Brief Report

Severe dissociative experiences beyond detachment in a large clinical sample of inpatients with PTSD: Diagnostic and treatment implications

Leonhard Kratzer[a], Stefan Tschöke[b,c], Johanna Schröder[d], Mark Shevlin[e], Philip Hyland[f], Christine Eckenberger[a], Peter Heinz[a], Thanos Karatzias[g,h]

[a] Department of Psychotraumatology, Clinic St. Irmingard, Prien am Chiemsee, Germany

[b] Clinic for Psychiatry and Psychotherapy I (Weissenau), Ulm University, Ulm, Germany

[c] Centre for Psychiatry Südwürttemberg, Ravensburg, Germany

[d] Institute for Clinical Psychology and Psychotherapy, Department for Psychology, Medical School Hamburg, Hamburg, Germany

[e] Ulster University, School of Psychology, Derry, Northern Ireland

[f] Department of Psychology, Maynooth University, Kildare, Ireland

[g] School of Health & Social Care, Edinburgh Napier University, Edinburgh, UK

[h] Rivers Centre for Traumatic Stress, NHS Lothian, Edinburgh, UK

Short Title: Dissociative experiences in PTSD beyond detachment

Corresponding Author:

Dr Leonhard Kratzer

Department of Psychotraumatology

Clinic St Irmingard

Osternacher Strasse 103

Prien am Chiemsee, Bavaria, 83209, Germany

Tel: 0049-8051-607 732

E-mail: l.kratzer@st-irmingard.de

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Abstract

Introduction: The fifth edition of the *Diagnostic and Statistical Manual of Mental Disorders* (*DSM-5*; American Psychiatric Association, 2013) contains a dissociative subtype of post-traumatic stress disorder (PTSD) characterized by depersonalization and derealization. Yet, there is evidence that dissociative symptoms in PTSD go beyond this kind of detachment dissociation and that some patients present with additional compartmentalization dissociation in the form of auditory-verbal hallucination, amnesia, and identity alteration. Methods: Hence, in this study, we examined latent profiles of childhood trauma (Childhood Trauma Questionnaire), PTSD (Impact-of-Event Scale-Revised), and pathological dissociation (Dissociative Experiences Scale-Taxon; DES-T) in a large sample of severely traumatized inpatients with PTSD (N = 1360). Results: Results support a three-class solution of the latent profile analysis with a PTSD class, a dissociative subtype class, and a third class characterized by more complex and more severe dissociative symptoms. Importantly, in our inpatient sample of patients with severe PTSD, the latter class was found to be the most prevalent. Both the exploratory character of our retrospective analysis of clinical routine data and the use of the DES-T limit the generalizability of our findings, which require methodologically more rigorous replication. Conclusion: In severe PTSD, dissociative symptoms beyond detachment are highly prevalent. Diagnostic and treatment implications are discussed.

Introduction

There is fierce scientific debate about the role of pathological dissociation in post-traumatic stress disorder (PTSD). DSM-5 defines dissociation as a disruption, interruption, and/or discontinuity of the normal, subjective integration of behavior, memory, identity, consciousness, emotion, perception, body representation, and motor control [1]. Yet, the heterogeneity of dissociative symptoms and their highly subjective nature entail the necessity of a subjective-phenomenological approach to dissociation [2]. A common categorization divides the plurality of dissociative phenomena into detachment and compartmentalization dissociation [3]. Detachment dissociation includes experiences of separation between the self and the environment, and a disturbance of self-perception, i.e., emotional constriction or numbing, derealization and depersonalization. In contrast, compartmentalization is defined as a disruption in the cooperation of mental systems that normally work together, i.e. amnesia, functional neurological symptoms, and identity alteration [3–5]. While detachment dissociation seems to be a common phenomenon across many psychological disorders [6], compartmentalization dissociation seems to be indicative of severe dissociative disorders [5,7].

