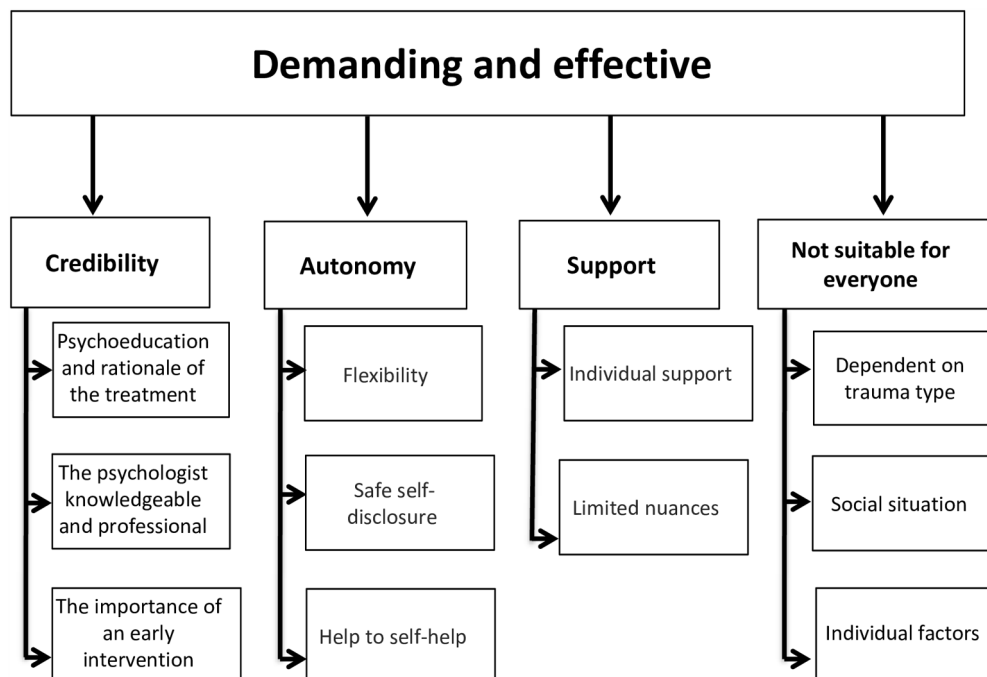


Figure 1. A hierarchical model of participants' experiences with CIPE.

You separate yourself from the memory and leave it there, it doesn't hurt as much anymore. (Amina, in her fifties, interpersonal violence)

3.2. Credibility

The primary theme of credibility describes the importance of the intervention rationale as a way to facilitate courage for the participant to gradually confront trauma-related cues. Participants reported that the theoretical framework in CIPE made sense and was logical. The psychologists providing the intervention were generally perceived as competent and professional. The provision of the intervention immediately after exposure to trauma was perceived as important but also difficult in some ways. Subthemes named *psychoeducation and rationale of the intervention*, *the psychologist was knowledgeable and professional* and *the importance of an early intervention* were found and are reported in detail below.

3.2.1. Psychoeducation and rationale of the intervention

The psychoeducation and rationale of the CIPE intervention was experienced as particularly important in building self-confidence. Most participants found the psychoeducation in module 1 validating, and they said they came to understand themselves and their psychological reactions in a better way after reading the text material. Some participants described exposure as very emotionally painful but that the rationale and understanding of why exposure is important made it easier for them to carry out the exercises:

I understood that there were some kind of, how should I put it, philosophy or idea behind, maybe on the basis of previous knowledge or experiences, that you need to process the traumatic event and you do it most effectively by going back to them [the memory of the events] (Johanna, in her forties, non-intentional trauma)

The participants regarded approach behaviours to painful thoughts and feelings as the key ingredient to psychological recovery:

Well, it was very painful in the beginning, it was like, oh, it kind of turned inside, oh and then in the end I felt, yes, I felt such empathy [...] so I mean, I just felt like a warmth and love in the end. (Barbro, in her sixties, interpersonal violence)

I just leave them [the memories] behind like that, I just kiss the wounds and move on. (Amina, in her fifties, interpersonal violence)

Imaginal exposure was highlighted as the most crucial intervention component.

but since I invited the memory, deliberately ... with my free will, so, so, eventually it didn't haunt me anymore ... it really stopped (Elisabeth, in her fifties, interpersonal violence)

The participants expressed a more mixed view about the controlled breathing exercises. Less than half of the participants experienced these exercises as important and the remaining participants did not regard them as helpful or credible. Some participants even thought that the controlled breathing exercises were redundant.

