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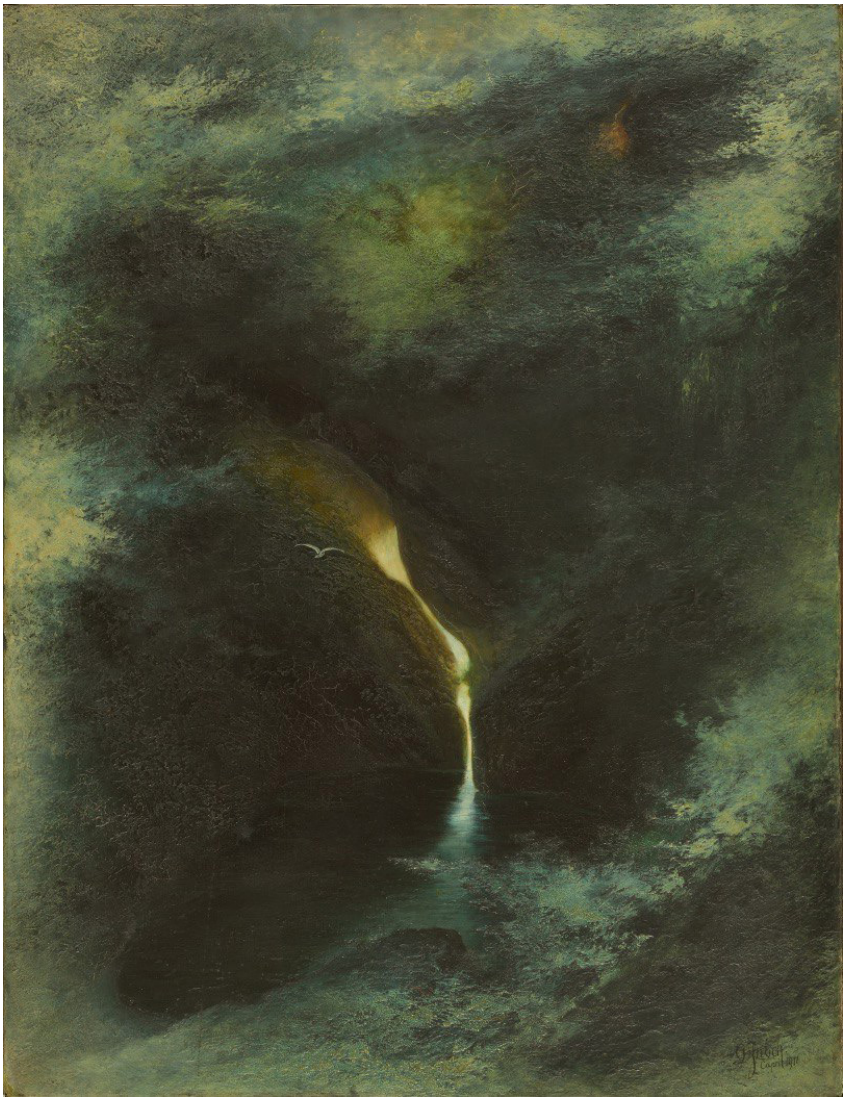

Karl Wilhelm Diefenbach, Pogled iz špilje, Capri, 1911.
oil on canvas
MLU-S-223

Josip Juraj Strossmayer University of Osijek
Faculty of Medicine

Diefenbach's Symbolist landscape from the Povischil collection was created in 1911 in Capri, two years before the artist's death. It belongs to the final creative phase of his work, fitting in the series of paintings that varied during that time with its theme, motifs and composition. The composition and motifs of the painting View from the Cave, which was acquired by Rudolf Povischil for his collection, were developed by Diefenbach in several variations. The painting Blick aus der Grotte from 1912 is almost identical – the painting from the Povischil collection is only missing a female character in the central composition. The motif of the female figure connected to the sea and waves or inside the cave commonly appears in the paintings created in Capri. The view from the cave extends to a narrow gap in the farthest distance, through which light peeks, reflecting on the calm surface of the sea. The main symbolic content of the painting lays at the center of the composition – a light opening illuminating the interior of the cave, as well as a delicate motif of a white bird, a frequent detail present in Capri landscapes. One could say – what is implemented in Diefenbach's painting applies as a rule for Symbolist painting in a general sense: light is no longer implemented to merely illuminate the scene in the painting, but mediates a metaphysical experience of the painting.

(Daniel Zec, Josip Leović, Gallery of Fine Arts in Osijek, 2013, page 139)

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Contents

SEEMEDJ SOUTHEASTERN EUROPEAN MEDICAL JOURNAL

Editorial

Dear Colleagues, Dear Friends,

The editorial team is pleased to present Volume 8, Number 1 (2024) of the Southeastern European Medical Journal (SEEMEDJ).

The aim of this issue is to expand knowledge and raise awareness about trauma and trauma outcomes, with a special emphasis on post-traumatic growth.

In this issue, we reaffirm our dedication to advancing knowledge, challenging conventions, and advocating for the well-being of individuals facing traumatic experiences. The articles mainly cover various types of traumatic experiences and their potential outcomes in different study populations, including childhood traumas, personality disorders, patients with psychosis, war captives, oncology patients, and student populations.

In the second-to-last section of this issue, you will find abstracts from the Third Symposium "Integrative Approach in Psychiatry - Trauma and Posttraumatic Growth," held at the Faculty of Medicine Osijek, Josip Juraj Strossmayer University of Osijek, Croatia, on May 16, 2024. The symposium featured presentations on the latest knowledge, scientific, and professional approaches in the fields of psychotraumatology, psychiatry, and related interdisciplinary areas.

We would also like to highlight the artwork featured on the cover of this issue. It is an oil painting on canvas by Karl Wilhelm Diefenbach titled "View from the Cave," Capri, 1911, from the collection of the Museum of Fine Arts in Osijek (MLU-S-223).

The editorial team extends its deepest gratitude to the authors, reviewers, editorial board members, and readers, who have all been integral to the growth and success of our journal.

We hope you enjoy reading this edition of the Southeastern European Medical Journal (SEEMEDJ).
Sincerely

Dunja Degmečić
Editor -in -Chief

Review article

A Soul Laid Bare by Trauma

Majda Grah [1, 2, 3], Branka Restek-Petrović [1], Vladimir Grošić [1, 2], Željko Milovac [1], Tajana Prga Bajić [1], Josefina Gerlach [1]

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Abstract

During treatment, most patients share their traumatic experiences, which can be a precipitating factor in the development of various psychiatric disorders. In numerous studies, traumatic experience has been highlighted as a possible etiological factor in the development of different personality disorders. Traumatic experiences in developmental stages of personality can result in disturbances in the ability to maintain feelings of security and individual identity in adulthood. Therefore, it is not difficult to imagine the dimension of the impact of trauma on overall personality sensitivity and the inability to achieve individuation, separation and overall personality cohesion. The most prevalent studies on the traumatic impact on personality development are related to borderline personality disorder (BPD). They point to the existence of a combination of genetic and environmental factors in the development of BPD, particularly the combination of biological vulnerability and exposure to traumatic experiences during childhood. Developing preventive programs and initiating psychotherapy in a timely manner, along with the use of contemporary pharmacotherapeutic treatment algorithms, can protect individuals at high risk of developing disorders or minimize disorder symptoms later in the lives of those affected.

(Grah M*, Restek-Petrović B, Grošić V, Milovac Ž, Prga Bajić T, Gerlach J. A Soul Laid Bare by Trauma. SEEMEDJ 2024; 8(1); 1-6)

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KEYWORDS: borderline personality disorder; trauma; preventive programs; psychotherapy

Introduction

The era of misunderstanding patients with personality disorders, coupled with a sense of helplessness in the face of their varied manifestations, is long behind us. Once, successful inpatient treatment of these specific conditions seemed unimaginable due to the inability to create an adapted environment, insufficiently educated staff, and numerous transferential and countertransferential feelings. With the development of various psychotherapeutic techniques (psychoanalytic and cognitive-behavioral methods), as well as the implementation of specific treatment programs and modern psychopharmacotherapy, the treatment of patients with personality disorders is successfully conducted both in hospital and day hospital settings. The foundation for the possibility of such dynamic work lies primarily in creating an adequate therapeutic environment and, accordingly, in the long-term education of the different profiles of staff treating patients with personality disorders, which represents the basis of therapeutic success (1, 2).

During treatment, the majority of patients often disclose their traumatic experiences, which can serve as precipitating factors for the development of various psychiatric disorders. In numerous studies, traumatic experience has been highlighted as a potential etiological factor in the development of different personality disorders.

Personality disorders and traumatic experiences

Psychoanalytic theories of personality prioritize the needs of the child, as well as the infantile aspects of the adult, as constant seekers of instinctive gratification. Adequate care for the child is interpreted as a delicate balance between sufficient gratification that creates emotional security and comfort, and developmentally appropriate frustration, allowing the child to learn, in finely titrated doses, how to replace the pleasure principle and ultimately develop into a stable personality (3). Margaret Mahler (4) took a further step in conceptualizing the essential elements for personality development by considering the phases of the separation-individuation process that take place up to the third year of a child's life. Traumatic experiences in these developmental stages can result in impaired ability to maintain a sense of security and individual identity in adulthood. Therefore, it is not difficult to imagine the dimension of the impact of trauma on overall personality sensitivity and the inability to achieve individuation, separation and overall personality coherence.

Each newborn differs in temperament from birth. Innate differences encompass levels of activity, aggressiveness, reactiveness, ability to achieve comfort, as well as similar factors that can influence developmental trajectory toward a psychopathological direction (3). Understanding the concepts of basic security and identity, self, attachment, developmental delay and deficits, shame, affect regulation, trauma and attachment have contributed to the understanding of narcissism (5–10). The histories of masochistic personalities are filled with pain, traumatic experiences, unresolved losses and highly critical parents. Similarly, this is observed in depressed individuals who internally believe there is no one out there for them. The etiology of masochistic personality development is still not fully understood, but gender differences in response to trauma and abuse have been noted (3). Abused girls more commonly develop masochistic patterns such as stoicism, sacrificing and experiencing moral victory through physical defeat. In contrast, abused boys are more likely to develop sadism by identifying with aggression (11).

Recent research suggests the existence of a genetic predisposition that can be activated by early traumatic experiences. Childhood abuse can affect the development of the orbitofrontal cortex, which is considered the moral center in the brain (12–14). A correlation has been observed between the expression of genes that regulate noradrenaline and consequently affect neurotransmitters and the X chromosome, with later development of antisocial behavior in

individuals who have been exposed to abuse (15).

The correlation between the impact of traumatic experiences and the development of borderline personality disorder (BPD)

Borderline Personality Disorder (BPD) is a significant public health concern due to its prevalence, complex clinical presentation, and limited pharmacotherapeutic efficacy (16, 17). It is characterized by emotional instability, cognitive and identity disturbances, impulsivity and severe difficulties in interpersonal relationships, often accompanied by frequent suicidal ideation and a suicide rate of 10% (18).

The most prevalent research of the traumatic impact on personality development are associated with studies on BPD. They suggest a combination of genetic and environmental factors in the development of BPD, particularly the interplay between biological vulnerability and exposure to traumatic experiences during childhood (19).

It is hypothesized that BPD arises as a maladaptive neurodevelopmental response to stress, as research indicates altered behavioral and physiological stress response among affected individuals, including dysfunction of the hypothalamic-pituitary-adrenal (HPA) axis (18).

Insecure family environment coupled with parental criticism, witnessing family violence, overall emotional or physical neglect, as well as psychological, physical or sexual abuse in childhood are considered significant etiological factors in the development of BPD (20). Research points to childhood abuse as a potentially pathogenic factor. Cross-sectional studies utilizing retrospective reports have found that 30 to 90% of patients with BPD experienced sexual, physical or emotional abuse during childhood (20–22).