Dissociative symptoms like amnesia and flashbacks are distinctive, sometimes also considered pathognomonic features of PTSD, can be observed in a vast majority of patients with PTSD and complex PTSD (CPTSD), and are consequently also part of the criteria of PTSD and CPTSD [1,8–12]. According to some authors, this gives reason to either define *non-dissociative PTSD as a minority subtype* of PTSD or to even conceive PTSD as a dissociative disorder [13,14]. Numerous studies have discussed dissociation as a pathomechanism in PTSD [15–17]. Other authors, though, deny that PTSD is dissociative in nature and have focused on the detachment aspects of dissociation in conceptualizing a dissociative subtype of PTSD as opposed to the common hyperarousal type of PTSD [18,19]. Empirical evidence from latent class analyses (LCA) and latent profile analyses (LPA) corroborated the existence of such a dissociative subtype of PTSD marked by additional symptoms of derealization and depersonalization [20–22]. Consequently, this dissociative subtype of PTSD has been included in the DSM-5 [1] and can be found in approximately 40% of individuals with PTSD [23–26]. Recent evidence using an LCA analysis showed that there is also a sizeable amount of individuals with dissociative symptoms in ICD-11 complex PTSD [27].

Yet, many questions regarding the nature of dissociative symptoms in PTSD remain unanswered [28,29]. For example, this holds true for AVH which are sometimes considered to be psychotic and sometimes considered to be dissociative in nature [30–32]. While hearing voices has traditionally been considered indicative of a schizophrenia spectrum disorder, recent evidence suggests hearing voices is a transdiagnostic dissociative symptom with links to adverse childhood

experiences and a phenomenology that cannot be distinguished among different psychiatric disorders [33–41]. Furthermore, conceptual confusion resulting from numerous competing models of pathological dissociation is leading to misunderstandings and is hindering scientific progress in the field of dissociation [42]. In particular, there is a risk that in the assessment of PTSD, a too narrow definition of pathological dissociation might lead to a neglect of more severe, compartmentalizing forms of dissociation. Yet, in naturalistic samples of patients with severe PTSD, dissociative symptoms that go beyond detachment like auditory-verbal hallucinations (AVH), identity alteration, or amnesia are regularly observed [43–45].

Therefore, in the present study, using clinical routine data, we aimed to investigate whether in a large sample of inpatients with PTSD (*N* = 1360), there is evidence of both a dissociative subtype of PTSD and a second subtype characterized by additional symptoms of compartmentalization dissociation like amnesia or AVH.

Materials and Methods

Participants

The clinical sample consisted of 1360 patients with a clinical diagnosis of ICD-10 PTSD who were consecutively admitted for inpatient trauma-focused treatment in a German clinic of psychotraumatology over the time period of 2013 to 2023. The mean age of the sample was 47.9 years (*SD* = 11.0). To enhance ecological validity, there were no exclusion criteria. Written informed consent to the scientific use of the clinical routine data was obtained from all participants included in the analysis.

Measures

The Childhood Trauma Questionnaire (CTQ) [46,47] is a retrospective assessment of potentially traumatic childhood experiences. The CTQ consists of 28 items, of which 25 correspond to the five subscales of sexual abuse, physical abuse, emotional abuse, emotional neglect, and physical neglect. Patients may indicate the severity of their adverse childhood experiences using items like “I got hit so hard by someone in my family that I had to see a doctor or go to the hospital” with a 5-point Likert scale. Internal consistency was α = .94 [.93, .94] in the present sample.

The Impact-of-Event Scale-Revised (IES-R) [48,49] is used to assess PTSD symptom severity and consists of 22 items like “I had dreams about it” that are answered on a 4-point Likert scale and correspond to three subscales (intrusion, avoidance, hyperarousal). Internal consistency was α = .85 [.84, .87] in the present sample.

The Dissociative Experiences Scale - Taxon (DES-T) [50,51] was used to assess pathological dissociation. It consists of eight items like ‘‘Some people have the experience of finding themselves in a place and have no idea how they got there. Select the number to show what percentage of the time this happens to you.’’ that are rated on visual analogue scales. The DES-T is a screening tool that does not represent all aspects of compartmentalization which is an important limitation of our study. Internal consistency was α = .86 [.85, .87] in the present sample.

Statistical Analysis

Using a Gaussian Finite Mixture Modeling approach [52] with the R package *mclust* [53], we tested for latent profiles generating patterns of responses regarding the five subscales of the childhood trauma questionnaire, eight dissociative symptoms ranging from derealization and depersonalization to amnesia, and AVH assessed with the DES-T, as well as the three scales intrusion, avoidance, and hyperarousal of the Impact-of-Event Scale-Revised. LPA models with varying covariance matrices and up to nine latent profiles were estimated using expectation maximization (EM) and compared regarding their fit as indicated by the Bayesian Information Criterion (BIC) [54,55], with *higher* values being indicative of better fit due to the specifications of *mclust*.