I didn't really need a breathing exercise, but it was okay to learn that kind of thing. (Ali, in his thirties, accident)

the breathing exercises were not helpful, I hardly remember them, they gave me nothing (Elisabeth, in her fifties, interpersonal violence)

3.2.2. *The psychologist was knowledgeable and professional*

Most participants perceived the psychologists as very competent and able to clarify the rationale and tailor the intervention to the specific needs of the individual. The psychologist was perceived as having played a major part in helping the participants move forward and engage fully in the intervention.

...that she [the psychologist] gave me feedback in her, kind of knowledgeable way, I find that valuable. That someone that knows this can convey it and give you good advice. (Linnea, in her forties, non-intentional trauma)

3.2.3. *The importance of an early intervention*

All participants highlighted the importance of providing early intervention after trauma as it shortens the time of unnecessary suffering. At the same time, they also highlighted that early provided CIPE could also be emotionally distressing, which in turn could potentially interfere with the ability to fully engage in the intervention.

Yes, I think its better to get help early, so you dont have time to pile up things. (Emma, in her forties, interpersonal violence)

I think it may have been a little too close afterwards, I was, after all, we can call it, paralyzed by this. And subconsciously, you get it, this is really good for me, without it, it would have been hell. (Adam, in his fifties, interpersonal violence)

3.3. *Autonomy*

The primary theme of autonomy reflects the participants' perception of an intervention delivery format, characterized by flexibility and freedom to engage in intervention at the most convenient time and place, but also higher demands of taking responsibility for the intervention. Participants described advantages of the flexible intervention structure and perceived the internet format as a safe way to process the traumatic event. At the same time, some participants perceived the intervention material as quite extensive. Three subthemes emerged, *flexibility*, *safe self-disclosure* and *help to self-help*.

3.3.1. *Flexibility*

Several participants perceived the intervention structure as containing a lot of hard work and personal responsibility. These participants also highlighted the

importance of self-discipline when doing the CIPE intervention. One participant suggested that the addition of online videos to illustrate the intervention rationales would have been helpful for them to better absorb the material. Several participants pointed out that it was at times easy to postpone the home-work exercises as they did not have any scheduled face-to-face appointment with the clinical psychologist. The email reminders that were sent out by the psychologist in the online platform, however, was regarded as helpful to move forward.

So she [the psychologist] had to remind me several times, but at the same time it's good that you don't put off things (Cecilia, in her fifties, interpersonal violence)

On the other hand, most participants highlighted the highly flexible intervention format as something that made them overcome many practical barriers. To be able to choose the time and place to engage in intervention was perceived as a substantial advantage. One participant stated that the internet format '*gave enough time to reflect*', and described a concern that a face-to-face appointment once a week with trauma exposure concentrated to one specific place and time would have been too emotionally demanding due to the insistence to do it right at that moment. The possibility to have continuous access to the intervention material for 1 year after intervention completion was perceived as helpful and as an aid to continue to process the traumatic event.

Most participants described taking a flexible approach to the *in vivo* exposure exercises. Some participants described working with *in vivo* exposure in a less structured way than described in the CIPE rationale. For example, many participants took the opportunity to break avoidance behaviour whenever it came up in daily life rather than having planned exposures based on a predefined hierarchy. One participant described a flexible attitude towards choosing whether or not to follow the psychologist's advice on which situations to confront. The rationale behind and principle of *in vivo* exposure was still something that was perceived as very helpful.