The stress-diathesis model assumes the development of BPD in genetically vulnerable individuals exposed to childhood abuse. According to this model, the stressor of abuse functions as a negative environmental risk factor for disorder development (23). Whether childhood abuse is viewed as an environmental risk factor or as a direct cause of BPD development, research has shown an association between the severity of abuse and higher levels of BPD symptoms and overall psychosocial dysfunction (20).

Bandelow and his team investigated the association between traumatic life events in childhood, parental styles and attitudes, family factors and birth risk factors in subjects with BPD compared to healthy controls (24). The study confirmed the association of BPD with severely disrupted family environments characterized by parental separation, growing up in foster families, adoption, family violence or crime, inappropriate parenting styles, lack of care and love and a high frequency of childhood sexual abuse in the patient group (24).

An increasing number of studies and systematic reviews are focused on environmental, temperamental, psychopathological and neurobiological factors that may be associated with the early onset of personality disorders, particularly BPD (25). Results from researchers at the University of Turin, Italy, have shown an association between earlier onset of BPD and poorer social functioning and traumatic events, including abuse, neglect and dysfunction in the family environment (26). The study aimed to identify factors independently associated with early onset of BPD, with the goal of characterizing a population at high clinical risk. Among BPD symptoms, only impulsivity was linked to early onset. It was concluded that a greater number of traumatic events and poorer impulse control lead to a significant reduction in the time interval before seeking psychiatric help (26).

Conclusion

Traumatic experiences over a lifetime shape personality, as their intensity and frequency can make it dysfunctional and cause a whole range of psychiatric disorders. In that sense, one of the most researched, but also one of the most stigmatized conditions in psychiatry is certainly

BPD. With their clinical presentation, elicitation of various countertransferential feelings and communication with the therapist through the phenomenon of projective identification, patients with BPD present clinicians with a great therapeutic challenge.

BPD can be understood as a modified, neurodevelopmental disorder resulting from maladaptive responses to trauma and stress (18). In other words, the clinician is faced with a soul laid bare by trauma, in which sensitivity to stress and excessive reactivity mediate the development and maintenance of disorder symptoms. In BPD, exposure to trauma is considered a risk factor in early life development, while acute stress moderates the symptoms pathway (18). All of this points to extremely fragile personality structures that often resort to highly immature defense mechanisms for survival in the intimidating interpersonal relationships they so desperately need (27).

It is considered that stressful events in early life, especially childhood traumas, negatively impact brain development through epigenetic mechanisms (19). Therefore, it is of great importance to better understand the interactions of risk factors and identify individuals at high risk of developing the clinical picture of the disorder. Therefore, it is crucial to enhance our understanding of the interplay among risk factors and to identify individuals at a high risk of developing the clinical manifestation of the disorder. The development of preventive programs, timely initiation of psychotherapy along with the application of contemporary pharmacotherapeutic treatment algorithms, can protect individuals at high risk of developing the disorder or minimize the symptomatology of the disorder later in the lives of those affected (19). Considering that predisposing factors for BPD are present in childhood and prodromal symptoms often emerge in young age, particularly in early adolescence, protecting this population of souls laid bare by trauma should be a priority in public health action.

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Critical revision of the article for important intellectual content: MD, BRP, VG, ŽM, TPB, JG
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Final approval of the article: MD, BRP, VG, ŽM, TPB, JG
Guarantor of the study: MD, BRP, TPB

Duša ogoljena traumom

Sažetak

Tijekom liječenja većina pacijenata dijeli svoja traumatska iskustva, što može biti čimbenik koji potiče razvoj različitih psihijatrijskih poremećaja. U brojnim studijama, traumatsko iskustvo istaknuto je kao mogući etiološki čimbenik u razvoju različitih poremećaja ličnosti. Traumatska iskustva u razvojnim fazama osobnosti mogu rezultirati poremećajima u sposobnosti održavanja osjećaja sigurnosti i individualnog identiteta u odrasloj dobi. Stoga nije teško zamisliti dimenziju utjecaja traume na ukupnu osjetljivost osobnosti i nemogućnost postizanja individuacije, separacije i opće kohezije osobnosti. Najzastupljenije studije o traumatskom utjecaju na razvoj osobnosti odnose se na granični poremećaj osobnosti (BPD). One ukazuju na postojanje kombinacije genetskih i okolišnih čimbenika u razvoju BPD-a, posebno kombinacije biološke ranjivosti i izloženosti traumatskim iskustvima tijekom djetinjstva. Razvijanje preventivnih programa i pravovremeno započinjanje psihoterapije, uz korištenje suvremenih algoritama farmakoterapijskog liječenja, može zaštititi osobe s visokim rizikom od razvoja poremećaja ili smanjiti simptome poremećaja kasnije u životu pogođenih osoba.

Review article

Trauma-Informed Care Promoting Recovery from Psychosis

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Abstract

Research confirms that a traumatic experience, especially during childhood, is associated with an increased risk of psychosis and that psychosis is also associated with an increased risk of PTSD. People with psychosis and a history of trauma have a poor response to medication and a worse prognosis, which adversely affects their recovery. During the psychiatric treatment of a person with psychosis, they are rarely asked about their personal experience of trauma, which results in inadequate treatment planning. The main obstacle to the optimal treatment and recovery of these people is the neglect of the bio-psycho-social approach because it is still considered that psychosis is exclusively biologically conditioned and neglects the psychological approach and psychosocial interventions. The paper presents data related to the prevalence of trauma-related psychosis and the consequences of trauma on recovery. It describes a trauma-informed recovery approach that represents a framework for the organization of treatment that helps people overcome the negative consequences of trauma and promotes recovery.

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KEYWORDS: psychosis, trauma, recovery, PTSD

Introduction

There is strong research evidence that experiences of trauma during a lifetime increase the risk for psychosis (1, 2). The risk of psychosis is three times higher in people who experienced trauma in childhood compared to those who did not (1, 3), but the risk is high for bullying (4, 5, 6, 7), domestic violence and other highly stressful life events (8), and involuntary treatment (9, 10). Higher rates of childhood victimization and PTSD are reported across the spectrum of psychosis compared to the general population (11–15). The prevalence rate for PTSD for people with psychosis is 20 to 30% (16) compared to 7.8% in the general population (17). People with psychosis and a history of trauma have worse clinical and functional outcomes and poor response to medication (16, 18, 19, 20). Unfortunately, trauma and PTSD in people with psychosis often remain under-detected in mental healthcare services (21–24). As a consequence, many people with psychosis and PTSD will not be treated with trauma-specific therapy (25). It is, therefore, imperative that therapists be willing and able to address trauma and its consequences when supporting recovery from distressing psychosis (26).

Although findings show that psychological trauma plays a role in developing psychosis and that these people have a poor response to medication and poor prognoses, they are less likely to be treated in the framework of trauma-informed recovery care as well as receive evidence-based psychological treatment for trauma and psychosis. Unfortunately, the biological approach to understanding psychosis and pharmacological therapy for psychosis still prevails in clinical practice. As a result, patients diagnosed with psychosis who do not respond satisfactorily to medication are often declared treatment-resistant without considering psychosocial factors such as a history of trauma as the cause of resistance (27, 28). Such disregard of trauma has severe negative consequences related to poor outcomes and recovery from psychosis (29, 30). The goal of this paper is to draw attention to the need to talk about trauma and assess its impact on mental health conditions and recovery of persons with psychosis in everyday psychiatric practice in order to develop appropriate individual treatment plans that can affect the adverse effects of trauma and promote recovery.

Method: The key terms trauma, psychosis, recovery and PTSD were used to search three databases: Medline, Embase and PsycInfo. After that, relevant papers were selected in accordance with the objectives of this paper.

The impact of trauma on mental health

As stated earlier, there is a connection between trauma and the onset of mental disorders, including psychosis. The trauma victims activate automatic fight, flight and freeze responses to minor stresses or external cues, which can lead people to become dysregulated into a hyperarousal state, in which feelings of terror and panic may trigger the use of coping strategies such as substance misuse and self-injury to reduce distress (31, 32). Trauma can impair the course of normal psychological development and put people at a high risk of developing mental health disorders. The functioning of the mother as an empathetic self-object who meets the child's needs for mirroring and protection (33) is related to the development of a healthy personality with a stabile positive sense of self and the capacity to develop trustful relationships with other people, which decreases the risk for developing the mental disorder. Early trauma interfered with the healthy empathic functioning of the mother and led to attachment difficulties (34–38) with the consequences of difficulties in emotional regulation and mentalization, negative self-perception and decreased trust in other people (39). Therefore, trauma can impact people's ability to feel safe in relationships, manage strong emotions and view themselves as worthwhile. On the social level, it causes avoidance of social contact, difficulties expressing feelings and loneliness (40). On the other hand, for some persons, there is also a possibility for posttraumatic growth and positive change following trauma (41–45). The promotion

of PTG may contribute to the treatment of people who have experienced severe mental illness (SMI) and who have endured psychotic symptoms, especially using interventions targeting the development of a positive perception of identity (46).

The link between psychosis and trauma is complex and multifactorial. According to Morrison et al. (47), an integrative model of the spectrum of trauma reactions, trauma may lead to psychosis and related experiences can themselves give rise to PTSD, and both psychosis and PTSD may lie on a spectrum of shared reactions to emotional trauma.

The influence of particular traumatic experiences on specific psychotic symptoms such as auditory verbal hallucinations and paranoia has been studied in research (48). Thus, it has been found that childhood rape was associated with hallucinations and institutional care was associated with paranoid beliefs. Physical abuse was associated with both kinds of psychotic experiences (48). For many people with psychosis and a history of trauma, a relationship between their life events and the content of their psychotic experiences has been found, such as hearing distressing voices, which were a direct repetition of a past traumatic event (48–52).

Comparisons made with the type of trauma about the risk for psychosis have found that emotional neglect and interpersonal violence compared with parental loss, unintentional injury or economic adversity are strongly associated with the risk of developing psychotic symptoms (4), and the risk is more significant for abuse compared with neglect (53).

The research on the relationship between life-threatening events such as accidents and natural disasters and the risk for psychosis is conflicting. However, most studies did not find an increased risk for psychosis (54, 55), but exposure to multiple types of trauma and a longer duration of trauma has been associated with a greater risk of developing psychosis (48, 56, 57).

The mechanisms involved in pathways from trauma to psychosis

Multiple models have been proposed to explain the link between trauma and psychosis (34). The stress vulnerability model suggests that following trauma exposure, individuals with a genetic risk for developing psychosis are at an increased risk of developing the disorder (58). The socio developmental hypothesis suggests that multiple stressors interact at various stages of development to cumulatively increase the risk of developing psychosis through gene environment interactions (59). The theory of social defeat explains the link between childhood trauma and psychosis, whereby prolonged or chronic exposure to victimization may lead to negative evaluations of the self and other individuals, leading to hostile interpretations of ambiguous social situations and the intentions of other individuals (60). According to Alameda et al. (61), these findings suggest that the extreme experiences of threat, hostility and violence in childhood and adolescence may mediate the development of psychotic symptoms in individuals with underlying genetic susceptibility and neuro-developmental adversity through cognitive processes such as negative beliefs about the self, world and others, leading to distressing interpretations of everyday events or cognitive appraisal biases that could eventually result in paranoid delusion. Affective pathways such as anxiety, depression and emotional dysregulation, leading to dissociation, could eventually evoke hallucinations (61). Hardy (62), in her model of posttraumatic stress in psychosis, describes the central role of autobiographical memory and trauma-related emotion regulation strategies in shaping the phenomenology of intrusive imagery, subsequent appraisals and coping responses.

Mayo et al. (34) conceptualize a cyclical relationship between trauma and psychosis; the emergence of psychosis creates a string of increased vulnerability to future traumatic experiences and poor prognosis. Therefore, trauma interventions are needed to break this cycle of expected poor prognosis.