Results

The sample was characterized by severe levels of childhood trauma, pathological dissociation, and PTSD symptoms. Mean scores were 12.7 (*SD* = 7.1) for childhood sexual abuse, 11.7 (*SD* = 6.1) for childhood physical abuse, 12.0 (*SD* = 4.7) for childhood physical neglect, 17.3 (*SD* = 6.1) for childhood emotional abuse, and 18.6 (*SD* = 5.5) for childhood emotional neglect in the CTQ. In the IES-R, patients reported a mean score of 26.3 (*SD* = 7.9) for intrusion, 25.1 (*SD* = 8.2) for avoidance, and 27.3 (*SD* = 7.0) for hyperarousal. The mean DES-T score of the sample was 19.8 (*SD* = 19.1, median = 14.3).

An ellipsoidal LPA model with variable volume, variable shape, equal orientation (VVE), and four components showed the best fit (see figure 1). The model with the second-best fit (ΔBIC = 943.6), an ellipsoidal, varying volume, variable shape, and variable orientation model (VVV) was also indicative of four latent classes. The third best model (ΔBIC = 1749.3), though, an ellipsoidal model with variable shape, variable volume, and equal orientation (VVE), allocated patients to only three latent classes. Visual inspection of the models showed that the four-class-solution had two profiles very close to each other, with only minor quantitative differences across all profile variables, thereby adding little to no useful information. Hence, to ensure maximum parsimony [56,57], we opted to use VVE which allows

for a parsimonious characterization of profiles [53,58] and the three-class-solution, not retaining a fourth profile for further analyses. The three latent profiles are depicted in figure 2.