[The *in vivo* exposure] was a little bit more diffuse. It was more things in my everyday life that I didn't avoid, eh, it was hard to schedule. So, it was more like, here comes a situation, okay, let's handle it from this perspective instead. (Ingrid, in her twenties, non-intentional trauma)

3.3.2. *Help to self-help*

Participants perception of the intervention format – involving personal responsibility and autonomy to engage in the intervention and the possibility to continue to use these skills also in the future – can be summarized as help to self-help.

Oh, well, I haven't had the need, but I know that the skills are there for me to use for myself (Barbro, in her sixties, interpersonal violence)

3.3.3. Safe self-disclosure

Not seeing the psychologist face-to-face during the imaginal exposure was described by the participants as both an advantage and also something that could be hard to do alone. Many participants described that they experienced less shame revisiting the trauma alone than they imagined that they would feel if they would do the revisiting together with a psychologist. The presence of a psychologist that could be contacted when needed was still important to them and was perceived to strengthen their motivation.

I also think it was very good for me to know that I wrote the trauma narrative just for myself and that [the psychologist] did not make any judgment in the things I wrote or that I didn't have to send it in to someone else but it could stay here with me, it was very good. (Anna, in her thirties, non-intentional trauma)

In a similar way, some participants appreciated not having to worry about connecting with their psychologist and instead being able to focus primarily on memory processing.

oh, you don't have to worry about meeting a person that you might not harmonize with (Barbro, in her sixties, interpersonal violence)

3.4. Support

The participants experienced the online contact with a psychologist as both an advantage and limitation. In one way, the lack of in person contact was perceived to have limitations but at the same time, the psychologists' accessibility and response time were perceived as very positive and contributed to a sense of security and support. Several participants suggested that the addition of phone calls could be a solution to overcome the perceived limitations. Two subthemes emerged, *limited nuances* and *individual support*.

3.4.1. Limited nuances

Several participants described that the intervention lacked some important social aspects normally received in traditional face-to-face therapy (e.g. seeing the other person's body language and hearing their voice, discussing back and forth together with their therapist). However, this was not perceived as a major obstacle to benefit from intervention.

Some participants experienced that the intervention was not tailored specifically to their individual needs. One participant perceived that the psychologist did not consider other traumatic life events as very relevant but instead focused on emotional

processing of the recent index trauma. One participant, with previous experience of face-to-face therapy, thought that the online format made it more difficult for the psychologist to know her as a person.

Several participants, regardless of how they reasoned about the issue of personal contact, suggested that CIPE should be coupled with telephone calls. This was viewed as especially important when engaging in the imaginal exposure exercises.

A telephone call would have been sufficient to make the contact a little more personal and nuanced. (Adam, in his fifties, interpersonal violence)

...have the opportunity to submit the text [the trauma narrative] and to talk about it with the psychologist from her experience, like this is how it is, you reacted like this or think like this. So, you can get out of the ideas you might have. (Anna, in her thirties, non-intentional trauma)

3.4.2. Individual support

The participants did not only experience limitations in the interaction with the psychologist during the CIPE intervention. The close contact, sometimes daily, with the psychologists were perceived as positive. In addition, many participants perceived the tailored responses as very personal and empathetic.

Without the [online] psychologist, oh, then I actually think I probably wouldn't have done anything at all (Elin, in her sixties, rape)

3.5. Not suitable for everyone?

A primary theme *Not suitable for everyone?* was also found. The participants described CIPE as highly credible and helpful and at the same time demanding and requiring a high level of self-discipline. This made some participants question whether CIPE is suitable for all trauma victims. Three subthemes, *dependent on trauma type*, *social situation* and *individual factors* were organized within this primary theme.

3.5.1. Dependent on type of trauma

Some participants speculated that CIPE might not be efficacious for all trauma survivors: some individuals exposed to more severe traumatic events would perhaps need a more attentive, physically present psychologist who can better capture their reactions and ensure that they do not feel alone when conducting imaginal exposure.

So, I don't think the treatment can be used for really traumatic things ... I definitely don't think like rape or direct assault when you are alone in a forest no, I think the memories would have been too difficult actually. (Elisabeth, in her fifties, interpersonal violence)

3.5.2. *Dependent on the social situation*

Some participants perceived a supportive network to be crucial when going through an intervention like CIPE. One participant described herself as a 'lone wolf' and expressed that she would have benefitted from having a support person in her natural environment during the exposure part of intervention.