Recovery is facilitated by trauma-informed care

Healthcare services themselves can unintentionally traumatize or re-traumatize people (63), mainly when the biomedical approach dominates interventions and fails to acknowledge the value of healthy and meaningful relationships, which mitigate the destructive impact of trauma (64). Therefore, to reduce traumatization in mental health care, the provider should make organizational changes aiming to create environments and relationships that promote recovery and resilience and prevent traumatization. The recovery approach is based on the assumption that people have the capacity for growth, change and recovery (65), empowering individuals to regain control over their lives, develop coping strategies, build social support networks and pursue personal goals (66). Trauma-informed care incorporated the principle of recovery and resilience in the organization's care framework.

Trauma-informed care (TIC) is a process of organizational change that creates recovery environments for staff, survivors, their friends and allies, with implications for relationships (71). TIC mental health service assumes that any client admitted to mental health service could have a trauma history, fosters safety and trust and actively resists re-traumatization (67). TIC enables the creation of organizational settings that reflect the exact opposite conditions a person may experience during a traumatic event, and the creation of such conditions will facilitate growth and engagement (68). TIC responds in a way that supports recovery, does no harm, and recognizes and supports people's resilience (69). To do that, all of the interactions with clients should be based on safety, trustworthiness, choice, collaboration and empowerment (67, 68).

Trauma-informed and recovery promotion care and practice (66) are based on a strengths-based framework emphasizing physical and psychological safety, creating opportunities for people with lived experience to rebuild a sense of control and empowerment. Focusing on what makes individuals strong rather than what makes them weak may help us understand what helps them maintain their mental health. No intervention that takes power away from the survivor can foster their recovery, no matter how much it appears to be in their immediate best interest (70).

The fundamental shift in providing support using a trauma-informed recovery approach is to move from thinking 'What is wrong with you?' to considering 'What happened to you?' (71), and promoting resilience (72). Asking people about what happened to them rather than what is wrong with them can facilitate engagement. Trauma disempowers people and hinders recovery; therefore, it is necessary to create an environment that will allow people to feel safe to speak freely about the experience of trauma in their lives. The first and most vital step of trauma-informed practice is to establish a therapeutic relationship with clients, which promotes a feeling of safety. (70). When clients feel a sense of internal safety, they have the capacity to manage strong affect without becoming overwhelmed, engaging in self-destructive behavior or shutting down (70). A significant protective factor against mental health disorders and recovery from trauma is developing meaningful relationships (70, 73). Through relationships, trauma survivors can learn to feel safe, trust others, learn new ways of relating to people, develop self-compassion, improving self-regulation and attachment (32). The perception of social support has been found to be an influential factor in the effects of traumatic events on the individual and the community (74). Therefore, helping people find social support is an integral part of the recovery and trauma-informed care approach.

TIC differs from trauma-specific practice (75, 76), which was created to treat clients diagnosed with PTSD. However, trauma-informed practice is not used to treat a particular trauma or stressor-related disorder. Instead, it provides mental health professionals with a framework to conceptualize their practice. Different treatments are available that target traumatic symptoms in people who experience psychosis (77), such as trauma-focused cognitive behavioral therapy for psychosis, eye

movement desensitization and reprocessing (EMDR), and trauma exposure therapy. These interventions are safe (78) for people with PTSD and psychoses and should be available for those who are needed. Evaluation of TIC (79) has shown increased staff levels of safety and satisfaction, trustworthiness, choice, collaboration and empowerment, including trusting each other, ability to work collaboratively, influencing their workplace, being encouraged to innovate or feeling fulfilled. Health services also (80) demonstrated a significant reduction in seclusions and restraints. The evaluation also shows that staff training and other forms of workforce development could be the most effective strategy to promote organizational change by creating shared trauma-related language, knowledge and skills (69).

Does talking about trauma harm people with psychosis?

A systematic review found that most people who use mental health services are never asked about traumatic experiences such as childhood abuse and neglect, and that people diagnosed with psychotic disorders are asked even less than other service users (83). The reasons may be related to client-related barriers, including symptoms interfering with treatment, client unwillingness, cognitive impairment and communication difficulties (81). Clinician-related barriers to treatment included clinician anxiety (82), lack of knowledge and experience as well as staff perceptions regarding their competence and confidence in delivering interventions, the usefulness of interventions and agency support (81). A descriptive study investigating victimization found that 11% of participants with experience of psychosis would not report any victimization to anyone and that in 57% of the cases, patients would not report any victimization even when the psychiatrists thought that their patients had been victimized, which may be related to the dissociation of the traumatic experience (84).

The reluctance of practitioners to enquire about trauma has been attributed to concerns about offending or distressing the clients (83, 85). This is contrary to evidence from research that trauma disclosure is beneficial for recovery (86, 87). Patients with trauma history welcomed the idea of a professional asking them about their experiences as long as they felt safe and not judged (84, 87). Talking about the trauma was a liberating experience; the people felt as if a weight had been lifted off their chests (40). Not being able to discuss traumas resulted in being cautious around other people and keeping their distance for fear of being hurt or losing someone they cared about, leading to increasing isolation; therefore, clinicians should be encouraged to discuss traumatic experiences with patients. Not being able to recognize and discuss traumatic stress in people with psychosis is a cause of great concern, as traumatic life events and their consequences can lead to more severe clinical profiles, worse overall functioning and lower remission rates when compared to patients who did not experience such events (88).

Discussion

Interpersonal trauma, especially in childhood and adolescence, is a significant risk factor for psychosis and can hinder the process of recovery. It can have lasting adverse effects on psychological and social individual functioning in many life areas. If not treated, persons become imprisoned with negative emotions such as helplessness, guilt, anger, fear and shame. It has consequences of increasing difficulties in trusting self and others, which has resulted in various difficulties in emotional control, low self-esteem, mentalization difficulties, trust in others and social exclusion, which puts a person at risk for poor prognoses, frequent hospitalizations and recurrent psychotic episodes.

Based on the evidence on the link between trauma and psychosis, there is the importance of comprehensive screening for trauma in all patients presenting with psychotic-like symptoms or a psychotic disorder (89) and offering trauma-informed treatment to address trauma and its consequences (77, 89) and supporting recovery from psychosis (29, 30).

Trauma experiences and associated clinical consequences can be identified through a variety of methods, and clinicians should be able to determine whether trauma is a significant centerpiece of the presenting problem or a complicating factor that aggravates the individual's psychosis symptoms (34). Trauma-informed mental healthcare offers opportunities to improve service users' experiences, improve working environments for staff, increase job satisfaction and reduce stress levels by improving the relationships between staff and patients through greater understanding, respect and trust (30, 79). Recovery and trauma-informed approaches emphasize creating safe and supportive environments based on trust and collaboration, validating a person's traumatic experiences, promoting empowerment and addressing the underlying trauma-related issues that may contribute to psychotic symptoms. Acknowledging and addressing trauma can also open the door for posttraumatic growth. Integrating trauma-informed and recovery promote care principles into mental health services can enhance engagement, empower people, promote resilience, improve treatment outcomes and facilitate recovery for individuals with psychosis who have a history of trauma.

Conclusion

Our paper reveals enough evidence that the experience of trauma, especially in early childhood and adolescence, is associated with the risk of psychosis, developing PTSD and a worse prognosis. Also, people with psychosis are rarely asked about their traumatic experiences. The most common reasons for this behavior are attitudes about the biological cause of psychosis and neglecting the psychosocial interventions, which becomes the main obstacle to recovery, putting people at risk of being declared treatment-resistant, which seriously jeopardizes the possibility of recovery. Other reasons include a lack of trauma screening within routine services or minimization of trauma impact on psychosis by the individuals themselves. Our findings support the need to change current practices and implement trauma-informed care to promote the recovery process.

Our paper highlights the importance of discussing trauma and looking at psychosis through a "trauma lens". Therefore, there is a need to systematically assess trauma history and traumatic symptoms in psychosis and overcome the clinicians' worries about discussing trauma with service users.

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Final approval of the article: SŠI, DD
Guarantor of the study: SŠI, DD

Skrb utemeljena na traumi koja promiče oporavak od psihoze

Sažetak

Istraživanja potvrđuju da je traumatsko iskustvo, osobito tijekom djetinjstva, povezano s povećanim rizikom od psihoze te da je psihoza također povezana s povećanim rizikom od PTSP-a. Osobe s psihozom i poviješću traume imaju slabiji odgovor na lijekove i lošiju prognozu, što negativno utječe na njihov oporavak. Tijekom psihijatrijskog liječenja osobe s psihozom, rijetko se postavljaju pitanja o njihovim osobnim traumatskim iskustvima, što rezultira neodgovarajućim planiranjem liječenja. Glavna prepreka optimalnom liječenju i oporavku tih osoba je zanemarivanje bio-psiho-socijalnog pristupa, jer se i dalje smatra da je psihoza isključivo biološki uvjetovana, uz zanemarivanje psihološkog pristupa i psiho-socijalnih intervencija. Rad prikazuje podatke vezane uz prevalenciju psihoze povezane s traumom i posljedice traume na oporavak. Opisuje se pristup oporavka temeljen na razumijevanju traume, koji predstavlja okvir za organizaciju liječenja, pomažući ljudima da prevladaju negativne posljedice traume i potiče oporavak.

Review article

Two Case Presentations with Unexpected Outcomes after Childhood Trauma

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Abstract

Bowlby developed the theory of attachment, describing it as a lasting emotional bond between human beings, manifested by seeking proximity to caregivers, especially in times of distress. Children adjust their behavior to prevent separation from their primary attachment figure – someone who provides support, protection and care. Attachment theory provides a favorable framework for understanding our two cases and their developmental paths.

We report two cases of female individuals, both of whom had a family history of psychiatric disease and experienced early parental separation with the grandparents playing significant roles in their upbringing. The two cases had radically different outcomes: one was diagnosed with schizophrenia and the other with generalized anxiety-depressive disorder. We attempt to analyze the reasons for the disparate outcomes of these two cases through the framework of numerous published studies that highlight protective and risk factors for psychiatric disease, studies that highlight the impact of traumatic events in childhood on a child's biological, psychological and social development, as well as through the lens of psychodynamic and attachment theories.

Throughout the analysis, the importance of early intervention is made clear: both through various treatment modalities and preventive measures, as well as by providing successful mental health programs directed towards the destigmatization of children with mental health problems.

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KEYWORDS: child psychiatry; attachment theory; childhood trauma

Introduction

This paper was written with several important objectives in mind. The first is to underscore the importance of understanding developmental psychiatry, i.e. the significance of grasping at least one theoretical construct (e.g. attachment theory) within the multidimensionality of development, and to highlight the use of etiopathogenesis as a foundation for approaching the emergence of psychopathology in children after childhood trauma. The second objective is to emphasize the importance of providing a concrete diagnosis in child psychiatry, primarily as a means for adequate selection of treatment, but also as an important tool in the planning of public health interventions such as preventative programs. The third is to highlight the benefits of robust support systems and early professional intervention in cases of childhood trauma.

In his 1964 book, D. W. Winnicott writes that the foundations of an adult's health are laid throughout childhood, and the foundations of human health are laid down by mothers in the first weeks and months of an infant's life. At that time, maternal love and complete dedication are absolutely necessary for the child. This is considered one of the greatest efforts for the mother. The mother is the child's first environment. The child is always seen in relation to the mother (1). This ties in with the concept of basic trust, according to Erik Erikson, which is considered the first stage in human life when the mother cares for the child. Based on that relationship the child develops trust, security and the foundation for future relationships. Otherwise, unfavorable effects may arise in later development, including feelings of alienation (2).

Winnicott wrote about breastfeeding as a secure relationship that enriches the child's emotional life from the beginning, and research by John Bowlby and Harry Harlow shifted the focus of attention from the method of feeding the child to the quality of care, nurturing and the relationship between the primary attachment figure and the newborn/infant (1).