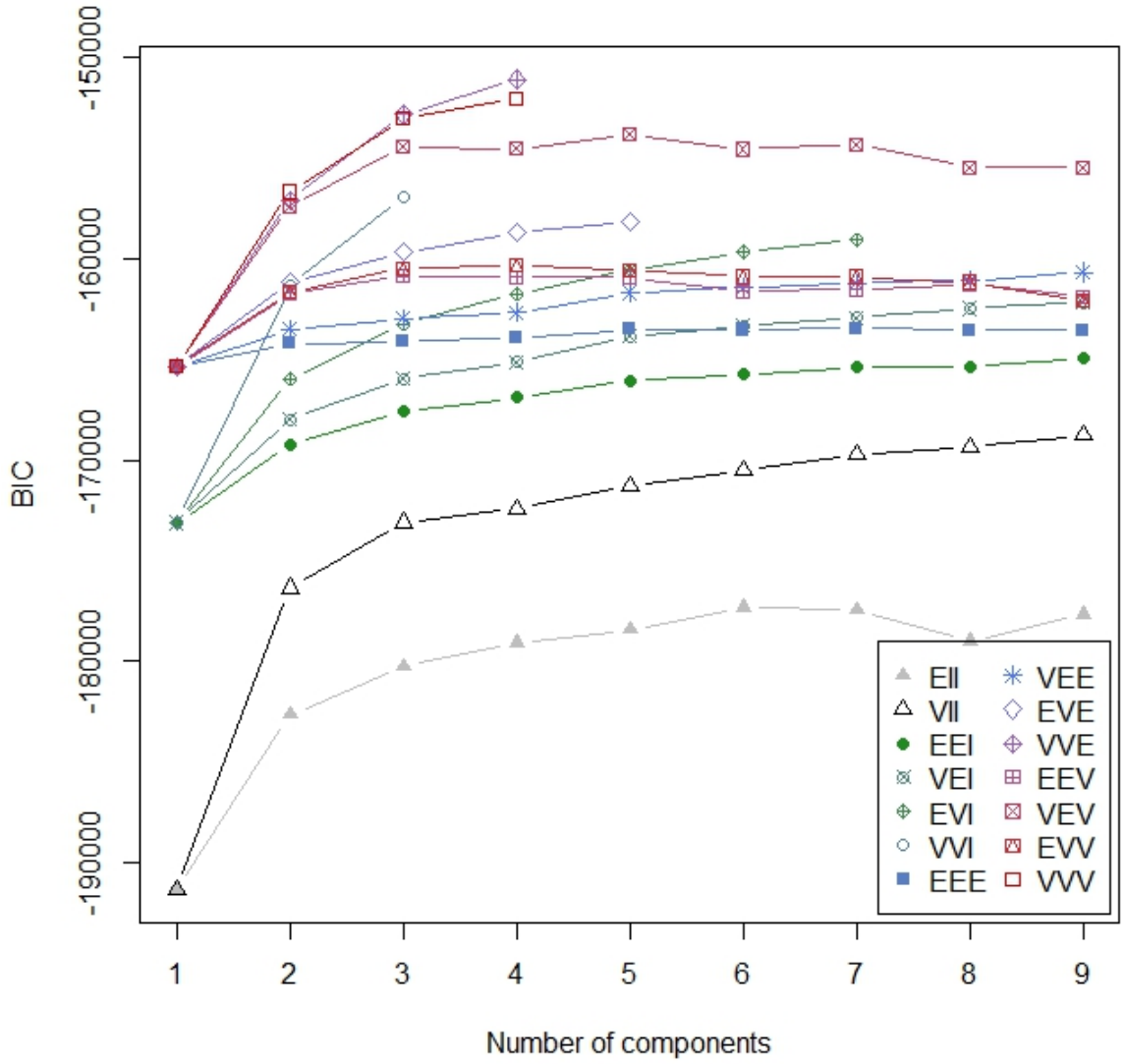

Fig. 1. Gaussian finite mixture models estimated by the Expectation Maximization algorithm with varying covariance parameterisations and components, i.e. latent classes, and their respective Bayesian Information Criterion (BIC) values. EII = spherical distribution, equal volume, equal shape; VII = spherical distribution, variable volume, equal shape; EEI =diagonal distribution, equal volume, equal shape, coordinate axes orientation; VEI = diagonal distribution; variable volume, equal shape, coordinate axes orientation; EVI = diagonal distribution, equal volume, variable shape, coordinate axes orientation; VVI = diagonal distribution, variable volume, variable shape, coordinate axes orientation; EEE = ellipsoidal distribution, equal volume, equal shape, equal orientation; EVE = ellipsoidal orientation, equal volume, variable shape, equal orientation; VEE = ellipsoidal orientation, variable

volume, equal shape, equal orientation; VVE = ellipsoidal orientation, variable volume, variable shape, equal orientation; EEV = ellipsoidal orientation, equal volume, equal shape, variable orientation; VEV = ellipsoidal orientation, variable volume, equal shape, variable orientation; EVV = ellipsoidal orientation, equal volume, variable shape, variable orientation; VVV = ellipsoidal orientation, variable volume, variable shape, variable orientation [53].

The first profile P1 (N =178: 13.1%) was characterized by relatively less severe childhood trauma, relatively less severe PTSD symptoms, and no dissociative symptoms and referred to as "PTSD". Mean scores were 9.9 (*SD* = 5.8) for childhood sexual abuse, 10.8 (*SD* = 6.3) for childhood physical abuse, 10.5 (*SD* = 4.4) for childhood physical neglect, 15.1 (*SD* = 6.7) for childhood emotional abuse, and 16.9 (*SD* = 6.2) for childhood emotional neglect in the CTQ. In the IES-R, patients reported a mean score of 24.4 (*SD* = 9.2) for intrusion, 22.2 (*SD* = 8.2) for avoidance, and 25.5 (*SD* = 8.3) for hyperarousal. The mean DES-T score of the P1 profile was .3 (*SD* = .5, median = .1).

The second profile P2 (N = 445: 32.7%) was characterized by more severe childhood trauma compared to P1, more avoidance symptoms compared to P1, and elevated levels of derealization (DE5), depersonalization (DE3 and DE6), and identity confusion (DE7), relative to P1, and was referred to as "PTSD Dissociative Subtype". Mean scores were 12.2 (*SD* = 7.0) for childhood sexual abuse, 11.0 (*SD* = 5.8) for childhood physical abuse, 11.4 (*SD* = 4.7) for childhood physical neglect, 16.2 (*SD* = 6.1) for childhood emotional abuse, and 18.1 (*SD* = 5.5) for childhood emotional neglect in the CTQ. In the IES-R, patients reported a mean score of 24.7 (*SD* = 8.4) for intrusion, 24.0 (*SD* = 8.6) for avoidance, and 25.7 (*SD* = 7.5) for hyperarousal. The mean DES-T score of the P2 profile was 19.8 (*SD* = 19.0, median = 14.3).