3.5.3. *Dependent of the individual*

Some participants also perceived individual factors as important. One participant expressed it in this way:

...not everyone would stand the heat to do this on your own (Amina, in her fifties, interpersonal violence)

4. Discussion

This study aimed to describe participants' experiences of CIPE, a novel internet-delivered intervention provided soon after trauma. The thematic analysis of participant interviews 6 months after completion of intervention resulted in a hierarchical model with one overarching theme together with four primary themes. The overarching theme, 'demanding and effective', can be understood as a dialectical view of the CIPE intervention highlighting both positive and negative experiences of CIPE. Generally, participants found the intervention to include reasonable short-term demands that helped them to effectively heal from trauma. The high level of credibility in the CIPE rationale combined with professionalism and timely online support from the psychologist seem to be central to the participants in order for them to engage in imaginal exposure on their own. Despite the emotional impact of the traumatic event, participants stressed the importance of getting help early after a traumatic event. The flexible delivery format seems to have played a significant role in the positive outcome of CIPE. Importantly, the participants were clear about the need to set significant time aside to do the CIPE intervention properly, and they also realized that they had to be in close emotional contact with the aversive traumatic memory. The findings are similar to those reported in a qualitative study on prolonged exposure provided face to face as treatment for veterans with PTSD. The interviewed veterans reported that the initial distress was well tolerated and that the rapid gains from exposure helped them engage in treatment (Hundt, Barrera, Arney, & Stanley, 2017).

Traditionally, imaginal exposure is supported by a face-to-face therapist who guide the patient throughout the trauma narrative (Foa et al., 2019). The current findings suggest that the participants tolerated this emotionally demanding exercise very well while relying on remote therapist support. Many participants highlighted imaginal exposure as the most helpful

intervention in the CIPE package and, the internet-based format was perceived as a safe forum for self-disclosure. That is, many participants experienced the delivery format as especially helpful to overcome avoidance due to shame when describing their trauma narrative. Our ambition when developing the CIPE intervention was to transfer the necessary therapist skills for imaginal exposure directly to the participant, mainly through case examples. Although some participants would have wanted additional contact with the psychologist on the phone in addition to the online support, there were no indications in the current study that the participants would have preferred to meet with a face-to-face psychologist instead.

In line with previous findings on internet-delivered interventions (Holst et al., 2017; Wilhelmsen et al., 2013), the participants in the current study experienced the high degree of autonomy as a positive and important experiential dimension of the CIPE intervention. However, the participants also described some downsides with this format. Some participants experienced it difficult to prioritize the CIPE intervention in daily life and thought it put a lot of demands on them as well as required a lot of self-discipline. The sample in this study was self-selected and probably highly motivated, as almost all participants completed all modules. Future studies could investigate whether these experiences are salient also among individuals who drop out from the intervention.

Although autonomy was regarded as an important factor in the CIPE intervention, yet several participants also highlighted the psychologist support as a significant motivational factor. Previous research on other internet-delivered interventions has found therapist support to be an important factor as well (Holst et al., 2017; Knowles et al., 2014; Rozental et al., 2020) and meta-analytic work have shown that guided internet-delivered interventions in general report better effect sizes than self-guided ones (Baumeister, Reichler, Munzinger, & Lin, 2014). Although the participants felt limited to some degree by the online format and lack of personal face-to-face relationship, they also perceived the CIPE intervention as a positive way to approach their trauma narrative. Some participants suggested that adding additional telephone calls would potentially benefit the CIPE intervention. Adding telephone calls to regular email contact is effective in some studies (Greaney et al., 2012; Pihlaja et al., 2020; Titov et al., 2011) but other studies have not found any incremental effects (Andersson, Lundström, & Ström, 2003; Farrer, Christensen, Griffiths, & Mackinnon, 2011; Lindner et al., 2014). Interestingly, participants in internet-delivered interventions have noted that increased therapist support could also have negative effects for individuals who experience a high-dose therapist contact as aversive and that it could have a negative impact on participants' autonomy (Rozental, Forsström, Tangen, & Carlbring, 2015).