From an evolutionary perspective, the newborn's ability to form attachment is an issue of survival. H. Harlow's experiment on monkeys demonstrated that there is no direct link between feeding and attachment; rather, early attachments result from the comfort and care provided by the caregiver (3). It was also shown that monkeys experienced separation from their mothers as traumatic, and the impoverished emotional life was transmitted transgenerationally. Harlow's discovery is consistent with John Bowlby's attachment theory. Attachment is also recognized as a risk factor (4).

J. Bowlby describes attachment as a lasting emotional bond between human beings, which manifests as seeking closeness to a caregiver, especially in uncomfortable situations. (5) Children adjust their behavior to prevent separation from the primary attachment figure – someone who provides support, protection and care (2).

Mary Ainsworth also researched attachment theory. She discusses three main styles: secure attachment, ambivalent-insecure attachment and avoidant-insecure attachment (6). Mary Main and Judith Solomon added a fourth attachment style called disorganized-insecure attachment (7). Differences in attachment styles that a child develops in interaction with the primary caregiver are a result of differences in the quality of the relationship between the primary caregiver and the child. Research shows that failure to develop secure attachment in early childhood can have a negative impact on behavior in later childhood and throughout life (8).

Attachment theory is also used to explain loneliness and romantic love (9), as well as to explain the processes of mourning and grief (10). In response to the threat of separation, children experience clinging, crying and anger. If the separation persists, withdrawal, apathy and despair occur, which are underlined by neurobiological disturbances (5, 11).

The thesis that separation from the primary caregiver is perceived as stress was also articulated by Spitz. Observing children who

grew up in foster care, he described their condition as anaclitic depression resulting from reduced social interactions. Literature on stress and trauma suggests that stress increases the need for a secure base. Any event that disrupts attachment in the child-caregiver relationship can be perceived as a threat to the loss of the primary sense of security and support, leading to significant trauma (12).

Begovac defines trauma as: "(...) an event (acute and/or series of events) that, due to its intensity, its danger to the child or someone else, its unusual nature and its suddenness or quality of surprise, disrupts the child's usual coping mechanisms and defensive mechanisms, temporarily leaving the child completely helpless" (13).

Case presentation

The following examples illustrate the complex clinical presentations of two female individuals with traumatic experiences during childhood.

The first patient was born as an only child in a nuclear family. As a child, she lived with her parents, maternal grandmother and maternal grandfather. She had a positive psychiatric family history. Her maternal grandmother suffered from depressive disorder and personality changes, while her grandfather suffered from epilepsy. Notably, the patient was not breastfed and was born with developmental hip dysplasia, for which she wore an orthosis and did not attend kindergarten. Throughout her childhood, she was described as insecure and withdrawn, seeking support and guidance. She consistently experienced criticism and verbal aggression from her grandmother. At the age of 9, her parents moved to another city due to a family conflict, and she remained living with her grandmother. They cited her vulnerability as the reason for her staying, wanting to shield her from the additional stress of adapting to a new environment until she matured. Following the separation from her parents, neurotic manifestations emerged – night terrors and enuresis, for which psychological help was sought for the first time. She lived with her grandmother and grandfather until the age of 11. Symptoms subsided until adolescence when, while on vacation at the seaside with her parents, she experienced a panic attack, followed by various obsessive thoughts, bizarre thoughts of being endangered which she had trouble suppressing, a need to check reality, and later delusional ideas and perceptual disturbances towards which she now lacked insight and critical judgment. Since the age of 16, she has been receiving regular outpatient psychiatric treatment. At 18, she was hospitalized for the first time and diagnosed with schizophrenia. Since then, she has been hospitalized several times. She developed a positive transference relationship with her psychiatrist. Multiple combinations of psychiatric medications have been tried with most being abandoned either due to side effects or inadequate treatment response. She regularly adheres to the recommended psychopharmacotherapy. She regularly attends the outpatient clinic as well as any follow-up appointments. She completed high school but has never worked in her field of study, and she is in a long-term relationship, but still relies on the care of her parents, with whom she lives.

The second patient was born as the first of three children in a nuclear family. Her father worked abroad. She had a positive psychiatric family history. Her mother briefly attended supportive psychological counseling during her childhood due to various fears, while her paternal grandmother and paternal aunt suffered from depressive disorder. Notable in the patient's early development is that she was not breastfed and did not attend kindergarten. At the age of one, she gained a younger sister, and at the age of six, a second sister. Throughout her childhood, she was described as withdrawn, calm and disinclined to take initiative. When the patient was 11, her youngest sister fell seriously ill and the mother spent most of her time in the hospital. Occasionally, the mother would visit the family. The grandmother took on the role of caregiver and cared for the older daughters. She was described as a warm, constant figure who provided support. While the mother was dedicated to caring for the youngest child, the patient began complaining of headaches.

Hospitalization of the patient to evaluate the headache was interrupted at the mother's request due to her inability to simultaneously care for all her daughters and her need to be with the youngest. Then, the mother and the patient experienced a car accident, after which the patient began having panic attacks. Two years later, she first visited a child psychiatrist for evaluation of anxious-depressive symptoms. She has been in regular psychotherapeutic outpatient follow-up since then. At one point during adolescence, she was briefly hospitalized. Throughout childhood, she was treated under the „other childhood emotional disorders" diagnosis, while in adulthood she was understood as having generalized anxiety-depressive disorder. She occasionally receives antidepressant therapy. She regularly attends college, is employed and lives alone.

Discussion

In her book Normality and Pathology in Childhood, Anna Freud states: "It is one thing to reconstruct a patient's past and trace symptoms back to their sources in early childhood, and quite another to detect pathogenic factors before they do harm; to establish the degree of normal progress of the young child; to forecast development; to intervene in manipulating the child; to study the child's parents; or, indeed, to work on the prevention of neuroses, psychoses and antisocial phenomena. For the first task, the child psychotherapist will be prepared by all recognized institutions that prepare personnel for psychoanalytic therapy, but for this second task, no such institution exists. Questions such as prognosis and prevention inevitably lead us to the study of the normal..." (14)

The importance of understanding a child's developmental trajectory and its variations in the process of emergent psychopathology is discussed in the scientific literature. The interaction of the child as an active participant in its development as well as its interaction with multidimensional factors are observed. One of the major divisions is between individual and environmental factors, as well as between risk and protective factors. The literature is focused on resilience, i.e. the child's ability to withstand adverse factors (13).

The two cases we described have similarities: both children were separated from their parents at an early age and left in the care of their grandmother. Both have mental illnesses in their family history and later developed psychological distress. However, one developed a lifelong severe mental illness with partially impaired work ability, while the other developed a mental disorder, attends college and is employed. The reasons for this are likely multifactoral and related to the complex interplay of all individual and environmental factors. Throughout this discussion, we will address some of them.

Genetic susceptibility is a recognized risk factor and is likely to have played a role in the development of psychopathology in both our cases. Family, twin and adoption studies attest to the association of genetics in numerous psychiatric disorders, including obsessive-compulsive disorder, panic disorder, major depressive disorder, bipolar disorder, schizophrenia and Alzheimer's disease (11). Genetic loci associated with schizophrenia have been identified (15). While DNA sequencing of individuals with a family history of psychiatric disease is not yet widespread, recent advances have reduced the price of whole genome sequencing to as low as $600 (16). Hopefully, with widespread adoption, at-risk children could be targeted for early therapeutic intervention.

Several meta-analyses have thus shown the positive impact of breastfeeding on later child health and development (17, 18, 19). An American meta-analysis from 2018 identified several factors for early cessation of breastfeeding: smoking, cesarean delivery, lack of dyadic attachment, and lower education and socioeconomic status of the mother (20). We can but speculate as to why our patients were not breastfed, however, the lower education and socioeconomic standing of the parents of both our patients could have played a role.

In both our cases, the primary trauma was separation of the child from its parents. During one period of their development, these children

were left in the care of their grandmother – in the first case, the parents moved to another city, while in the second, there was a physically absent father and a mother who was physically and mentally absent due to caring for another child. A higher incidence of depression has been proven in children who experienced parental absence between the ages of three and fifteen (21). Children left behind due to their parents' economic migration are at a higher risk of abuse, unintentional injuries and psycho-social problems (22).

This case illustrates how separation from the primary caregiver affected sleep and the occurrence of enuresis, as described by Begovac in his book: "Psychoanalysts view secondary enuresis as a conflict at a 'higher level' when regression occurs (the regressive position), as well as the emergence of feelings often associated with rivalry, jealousy and feelings of whether the child is loved enough" (13).

It is important to note the different relationship of the grandmother (as the de facto foster parent) to the child in these two cases. The first child presented was exposed to verbal abuse and was later described as socially isolated from peers until starting school, insecure, with reduced encouragement. She was less supported in achieving autonomy. The second child was described as calm and withdrawn, raised with a sister with whom she could socialize. The grandmother could somewhat substitute for the secure base of the mother. Both patients developed insecure attachment in childhood: the first developed disorganized, while the second developed avoidant-insecure attachment.

In the case of the first patient, who developed schizophrenia, there was a dissolution of her ego when there was conflict between the internal objects of the grandmother and the parents. Thus, the patient resorted to paranoid projection and perceived threats from everyone around her, while identifying most of all with her aggressor (the grandmother). She employed the most primitive defense mechanisms, such as psychotic denial and psychotic projection, as well as immature defenses like projection and reaction formation.

The second patient did not reshape reality but rather escaped from it, indicating neurosis. This patient developed generalized anxiety and depressive disorder in adulthood. Her ego attempted to neutralize anxiety through defense mechanisms such as repression, reaction formation and denial. Later in life, she also employed more mature defense mechanisms such as sublimation, suppression and humor.

Therefore, the treatment approaches for these two patients were different. The first patient underwent supportive psychotherapy along with polypharmacy (antipsychotics, mood stabilizers, anxiolytics and antidepressants). Family psychoeducation was also implemented. This is in line with a 2021 meta-analysis that found that family interventions, family psychoeducation, cognitive behavioral therapy, patient psychoeducation, integrated interventions and relapse prevention programs were superior to standard care alone (usually maintenance treatment with antipsychotics) in preventing relapses in schizophrenic patients at 12 months (23).

The second patient received psychodynamic psychotherapy with occasional pharmacological treatment using only antidepressants.

A meta-analysis showed that children who are exposed to abuse within the family or community have an increased risk of developing various psychological and behavioral difficulties. However, some demonstrate resilience or adaptive functioning, which includes protective factors such as self-regulation, family support, support from the school system and friends (24). As the first patient was subjected to constant verbal abuse by the grandmother and lacked a robust support system, we consider it highly likely that this contributed to the eventual development of the disease.

Also important is the support system that a child has access to after a traumatic event has occurred (12). Children placed with kinship caregivers, compared to those who are not, have better outcomes in terms of behavior,

psychological functioning and feelings of stability (25). One study also suggests that social support is directly related to fewer trauma-related symptoms, especially in adolescents who have not experienced sexual abuse (26). Positive impacts of psychological therapies, particularly cognitive-behavioral therapy, in treating PTSD in children lasting longer than a month have been demonstrated. Identifying risk and protective factors in children who have experienced traumatic events in childhood is important for creating preventive programs and facilitating early interventions by professionals (27).

In childhood and adolescence, there is a delicacy in the approach to the diagnosis of mental disorders. The physician makes the diagnosis, although communication between the physician and the parents about the child's diagnosis is paramount. Sometimes more time is required to make a diagnosis; sometimes a transient mental disorder is at play; sometimes a specific type of therapy is needed to support a diagnosis that may not be definitive. However, defining the diagnosis in child psychiatry is important for scientific research on mental disorders, for therapy and treatment, for the protection of mental health of children and adolescents. Diagnosis involves recognizing the mental disorder with its etiology, course and treatment. Other professionals besides child psychiatrists participate in multidisciplinary diagnostics: pediatricians, primary care physicians, school doctors, psychologists, speech therapists, educational rehabilitators, social workers, etc. Providing a diagnosis to a child enables appropriate multimodal therapy. This treatment approach includes pharmacotherapy, psychotherapeutic and supportive measures for the patient and their family, as well as social therapy. Treatment is sometimes multidisciplinary and involves other professionals (13).