The third profile P3 (N = 737; 54.2%), however, showed high levels, relative to P1 and P2, of childhood trauma, PTSD symptoms, and additional dissociative symptoms of amnesia (DE1, DE2, DE4) and AVH (DE8). We described this profile as "PTSD with complex dissociative symptomatology". Mean scores of P3 were 13.6 (*SD* = 7.3) for childhood sexual abuse, 12.3 (*SD* = 6.1) for childhood physical abuse, 12.7 (*SD* = 4.7) for childhood physical neglect, 18.5 (*SD* = 5.7) for childhood emotional abuse, and 19.3 (*SD* = 5.1) for childhood emotional neglect in the CTQ. In the IES-R, patients reported a mean score of 27.7 (*SD* = 7.0) for intrusion, 26.5 (*SD* = 7.7) for avoidance, and 28.6 (*SD* = 6.0) for hyperarousal. The mean DES-T score of the P3 profile was 30.3 (*SD* = 19.0, median = 28.0).

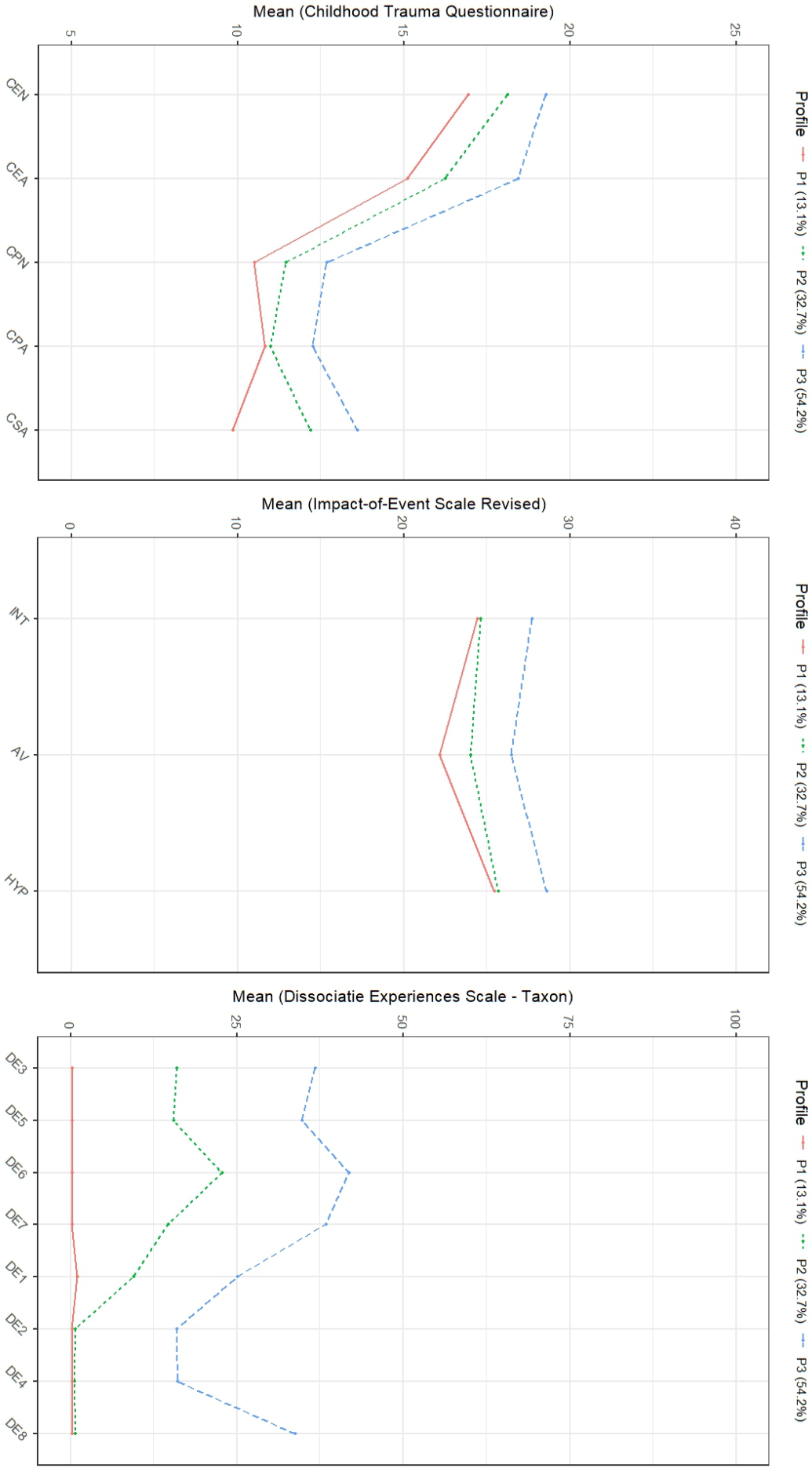
Mean (Childhood Trauma Questionnaire)
5
10
15
20
25
CEN
CEA
CPN
CPA
CSA
Profile
P1 (13.1%)
P2 (32.7%)
P3 (54.2%)
Mean (Impact-of-Event Scale Revised)
0
10
20
30
40
INT
AV
HYP
Profile
P1 (13.1%)
P2 (32.7%)
P3 (54.2%)
Mean (Dissociatie Experiences Scale - Taxon)
0
25
50
75
100
DE3
DE5
DE6
DE7
DE1
DE2
DE4
DE8
Profile
P1 (13.1%)
P2 (32.7%)
P3 (54.2%)