One interesting finding in the current study was that participants reported doing *in vivo* exposure more flexibly and autonomously than was actually instructed by the CIPE rationale. Participants were instructed to carefully plan how to gradually and systematically approach avoided trauma-related situations. Still, many participants chose to confront trauma-related situations whenever these came up in everyday life, rather than conduct the exercises by following a predetermined hierarchy. The principle of breaking avoidance as a necessity for intervention success, as stated in the rationale, was described as credible and participants described the *in vivo* exposure component as very effective. The internet format relied on digital worksheets data to capture the participants' daily home-work and no objective data was used. To investigate this important issue further, more data, both subjective and objective, are needed together with an experimental design that allows comparison of unstructured exposure with traditional exposure based on emotional processing theory.

The same participants that found the intervention helpful suggested that CIPE may not be suitable for victims of particularly severe trauma such as rape. The raised concerns are similar to unfounded concerns about exposure-based therapies for PTSD raised by providers of trauma-focused treatments (Deacon & Farrell, 2013). The concerns stand in contrast to the quantitative data from this CIPE trial that suggest that participants with rape as their index trauma did not show poorer compliance or less improvement than participants with other index events (Bragesjö et al., 2021).

One strength in the current study was the use of both an inductive as well as a deductive approach which allowed the emergence of conclusions not formulated in advance (Braun & Clarke, 2006). The current study reports both the process of collecting the data and each step in analysing the interviews accompanied by excerpts which increase credibility and transparency (Elo & Kyngäs, 2008). This study also acknowledges a number of limitations; First, as most qualitative research studies, the data assessment and processing may be sensitive to interviewer bias. We tried to minimize this bias by having two independent psychologists outside the research group that developed and tested CIPE in the trial do the interviews and code the data. Secondly, we had an independent supervisor in the coding process. Despite these efforts to minimize bias in the data processing, it is still possible that preconceptions about PE, I-CBT, CBT, CIPE or psychotherapy in general could have influenced the results as both interviewers had worked clinically with PE. The results should therefore be regarded as preliminary. Third, the participants in the current study were self-referred and may therefore not be a fully representative sample of the larger population of

trauma victims. Fourth, despite several attempts to reach all participants in the CIPE group, we only reached 11 out of 16. The dataset was nevertheless considered to be saturated and thus data collection was deemed complete after eleven interviews. Fifth, the interviews were conducted 6 months after the participants completed the intervention, and so the experiences may have introduced errors in the accuracy or completeness of the participants' recollections.

5. Conclusion

Participants reported complimentary views of engaging in CIPE. The intervention was considered demanding, yet effective in reducing symptoms of post-traumatic stress. Results indicate that the most distressing parts of intervention was in addition perceived to be the most important. The exposure-based components were tolerable and feasible to provide in an online format. The credibility of the intervention and autonomy of the format helped participants move forward and engage in the intervention. In addition, results suggest that the participants were more in charge of the process in the *in vivo* component and applied the exercises in an idiosyncratic fashion.

Disclosure statement

No potential conflict of interest was reported by the authors.

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Authors' contributions

M.B, E.A and F.K.A contributed to the study design. A.J. and J.N. conducted the data collection and coding under supervision from C.vB. M.B. reviewed the final coding scheme and cross checked it against the data under supervision by E.A and F.K.A. M.B, E.A. and F.K.A did the first draft of the article. All authors then contributed to writing the article. All authors have read and approved the final manuscript.

Availability of data and material

The study protocol and data procedures used in the current study are not publicly available due to the European data legislation (GDPR) and strong confidentiality regulations in Sweden. Disclosure of the data needs to be approved by the Regional Ethical Review Board in Stockholm, Sweden.

Consent for publication

Not applicable.

Ethics approval and consent to participate

The study was approved by the Regional Ethical Review Board in Stockholm, Sweden (ID: 2019-02596). Eligible patients received both written and verbal information about the study, and was not included in the study until after signing informed consent.

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