Although the evidence base with regard to trauma therapy in children is not yet strong (mainly due to the unsatisfactory quality of many treatment studies) and treatment guidelines are inconsistent, the evidence clearly suggests that psychotherapy is the first treatment of choice. Medication may be used as a second line if psychotherapy is not available or if the child has a comorbid condition (28).

Conclusion

In childhood and adolescence, there is a delicacy in the approach to the diagnosis of mental disorders that primarily aims for adequate treatment. Various modalities of diagnosis and treatment are used in this process, with psychosocial methods (including psychotherapy) being the cornerstones.

It is known that parents play a crucial role in the treatment and rehabilitation of the child, but in their absence, primary caregivers become pivotal, while professionals and society are there to support them.

The importance of developing and rigorously testing preventative programs cannot be overstated. We suggest a widespread implementation of preventive measures based on interventions aimed at developing secure attachment in children with insecure attachment styles and risk factors such as childhood trauma, heredity and lower socioeconomic status, with an emphasis on early involvement of child psychiatric specialists in patients that show symptoms of psychosis. Special attention should be directed towards the destigmatization of children with mental health problems, providing them with support to realize their potential in life. By investing in the mental health of children, we invest in the future.

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Dva prikaza slučaja s neočekivanim ishodima nakon traume u djetinjstvu

Sažetak

Bowlby je razvio teoriju privrženosti, opisujući je kao trajnu emocionalnu povezanost među ljudima, koja se manifestira traženjem blizine skrbnika, osobito u trenucima stresa. Djeca prilagođavaju svoje ponašanje kako bi spriječila odvajanje od primarne figure privrženosti – osobe koja pruža podršku, zaštitu i njegu. Teorija privrženosti pruža povoljan okvir za razumijevanje naša dva slučaja i njihovih razvojnih putova.

Izvještavamo o dva slučaja žena, obje s obiteljskom poviješću psihijatrijskih bolesti i koje su doživjele rano odvajanje od roditelja, pri čemu su djed i baka igrali značajne uloge u njihovom odrastanju. Ova dva slučaja imala su radikalno različite ishode: jednoj je dijagnosticirana shizofrenija, a drugoj generalizirani anksiozno-depresivni poremećaj. Pokušavamo analizirati razloge za različite ishode ovih dvaju slučajeva kroz okvir brojnih objavljenih studija koje ističu zaštitne i rizične čimbenike za psihijatrijske bolesti, studije koje naglašavaju utjecaj traumatskih događaja u djetinjstvu na biološki, psihološki i socijalni razvoj djeteta, kao i kroz leću psihodinamičkih i teorija privrženosti.

Kroz analizu postaje jasno koliko je važna rana intervencija: kako kroz različite modalitete liječenja i preventivne mjere, tako i kroz osiguravanje uspješnih programa mentalnog zdravlja usmjerenih prema destigmatizaciji djece s problemima mentalnog zdravlja

Original article

The Role of Transgenerational Transmission in the Psychological Adjustment of Women with Breast Cancer

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Abstract

Introduction: Getting sick with cancer is a traumatic event for the affected person and can result with various psychological difficulties, which is further deepened by invasive methods of treatment. The previously experienced psychological trauma of a close person can influence the response of a person who is currently experiencing trauma, because the far-reaching power of posttraumatic consequences extends through a natural biological barrier far into the next generation (the so called "transgenerational impact of traumatization").
Objective: To assess the impact of transgenerational transmission on the development of PTSD in women with breast cancer.
Methods: The sample consisted of 120 women treated at the Oncology Department of the University Hospital Center Osijek, included in liaison psychiatric treatment. A detailed clinical examination with a psychiatric interview was used with the application of DSM-IV diagnostic criteria, a specially structured non-standardized questionnaire for the assessment of etiological factors and the Los Angeles Symptom Checklist of PTSD symptoms (LASC) for determining PTSD.
Results: No statistical significance was obtained between the presence of a family member with cancer and the average total score on the LASC in women with newly diagnosed breast cancer.
Conclusion: Although there was no correlation between the existence of a family member suffering from cancer and the development of PTSD in the test subjects, during psychotherapy procedures we observed the existence of symptoms that did not meet the criteria for establishing a diagnosis of PTSD, but could interfere with the development of various psychological responses. By including cancer patients in psychotherapy procedures, we can prevent the development of more severe psychological responses in the second generation, which due to the genetic influence in the inheritance of the disease will develop cancer, and the psychological disorder associated with it, and achieve a far reaching effect on strengthening adaptation mechanisms.

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Introduction

Breast cancer is a great stress for every woman, but there is great variability in the psychological responses of each individual. Although women nowadays have more treatment options, the psychological problems remain the same. The age at which cancer occurs, earlier emotional stability, personal coping skills and the existence of interpersonal support are of particular importance. Most researchers generally agree that the most important period during adjustment to cancer is the year following the diagnosis. It is a crisis in the patient's life, but most patients overcome it in a satisfactory manner, especially in the group of those with a good prognosis (1, 2). However, some adapt better than others. Psychological response depends on the sociocultural environment in which treatment is provided (treatment methods available, decision-making during treatment), psychological and psychosocial environmental factors, and medical and physical factors including disease stage, treatment, response and clinical course (3).

Many studies emphasize that people with better social support adapt better to the disease (4, 5). Social support is an important factor in the impact of stressful events on health, because social factors and interpersonal relationships can protect an individual from the dangerous consequences of stress (6, 7). Stress can mobilize a social network and elicit supportive behavior from it, but it can also have a negative impact, i.e. reduce help by worsening or destroying relationships. Sources of social support can be different. Nevertheless, most people receive the largest part of emotional support, warmth, belonging, material and instrumental support in the family (8).

As it is often emphasized, psychosocial support cannot be provided to all sufferers, therefore it is important to determine which persons are more at risk for adjustment difficulties, so that support can be directed to them (3).

The previously experienced psychological trauma of a close person through transgenerational transmission can affect the reactions of the person who is currently experiencing the trauma, leading to repetitions of earlier experiences and the development of various psychological disorders (9, 10).

The success of therapeutic interventions is often evaluated by the quality of life of patients. In the past, only the quantity of life (survival time) was measured. By prolonging the survival time of patients, they began to think about what the life of those who succeeded in this is like, whether this continuation of life is of sufficient quality and whether it justifies the costs of the treatment, which is supported by earlier research (11). Psychotherapeutic support with the support of family and friends significantly affects the quality of life of affected women and indicates the need to involve a psychiatrist in the treatment of patients who exhibit psychological difficulties in adapting to a physical illness.

If a child has a parent who is burdened by trauma, their early development of an attachment model can be disrupted, creating problems at the level of forming a healthy personality. If this is not corrected at some point in development, it creates a burden for the development of interpersonal relationships throughout life, because even new relationships can be burdened by the shadow of trauma from the past (12). Lack of self-esteem, experience of inferiority, shame, guilt and other complex experiences largely stem from the underlying feeling of pain.

Important developmental processes, the development of feelings of attachment, separation and individuation are especially disturbed, because a sick parent places the child in an atmosphere of high anxiety, depression and impulsivity. Some people have been traumatized multiple times, by the so-called cumulative trauma, worried about the future and security without enough strength to adapt (13, 14).

Our first contact with reality, with the world, is first affective, emotional and only then rational. Our affective memory, which contains all the emotions experienced in the past, colors the reality we encounter so that our picture of the

world is first subjective, which means somewhat distorted, due to the affective assessment of reality that we made before rational judgment. Affective judgment of reality predisposes a person to adopt and maintain affective attitudes that then determine, and in immature persons often dictate, human behavior. According to M. B. Arnold, it is a living memory of the history of the feeling (emotional) life of every person. Since it is always at our disposal, it plays an important role in the judgment and interpretation of everything around us, like the matrix of every experience and action (15).

It should be said that the very use of emotionally saturated words contributes to the affective judgment of reality. Such words have a strong impact on the recipient of the message so that they immediately take a certain attitude towards the conceptual content of the mentioned emotionally saturated words (for example "cancer").

Mental trauma is an extremely complex phenomenon, and it occurs when a person is confronted with the so-called a catastrophic experience, one that is far out of the ordinary (e.g. near death or complete helplessness). A traumatic event is easily recalled, with loss of control, a tendency to avoid it, causes overwhelming fear, mental pain, a sense of loss of hope for the future and actions of the autonomic nervous system. By destroying values and beliefs in the structure of a person, trauma destroys the relationship of trust between the person and their world. The patient no longer knows how to act in the fight for survival and develops chronic post-traumatic stress disorder, which leads to a reduced capacity for adequate family and parental functioning, which also affects the health of children, increasing the predisposition to the development of psychological disorders.

Patients transmit the fears they feel to the entire family, and daughters or sisters of patients who are at a higher risk of getting cancer may develop special fears of their own disease by resisting or worrying too much during the care of the sick woman (16).

For many years, "epigenetic inheritance" has been researched, i.e. the way in which accumulated experiences during the life of parents affect the genes of their offspring and what role this plays in the development of children. The term epigenetics consists of the words genetics and epigenesis, i.e. the development of a living being. Numerous studies in recent years have investigated the connection between experienced trauma and the impact on genes (17–21). However, in addition to affecting genetic transmission, trauma can lead to changes in the behavior of the next generation.

Aim of the study

To assess the role of transgenerational transmission on the development of PTSD in women with newly diagnosed breast cancer.

Patients

The sample consisted of 120 women treated at the Oncology Department of University Hospital Center Osijek, included in liaison psychiatric treatment.

The criteria for inclusion in the research were: female gender, aged 18–65, diagnosed with breast cancer, radiotherapy as part of cancer treatment, absence of serious physical illnesses, no history or current signs of psychotic disorders, completed elementary school as the lowest educational level, adequate opportunity to talk, signed informed consent for the patient.

The criteria for exclusion from the research were: non-acceptance of participation in the research according to the patient's informed consent, the presence of other serious physical diseases, pregnancy, breastfeeding, data on the previous or current existence of psychotic disorders, mental retardation, severe personality disorder, permanent personality changes, abuse of psychoactive drugs substances or alcohol in the last three months before the start of the study, previous participation in any form of psychotherapeutic treatment.

The patients were included in liaison psychiatric treatment (pharmacotherapy and psychotherapy). All applied psychiatric therapeutic procedures were limited to one year. Psychotherapy procedures were conducted once a week during the first two months of the study, and later according to the intensity of the clinical picture and the motivation of the test subjects for a total duration of one year.

Methods

Before the start of the research, signed informed consent for participation in the research was obtained from all respondents.

The research included:

- Detailed clinical examination with psychiatric interview with application of diagnostic criteria according to DSM-IV for mental disorders (22).
- The application of a specially structured non-standardized questionnaire, which was used to assess in detail the possible etiological factors in the occurrence of psychological disorders in the test subjects.

Psychological testing conducted by a psychologist that assessed the existence of PTSD symptoms using the Los Angeles Symptom Checklist of PTSD symptoms (LASC) in order to determine the existence of PTSD when entering the study, or the development of PTSD symptoms during the development of the disease at the end of the study. The tests were completed on day zero and after two months of research.

Results

1. *Demographic data of the sample*

The average age of the respondents was 56.52 years (minimum 24, maximum 65) with a standard deviation of 8.628.

According to the place of residence, 71 (59.17%) respondents were from the village and 49 (40.83%) from the city. Seventy-four (61.67%) respondents were married, and 33 (27.5%) were widows. Most of them had two children (53 respondents, i.e. 44.17%) or three or more children (34 respondents, i.e. 28.33%). Fifty-nine (49.17%) respondents completed primary school, and 49 (40.53%) completed secondary school. Sixty-one (51%) respondents had a family member with cancer, and 59 (49%) did not. Twenty (32.79%) respondents had a parent previously suffering from cancer, six (9.8%) had a spouse, 16 (26.23%) had more members of the immediate family suffering from cancer and 16 (26.23%) had a member of the extended family suffering from cancer (the term refers only to the first-degree relatives, i.e. the patient's aunt or grandmother) 14 (33.95%). Five respondents (8.2%) had a child with cancer.