Fig. 2. Latent profiles of childhood trauma, PTSD, and dissociative symptomatology; P1 = PTSD, P2 = Dissociative Subtype; P3 = Complex Dissociative Symptomatology; CSA = Childhood Sexual Abuse; CPA = Childhood Physical Abuse; CPN = Childhood Physical Neglect; CEA = Childhood Emotional Abuse; CEN = Childhood Emotional Neglect; INT = Intrusion; AV = Avoidance; HYP = Hyperarousal; The items of the DES-T were ordered with derealization/depersonalization being shown first, then identity confusion, then amnesia, then AVH. DE1 = "Some people have the experience of finding themselves in a place and having no idea how they got there."; DE2 = "Some people have the experience of finding new things among their belongings that they do not remember buying."; DE3 = "Some people sometimes have the experience of feeling as though they are standing next to themselves or watching themselves do something, and they actually see themselves as though they were looking at another person."; DE4 = Some people are told that they sometimes do not recognize friends or family members."; DE5 = Some people sometimes have the experience of feeling that other people, objects, and the world around them are not real."; DE6 = "Some people sometimes have the experience of feeling that their body does not seem to belong to them."; DE7 = "Some people find that in one situation they may act so differently compared to another situation that they feel almost as if they were two different people."; DE8 = "Some people sometimes find that they hear voices inside their head which tell them to do things or comment on things that they are doing."

Discussion/Conclusion

The results of this latent profile analysis are in line with prior findings regarding a dissociative subtype of (complex) PTSD [20,26,27]. However, the results go beyond these findings in the identification of another subgroup of PTSD patients characterized by more severe and qualitatively different dissociative symptoms, i.e., AVH, identity confusion, and dissociative amnesia. In our sample of severely traumatized inpatients with PTSD, this group was found to be the largest subgroup. Interestingly, the dissociative subtype group differed only in their reported avoidance from the PTSD group regarding PTSD symptom clusters. This is in line with empirical findings and theoretical models that highlight the links between avoidance and dissociation [59]. Our results are furthermore in line with earlier findings regarding the high prevalence and importance of dissociative symptoms in complex presentations of PTSD [27,43,60,61].

There is evidence that dissociation is not a barrier to trauma treatments [62]. Yet, such evidence has been based on milder forms of dissociation such as derealization and depersonalization. As high quality, randomized-controlled studies on trauma-focused treatment for trauma survivors with more complex and more severe dissociative symptoms beyond the dissociative subtype are lacking, implications of their presence for treatment remain unknown. Further research is required in this area,

but our clinical experience suggests that those with more severe forms of dissociation, such as dissociative amnesia and AVH, are less likely to benefit from standard treatments for PTSD.