2. *Analysis of the results according to the total value on the LASC and the family member suffering from cancer for the studied groups*

During the research, 10.83% of the subjects developed a clinical picture of PTSD (Table 1).

Table 1. Total Los Angeles Symptom Checklist (LASC) score according to a family member diagnosed with cancer

Family member diagnosed with cancer	Number of subjects	Average total LASC score for the first measurement	Maximum total LASC score for the first measurement	Average total LASC score for the second measurement	Maximum total LASC score for the second measurement
NO	59	20.88	56	22.4	55
YES	61	22.92	58	20.17	50

Table 2. Total Los Angeles Symptom Checklist (LASC) score according to a family member diagnosed with cancer

Family member diagnosed with cancer	Number of subjects	Average total LASC score for the first measurement	Maximum total LASC score for the first measurement	Average total LASC score for the second measurement	Maximum total LASC score for the second measurement
Parent	20	25.53	50	22.68	50
More members of the closer family	16	22.09	58	18	48
Member of the extended family	14	20.9	36	20.36	44
Child	5	27.6	39	27	43
Spouse	6	15.2	27	14.6	19
Nobody	59	20.56	56	22.24	55

The t-test for independent samples showed no statistical significance on the association between the average total score on the LASC and the presence of a family member with cancer for the first ($p<0.4630$) or second measurement ($p<0.3852$) (Table 2).

No statistical significance was obtained for the first measurement (Median test $p<0.1252$, Kruskal Wallis test $p<0.5176$) nor for the second measurement (Median test $p<0.1333$, Kruskal Wallis test $p<0.5973$) regarding the association of having a family member with cancer and the average total score on the LASC.

Discussion

The most significant information obtained from this research is the fact that 51% of the women examined had a family member who suffered from cancer.

In this paper, we do not observe the genetic influence in the development of cancer, although this information opens up the need to analyze this problem as well, but we focus on the observation that this fact had a significant impact on adaptation and the type of fears that developed after realizing that they too had the disease from a serious illness with which they had negative previous experiences.

During psychotherapeutic treatment, feelings and thoughts related to earlier traumatic experiences with regards to the illness, as well as suffering and dying experienced by people from their close family, were often processed. It was a superimposed trauma.

The criteria according to DSM-IV for the diagnosis of post-traumatic stress disorder (PTSD) include symptoms that are present at least one month after exposure to a traumatic event in the form of repetition of the traumatic event, symptoms of heightened arousal and avoidance behavior, and loss of psychosocial functioning (22).

Epidemiological studies indicate that 25–33% of people exposed to traumatic events, including cancer, develop PTSD (23), and the results of our research found that 10.83% of respondents showed PTSD during the entire study.

In cancer patients, defining the traumatic stressor is a problem. Within the multiple crises that the cancer experience is comprised of, it is difficult to single out and define a stressor. A stressor can be a diagnosis, the realization that the disease can be fatal, a long period of severe pain, symptoms and signs of the return of the disease, aversive actions or being in the room with a person who is dying or has died. In 1994, by redefining the criteria for a traumatic event, in the DSM-IV classification, contracting a life-threatening disease and the knowledge of one's own child developing a life-threatening disease were included as a stressful event that meets the criteria for a diagnosis of PTSD (22).

The severity, duration and proximity of a person's exposure to a traumatic event affect the development of PTSD, and the suddenness and threat to life and physical integrity are important causes of the development of the disorder, while the presence of pain and other physical symptoms correlate with intrusive thoughts (23).

Earlier research additionally suggests that PTSD leads to deficits in some social functions (reduced interest in returning to work, poorer work performance, inadequate parental role, participation in household activities and general social functioning), which additionally leads to the development of anxiety and depression (24).

The far-reaching power of post-traumatic consequences also extends through a natural biological barrier, namely far into the next generation (the so-called "transgenerational impact of traumatization") (25). Research on the descendants of people who lived through the Holocaust indicates that their descendants were more anxious (26), showed excessive narcissistic vulnerability, more aggression (27) and guilt for having survived (28).

Also, symptoms of chronic PTSD can develop in family members who were not born when the trauma occurred, as described in children of Vietnam veterans, who suffer from low self-esteem and reality testing, are hyperactive, unstable, aggressive, have difficulty coping with problems and own feelings such as fear, anger, guilt and mistrust. That is why they may have more problems in behavior, relationships with peers or in learning. In the families of traumatized persons, the percentage of intimate partner and family violence is higher, and exposed children may also develop psychological disorders as a result (27).

We are born with our unique, inherited combination of genetic potential, but perhaps even more than genes, a child's emotional development is influenced by the people with whom they are in closest contact. Thus, the so-called "secondary transmission of trauma", which is called indirect, secondary or empathic traumatization, occurs almost according to the type of transference identification, and happens to children, wives or caregivers of sick people, even to healthy children who play with the traumatized (29). Thus, the traumatic experience indirectly gains new victims.

A child in a family with a traumatized parent grows up with a distorted idea of roles and conflicts, is ashamed of themselves, carries a core of self-hatred that is difficult to undo later. Some are withdrawn and cautious so as not to be emotionally betrayed again, while others uncritically get involved in relationships and repeat disappointments, they are emotionally numb, unavailable and find it difficult to experience positive emotions.

Basically, communication is primarily damaged, so it is easy to enter into a vicious cycle of anxiety, frustration and withdrawal, until the feeling of complete exclusion. Silence and avoidance are most often the basis of relationship disorders, as well as the inability to show real feelings, which the traumatized person cannot bear, so the child has no one to ask for help and develop the protective feeling that a parent should evoke. Sometimes the parent overwhelms the child by excessively openly describing the traumatic event in minute detail, which terrifies the child.

For reintegration after trauma, an effective struggle for healing is needed, which is recognized by the establishment of a relationship of trust in oneself and the world, by offering healthy patterns of communication and behavior, which strengthen growth and progress. This requires a systematic and team approach, raising the level of awareness and understanding, and creating quality social support in the community.

The family, as a center within whose relationships all the child's psychological processes take place, represents a place of safety and support, a place of identification and the creation of relationships, and a place where numerous pathological events responsible for the subsequent development and functioning of each family member, especially the child, take place. The family is significantly influenced by cultural, ethnic and socioeconomic factors, all of which, together with the specifics and

expectations of each member within the family, form a whole, which is in a constant dynamic of change (30).

Such a milieu is responsible for the child's early development and relationships. The family is not only determined by the socioeconomic status, but also by the experience, knowledge and expectations of each member within the family, and each of the aforementioned factors models and influences each member (31). In this interplay of numerous factors, all psychological influences and problems take place in the earliest phase of the child's life. The child brings such experiences into all other relationships, and when assessing any pathological process, the assessment of early family relationships is an indivisible part, especially when the direct connection of these processes with acceptance or rejection, love and emotions is known (32).

Social learning theories, as well as psychoanalytic and ethological ones, each using different mechanisms, emphasize the importance of the dyadic relationship between the child and the mother or some other person who cares for them.

Bowlby's conception of attachment is particularly important, according to which a human being has an innate need to create strong bonds with people who provide a sense of protection and security and who are emotionally important to them, and the early experience of connection with parents shapes the development and quality of close relationships in adulthood. Unconditional trust in the availability of the object of attachment (parents) and their support are the basis of a stable person (30, 31).

In states of interruption or threat of interruption of these connections and the impossibility of realizing them again, there are strong emotional responses and a search for an object. Bowlby believes that the established connection and attachment to an important person stems from our need for security and protection. This bond is established after birth and develops in the relationship with the mother, and then with other important persons for us (father, brothers, sisters, partner) and lasts throughout life.

If the mother and child do not "fit" well, their relationship will be marked by a weak attachment or a bond filled with fear. Early losses (abandonment of the mother) are experienced as death. The experience of being "abandoned" (by the mother) in early childhood can be distorted as complete abandonment because we are bad and unloved, to which we respond with helplessness, guilt, anger, fear and horror. Therefore, early losses will affect the way of mourning subsequent losses and make it difficult to overcome separation and loss (32).

As attachment theory deals with social behavior, an individual's expectations about themselves, others and relationships, it also makes predictions about an individual's self-esteem and ability to form close relationships.

Parents remain permanent components in the attachment hierarchy, but over time they occupy a secondary position in terms of importance, and partners become the most important objects of attachment.

The way people perceive existing social support can strengthen their belief that others care about them and value them, and can also increase their self-esteem and confidence in their own ability to cope with future stress (33, 34).

Symptoms of anxiety and depression are present in various psychological disorders and often overlap, with comorbid conditions that are difficult to distinguish, and timely diagnosis is of theoretical, diagnostic and therapeutic importance (33, 34).

Establishing a diagnosis is complicated by the fact that cancer is not an acute and discrete event, but an experience of strong, repeated traumas of indefinite duration. Therefore, the sufferer can show symptoms of PTSD at any time from diagnosis, during treatment and recurrence of cancer which also leads to symptoms of stress reaction in sufferers (35).

These observations suggest the need for continuous reassessments of the diagnosis throughout the course of treatment, and according to DSM-IV, although PTSD symptoms

usually appear within the first three months after the trauma, they may be delayed for months, even years.

PTSD in women who have had a family member with cancer can be reactivated PTSD when the old clinical picture of PTSD reactivates, but it can also manifest as a new disorder. Second-generation PTSD, i.e. reactivated PTSD, lasts longer and often remains as strong as it was at the beginning. Exposure to trauma, in the second generation, exposes a latent sensitivity that was not triggered by ordinary life events. In the second generation, there is also a deepening of the experience of failure, because that generation was raised to compensate for the damage experienced by their parents, and this experience is often present in the treatment of cancer. Recovery can also be hindered by excess secondary gains stemming from an overprotective parenting relationship, which is well documented for parents of Holocaust survivors (36).

In addition, as it is a well-known fact that breast cancer occurs more often in the daughters of affected women, we should also bear in mind the transgenerational transmission of the impact of the current trauma on the next generation (i.e. the daughters of the examined women) and the prospective impact of current psychiatric procedures and their impact on reducing severe psychological reactions in the future.

The chronification of the PTSD process and malignant forms usually occurs in those women who are not satisfied with their physical or mental condition and self-care (11), and the contents that were processed during the psychotherapy process indicate exactly that.

There are frequent repetitions of various traumatic experiences experienced both during diagnostic and therapeutic procedures, which do not have to meet the criteria for establishing a diagnosis of PTSD, but can interfere with the development of psychological responses, disorders or just the intensity of anxiety and depression.

Affected women often transfer their own fears to their children, changing their ways of responding and intensifying anxiety and depression. Psychotherapeutic treatment has far-reaching effects and can lead to major changes in relationships in the entire family of the woman being treated. Positive therapeutic advances (through insight and changing responses and leading to changes in the attitudes and reactions of sick children) can have an impact on the next generation as well and help children (if they get sick in the future) in their psychological adaptation and fight against this serious disease. Recent research on the transmission of transgenerational trauma as a transmission of resistance, and not only as a transmission of problems or psychological pathology, points in this direction, emphasizing that earlier collective trauma can also result in the strengthening of some positive family values (37).

The transgenerational transmission of emotions in cancer is important, but still insufficiently researched and it is a challenge for future research, opening up many complex questions.

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Guarantor of the study: SA, VK
Provision of study materials or patients: SA, VK

Utjecaj transgeneracijskog prijenosa u psihičkoj prilagodbi žena s karcinomom dojke

Sažetak

Uvod: Obolijevanje od karcinoma predstavlja traumatski događaj za oboljelu osobu i može rezultirati cijelim nizom psihičkih poteškoća, a invazivni načini liječenja dodatno ih produbljuju. Ranije proživljena psihička trauma bliske osobe može utjecati na odgovor osobe koja u sadašnjosti proživljava traumu jer se dalekosežna moć poslijetraumatskih posljedica proteže i kroz prirodnu biološku prepreku daleko u sljedeći naraštaj (tzv. pojam "transgeneracijskog utjecaja traumatizacije").

Cilj: Procijeniti utjecaj transgeneracijskog prijenosa na razvoj PTSP-a kod žena oboljelih od karcinoma dojke koje su u obitelji imale člana oboljelog od karcinoma.

Metode: Uzorak se sastojao od 120 žena liječenih na Odjelu za onkologiju KBC Osijek uključenih u liaison psihijatrijsko liječenje. Korišten je detaljan klinički pregled s psihijatrijskim intervjuom uz primjenu DSM-IV dijagnostičkih kriterija, posebno strukturirani nestandardizirani upitnik za procjenu etioloških čimbenika i LASC za utvrđivanje PTSP-a.

Rezultati: Nije dobivena statistička bitnost o povezanosti postojanja člana obitelji oboljelog od karcinoma i prosječne ukupne vrijednosti na LASC-u.

Zaključak: Iako nije dobivena povezanost postojanja člana obitelji oboljelog od karcinoma i razvoja PTSP-a kod ispitanica, tijekom psihoterapijskih postupaka je uočeno postojanje simptoma koji ne zadovoljavaju kriterije za postavljanje dijagnoze PTSP-a, ali mogu interferirati s razvojem raznih psihičkih odgovora, poremećaja ili samo jačine anksioznosti i depresivnosti. Uključivanjem oboljelih od karcinoma u psihoterapijske postupke, možemo prevenirati razvoj težih psihičkih odgovora kod drugog naraštaja, koji će zbog genetskog utjecaja u nasljeđivanju bolesti tek razviti karcinom i uz njega vezan psihički poremećaj te dalekosežno djelovati na jačanje mehanizama prilagodbe.

Original article

Posttraumatic Growth in War Captives

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Abstract

Numerous studies have investigated the various consequences of traumatic experiences during the war. The most significant disorder that occurs as a result of war traumatization is posttraumatic stress disorder, in addition to which other psychological disorders often can occur. In the last few decades, the number of studies researching the occurrence of posttraumatic growth as a positive outcome of trauma, including that of war veterans, has been growing. Among war veterans, prisoners of war stand out for the intensity of their traumatic experience but also for the appearance and intensity of the pathological outcomes of the trauma. Studies show that in this group of veterans, posttraumatic stress disorder and comorbidity disorders often persist for decades after their release from captivity. There is not much research about the positive outcomes of trauma in these particularly vulnerable populations, and this paper is a review of several different studies, the results of which show that posttraumatic growth is possible even after challenging traumatic experiences such as war captivity.

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KEYWORDS: posttraumatic growth, posttraumatic stress disorder, war trauma, captivity

Introduction

Research on war trauma in veterans and its consequences in large numbers refers to the negative, pathological consequences of exposure to traumatic events in war. Many of them also refer to research into the specifics of the traumatic experience in captivity. The results of the study show that the consequences of wartime captivity on prisoners of war (POWs) are manifested in more significant and long-term psychological consequences of this type of trauma compared to the consequences of veterans who were not prisoners. In many studies, exposure to traumatic events in captivity has been shown to have severe implications for mental and physical health, quality of life and functioning in different areas of life (1, 2). Studies have confirmed a higher frequency of posttraumatic stress disorder (PTSD), as well as other psychological disorders, in veterans who were also prisoners in camps compared to veterans who were not prisoners of camps but had experienced combat trauma (3,4). Studies about the long-term negative effects of trauma show that former prisoners of camps have significantly worse consequences for health and everyday functioning even several decades after leaving the camps (5, 6).

A variety of different factors, in addition to the severity of the traumatic experience, affect the occurrence of PTSD and its persistence (7). It is well known that after exposure to traumatic events, not all people will develop significant pathological outcomes of trauma, of which PTSD is undoubtedly the most important, and that some people are more resistant to traumatic events and situations compared to others (8, 9). In addition, after a traumatic experience, there may appear positive consequences called posttraumatic growth (PTG). This complex phenomenon refers to positive changes in traumatized persons, which include changes in different dimensions and areas of life. Studies about the positive consequences of trauma enable a better understanding of the traumatic experience in the posttraumatic period. It represents an essential view of trauma and various responses to traumatic events (10).

Although interest in the positive consequences of exposure to traumatic events has grown significantly in the last few decades, there is not much research about posttraumatic growth in these specific and particularly vulnerable populations of veterans, such as camp prisoners. The aim of this paper is a brief overview of the studies about the posttraumatic growth and resistance of severely traumatized war veterans. With the objective, we emphasized the importance of a different view of psychotrauma, not only through the view of negative, pathological consequences but also through how we could better understand the consequences of psychotrauma and notice the possibilities of preventing pathological outcomes and encouraging more positive outcomes.

Materials and methods

We exhaustively examined the literature published earlier using PubMed, Web of Science, Scopus and Google Scholar. Our search criteria focused on English-language articles using specific keywords, combinations and related terms; see the literature search process flow diagram in Figure 1.

The first identification included the search strategy: (prisoners of war OR veterans in captivity) AND (resilience, posttraumatic growth, OR positive consequences of trauma), and we got 14811 results. Before screening, we removed duplicate records (n = 13,897). Most were citations or illegible (n = 38), and some were not in English (n = 75). We screened 801 records and excluded 676. We sought 125 records for retrieval and we successfully retrieved 89 of them. We assessed 36 records for eligibility, but some were excluded because they had inadequate data (n = 19). We summarized our results of 17 records in Table 1.

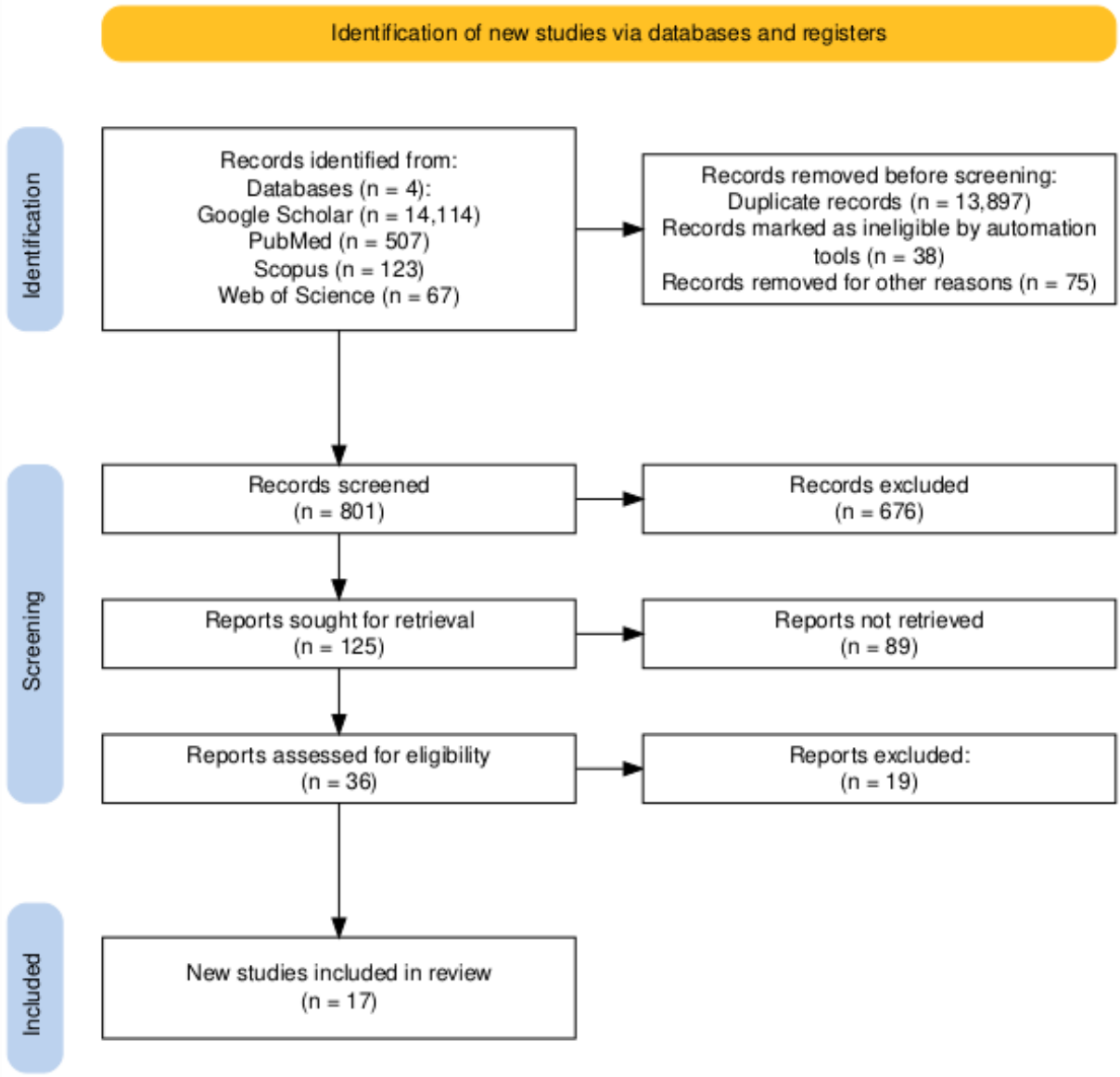

Figure 1. Flow diagram of the literature search process

Posttraumatic growth

Posttraumatic growth is a term that refers to the positive consequences of traumatization. It denotes the transformation of an individual exposed to a traumatic experience towards an entirely new way and a higher level of psychological functioning compared to the pre-traumatic period (10, 11). It is a complex, often long-term, multi-year process that is the result of suffering, pain and psychological struggle. It is believed that ruminations resulting from traumatic experiences lead to constructive processing and cognitive restructuring, the consequence of which is posttraumatic growth, and according to this interpretation, posttraumatic stress (PTS) and PTG are positively related (12).

Only when a person experiences severe distress and an internal struggle to overcome pain can radical positive changes eventually occur after cognitive restructuring. According to other interpretations, PTS and PTG are negatively correlated, and PTG is a means of neutralizing pathological outcomes; that is, the higher the PTG, the lower the pathological outcomes of the traumatic experience (13). In this context, PTG is the mechanism of coping with trauma.

Table 1. Posttraumatic growth and resilience in camp captives

Authors	Examinees	Research objects	Results
Singer, 1981	Former prisoners of the Vietnam War	Trauma, personality, stress disorders, posttraumatic psychology	Despite severe traumatization, some detainees are more resistant than others and have fewer pathological outcomes.
Segal et al. 1976	Without	Review of the POW literature	The adaptive response to captivity can evolve into PTG.
Nardini, 1952	Prisoners in Japanese camps in World War II	Intensity of trauma; predictors of surveillance	Factors that contribute to the survival of severe trauma are strong motivation to live, emotional stability, a sense of humor, a sense of obligation for others, courage, opportunism and military experience.
Sledge, et al. 1980	Former prisoners in the Vietnam War	The intensity of trauma, the intensity of distress, and PTG	Positively correlated PTG with the level of psychological suffering and physical injury (The most significant in the field of self-concept, understanding others and life priorities).
Feder et al. 2008	Former prisoners in the Vietnam War	Intensity of traumatic experience (length of imprisonment), optimism, religiosity, social support, age at the time of research as predictors of PTG	There is a positive correlation between trauma intensity, optimism and PTG, and there is a positive correlation between positive religious confrontation and PTG, most significant in the dimension of spirituality, increase in faith, and sense of purpose in life. There was no significant correlation between psychopathology and PTG.
Segovia et al. 2012	Former prisoners in the Vietnam War	Predictors of resilience (PTSD, optimism, age at time of confinement, military rank, psychopathic and antisocial personality traits, length of confinement and solitary confinement)	Optimism, a more mature age and officer status during captivity were the most significant positive predictors of resilience.
Solomon et al. 1999	Detainees from the Yom Kippur War and a control group of veterans	Positive and negative psychological consequences (life satisfaction, symptomatology, social relations, view of selves, interest in family) of war captivity, and the contribution of specific stressors and coping in captivity and at homecoming to positive and negative changes.	Detainees had more significant positive than adverse outcomes but without a significant difference compared to the positive outcomes of the control group. Severe traumatization was a resource for personal growth.
Erbes et al. 2005	Former prisoners in the Vietnam War and Korean war	Predictors of PTG (trauma, personality, history of development, social support, PTSD)	Positive affect, PTSD and social support were significantly correlated with the total PTG. A significant correlation of other variables and individual dimensions of PTG was also recorded.
King et al. 2015	Vietnam ex-POWs	Sociodemographic features, training, social support, traumatic experience	A more mature age, a higher level of education and married life during captivity and physical torture contribute to positive adjustment during life.