There is emerging evidence, though, that trauma-focused psychotherapy is feasible, safe, and efficacious in the treatment of PTSD with AVH in the context of a psychotic disorder [63–67]. Furthermore, in the context of CBT for psychosis, promising strategies to make sense of AVH and to change the way voice hearers engage with their voices have been developed and proven efficacious [68–72]. Also, evidence from multiple high quality studies shows that dissociative amnesia may be conceptualized as a problem of memory retrieval linked to symptoms that are also found in PTSD like avoidance, overgeneral memory, and dysfunctional beliefs [59,73,74]. Symptoms of dissociative amnesia might therefore respond to established evidence-based strategies to reduce avoidance, modify dysfunctional beliefs, and foster commitment to change. Recent evidence, furthermore, shows that complex dissociative disorders in many aspects resemble Borderline personality disorder (BPD) [75]. BPD is a common comorbidity of PTSD and there is strong evidence that trauma-focused treatments that include treatment modules for the development of emotion regulation and anti-dissociative skills are efficacious in the treatment of BPD and PTSD [76,77]. There is preliminary evidence that trauma-focused treatments like trauma-focused cognitive-behavioral therapy, EMDR, and Schema Therapy are feasible, promising approaches in the treatment of comorbid PTSD and dissociative identity disorder [78–80]. Personalized modular therapies have been recommended for more complex forms of PTSD [81]. Such approaches might also be useful for those who present with PTSD and severe forms of dissociation. We hope that this paper will raise awareness of the issue of severe dissociation in clinical samples with PTSD and will inspire further research on the effectiveness of interventions for this group of patients.

Strengths and Limitations

The diverse naturalistic sample comprises a wide variety of trauma survivors with multiple traumatic experiences ranging from war and torture and escape from it, human trafficking, childhood sexual abuse, childhood physical abuse, to rape and more, ensuring high ecological validity. On the other hand, ICD-10 diagnoses of post-traumatic stress disorders were clinical diagnoses given by attending psychologists and doctors, without the use of a structured interview like the research version of the structured clinical interview for DSM-5 [82]. Furthermore, the DES-T is inadequate to assess all aspects of compartmentalization dissociation. Hence, future studies should employ better measures of identity alteration in particular, but also of AVH and amnesia. Last but not least, it is an important limitation that it remains unclear how many patients of the P3 cluster qualified for an ICD-11 diagnosis

of (partial) dissociative identity disorder. More research regarding the phenomenology of (partial) dissociative identity and its links to PTSD is needed.

Concluding remarks

Particularly in populations characterized by experiences of chronic interpersonal violence during childhood, clinicians should always assess dissociative symptoms beyond detachment, i.e., AVH, amnesia, and identity confusion and alteration. Yet, implications of severe dissociative comorbidity for treatment remain unknown due to a lack of high-quality treatment studies. Yet, there is some emerging evidence of the usefulness of trauma-focused, modular, and multicomponent approaches that incorporate reprocessing of traumatic memories as well as development of emotion-regulation skills that can potentially regulate dissociative experiences, modify dysfunctional beliefs about memory, as well providing strategies to engage with AVH developed in the context of CBT for psychosis.

Statements

Acknowledgement

None

Statement of Ethics

Ethical approval is not required for this retrospective analysis of anonymous clinical routine data in accordance with local law (BayKrG, BayRS 2126-8-G).

Conflict of Interest Statement

The authors have no conflicts of interest to declare.

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Author Contributions

Leonhard Kratzer, Stefan Tschöke, and Thanos Karatzias participated in the conception and planning of the study. Leonhard Kratzer, Christine Eckenberger, and Peter Heinz performed the acquisition of the data. Leonhard Kratzer performed the analysis of the data and wrote the draft manuscript, which was revised and supplemented by all authors. All authors approved the final manuscript and stand by the findings and conclusions. The authors alone are responsible for the content and writing of the report.

Data Availability Statement

The data that support the findings of this study are not publicly available due to the specifications of the informed consent agreement, but are available from the corresponding author upon reasonable request.

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