Table is continued on the next page.

Table 1. Posttraumatic growth and resilience in camp captives (continued)

Ursano et al. 1986	Former Vietnam POWs	Pathological outcomes of trauma and well-being	Found that repatriates who reported having benefited from their experience had been in captivity for a significantly higher average number of days; the authors found no differences in psychiatric diagnoses between the benefited and non-benefited groups.
Sledge et al. 2018	Former Vietnam POWs and a control group of combat veterans	Positive and negative consequences of captivity	Prolonged confinement positively correlated with personal growth and negative consequences.
Andersen 1975	Former Vietnam POWs	Traumatic experience and PTG	Prolonged confinement positively correlated with personal growth and growth in relationships with others.
Solomon and Dekel, 2007	Israeli ex-POWs and a control group of combat veterans	Predictors of positive (PTG) and negative consequences (PTSD); correlation of PTSD and PTG	Ex-POWs reported higher growth than controls, and participants who reported intermediate levels of PTSD symptoms reported the highest posttraumatic growth.
Dekel et al. 2011	Israeli former prisoners of the Yom Kippur War	predictors of posttraumatic growth (PTG) and posttraumatic stress disorder (PTSD).	Loss of control and active coping during captivity were two factors that predicted both PTG and PTSD. Self-controllability predicted PTG, while sociodemographic factors predicted PTSD when controlling for PTSD and PTG. The results highlight the complex relationship between beneficial and pathogenic trauma outcomes by showing that while some precursors are shared, others are not.
Dekel et al 2012	Israeli former prisoners of the Yom Kippur War and controls	Association between PTSD, other psychopathologies and PTG;	Individuals with PTSD reported higher PTG levels across times than those without PTSD; relations of PTG to depression and anxiety were not significant
Lahav et al. 2016	Ex-POWs and matched a control group of non-POW combat veterans of the Yom Kippur War	The mediating role of dissociation in the relation between PTG and World Assumptions (WA)	Compared to controls, ex-POWs endorsed higher levels of dissociation, PTG and negative WAs. In comparison to ex-POWs without PTSD and controls, those who had PTSD endorsed negative WAs and a greater degree of PTG and dissociation. WAs were negatively correlated with dissociation and positively correlated with PTG. PTG was positively correlated with dissociation.
Zerach et al. 2013	Israeli ex-POWS and combat veterans of the Yom Kippur War	Relationship between PTSD and PTG and resilience	PTG is positively correlated with PTSD symptoms based on the negative link found between PTG and resilience.

According to some studies, PTG and the negative consequences of traumatization are mutually independent and can take place simultaneously without significant correlation (14). Two concepts of PTG are distinguished in the studies: real posttraumatic growth and

illusory growth. In doing so, illusory PTG refers to short-term, adaptive mechanisms that enable immediate, short-term overcoming of trauma. At the same time, real PTG means fundamental changes and growth resulting from long-term confrontation and adaptation (15).

PTG can include various changes, such as personal growth, including increasing personal strength, improving relationships with other people, experiencing the world differently, appreciating the value of life and new life opportunities, and changes in the spiritual and religious spheres (16, 17).

Several different factors can affect whether a person will have posttraumatic growth after a traumatic experience or not. PTG shares most predictors with posttraumatic stress disorder, which is recognized as the most significant pathological outcome of trauma. Thus, the possibility of PTG will depend on personality traits, maturity, education, marital status during the traumatic experience and social support after the trauma experienced. In large part, the possibility of PTG is determined by the type and intensity of the traumatic experience (11). In addition, according to research, PTG is not even possible without pathological consequences, the most significant of which is PTSD, so PTG also depends on the negative consequences of the traumatic experience. A meta-analysis of 77 cross-sectional studies showed that PTG is significantly correlated with PTSD symptoms, which are symptoms of evasive behavior and intrusive thoughts about the traumatic experience (18). Considering the different results of research into the relationship between PTSD and PTG, some authors conclude that it is probably the influence of applied research methods, and in some studies, too little time flows from exposure to traumatic events. Research has shown that personality traits such as optimism, extroversion and opportunism enable a different view of traumatic experiences. For example, optimism makes it possible to find meaning in a traumatic experience and, consequently, posttraumatic growth (19, 20).

The authors of the research emphasize that growth occurs in those people who perceive the traumatic experience as a new opportunity in life, as the possibility of experiencing a higher level of adaptation after the traumatic experience, and it is difficult for those people who are fixated on the negative consequences of traumatization (21, 22).

It was observed that, in addition to the fact that people can experience numerous negative consequences of traumatization, many people do not have significant consequences; that is, they show resistance to traumatic experiences (23). At the same time, it is emphasized that resistance is not the same as PTG because it excludes the development of significant adverse, pathological outcomes of trauma (8, 24). Those who retain mental stability after exposure to a traumatic event and return relatively painlessly and quickly to the pre-traumatic level of functioning are considered resistant persons. Some authors believe that cognitive processes that protect against distress and enable PTG are the basis of resistance (4, 25). In addition to investigating factors that can lead to different outcomes of traumatization, research also analyzes the relationships between negative and positive consequences of trauma and the relationships between resistance and negative consequences of trauma and PTG (26).

War captivity

Numerous studies about the war captivity and its consequences confirmed that this form of traumatization stands out in many ways and that it represents one of the most difficult human experiences in terms of its specifics (27). When talking about war veterans who experienced this form of traumatization, it is emphasized that after exposure to combat action, which is also a trauma of high intensity, camp captives are exposed to a completely different type of traumatization (2). Detention is characterized first by duration. Most often, it is a long, and in many cases, multi-year stay in the camp, in conditions of isolation from the outside world, lack of information and communication with neighbors (28).

During their captivity, captives are exposed to repeated and continuous traumatic events and to living in inhuman and inappropriate conditions. Often, captivity is characterized by inappropriate hygienic conditions, lack of water, food, medicine and adequate medical care. Staying in the camp almost regularly includes various forms of torture and mistreatment, either psychological or physical. Beating, sexual abuse and being in solitary confinement are only part of the everyday life experienced by many captives of the camp (29, 30).

In addition to personally experiencing various traumatic situations, captives often witness mistreatment by others (31, 32). What distinguishes traumatization in captivity from that on the battlefield is, among other things, the specific relationship among captives, that is, the interpersonal relationship aimed at a person. Within this relationship, the captive is entirely dependent on other captives, and there is a feeling of powerlessness and loss of control over the situation in which they find themselves and complete uncertainty about what they will have to endure in captivity until they leave captivity. Research emphasizes that both release from captivity and adaptation to regular civilian life are often highly stressful periods, especially if the captivity lasts a long time (5).

Predictions of resilience and posttraumatic growth among camp prisoners

Personality traits, sociodemographic factors, social support, and religiosity

Although there are many studies about the phenomenon of posttraumatic growth in the veteran population, there are significantly fewer that talk about the positive consequences of trauma in veterans who were captives of the camps. When discussing the effects of traumatization, particularly severe traumatization resulting from years of imprisonment, it is essential to acknowledge that the traumatic experience can produce diverse outcomes that are not always detrimental, but these depend on numerous factors. It was also noted that there are many resistant captives for whom serious, long-term pathological effects of traumatization did not occur (33).

Researchers investigated posttraumatic growth in severely traumatized veteran populations from various perspectives. Research that included prisoners of war in camps where conditions were often brutal and the captivity lasted a long time showed that a person could survive even in such highly traumatic situations and get different benefits. These experiences taught many people incredible personal strength and the comprehension that they underestimated their capacity to endure extreme stress. For many, the captivity situation they found themselves in resulted in drastic transformations, altering their perception of themselves, their lives and their priorities, all while employing various defense mechanisms such as humor, denial and reality testing. Some captives found solace in their firm resolve to endure the horrors of captivity (2, 34). Many of them also stated that they perceived their release from captivity as a new birth and an opportunity for a new beginning. An analysis of the experiences of many of those who survived captivity in World War II resulted in a way of confronting the trauma of captivity and recognizing the most common models of surviving captives' behavior. The authors assert that specific behaviors and personality traits in individuals who survived Japanese captivity in the Pacific region likely played a significant role in their survival, considering that 60 percent failed to survive (35).

The captives in Vietnam also exhibited characteristics that helped them survive complex and long-term captivity. Researchers found strong motivation to survive, higher intelligence, emotional stability, moderate emotional sensitivity or insensitivity, empathy and caring for others, a sense of humor, opportunism, controlled fantasizing, designed and successful resistance, courage and military experience as predictors of survival (36, 37). Other studies agree with these findings: people who used more ego defense mechanisms, like rationalization, denial, humor and a strong belief

that things would work out for the best, survived captivity more easily (38).

Other research involving former camp prisoners also demonstrated that personality traits could influence the level of distress after traumatization, as well as the potential for positive outcomes from exposure to traumatic events. Thus, in Vietnamese captives, optimism positively correlates with PTG, and the authors comment on the two-way relationship between optimism and the consequences of traumatization. They believe those with a higher level of optimism simultaneously had the opportunity to process and positively reshape a challenging traumatic experience. On the other hand, they think that because they were well-trained and prepared for even the most difficult experiences, their training contributed to their development of optimism, which led them to PTG (37).

The authors of the study on Vietnamese veterans, which tested resistance, also emphasize the importance of optimism. Over 37 years after confinement, almost 60 percent of those included in this study did not receive a diagnosis of psychiatric disorder, which was a criterion for viewing them as resistant (39). The variables examined were age at the time of confinement, military rank, time in solitary confinement, antisocial and psychopathic personality traits, symptoms of PTSD after release from detention and optimism. Researchers found that the most significant predictors of resilience were a more mature life, optimism and less expectancy of the time of confinement. Other research also confirms that extraordinary insight, self-confidence, optimism and greater capacity for growth are positive predictors of PTG (4,40) and demonstrated that the absence of active confrontation and weaker emotional control contributed to the adverse outcomes of traumatization (41).

Religiosity and spirituality are important aspects of life that, at the same time, represent the dimensions of a possible PTG. Some studies involving detainees have investigated the relationship between religiosity and PTG. The case of camp captives also demonstrated that religiosity, as a stress-confrontation strategy, enhances spirituality and fortifies faith. However, this research did not study social support as a significant posttraumatic predictor of both the negative and positive consequences of traumatization (37). A twelve-year longitudinal study involving American veterans and former camp prisoners found a positive correlation between total PTG and social support and the growth of spirituality. They also recorded significant growth in interpersonal relations and found a positive correlation with social support (42).

Some studies recognize life stressors, the transition into old age, and the retirement phase as predictors of negative psychological outcomes. They investigated how social support for former captives in old age and a positive view of the war experience can contribute to positive changes, like adaptation to normative stressors later in life (28).

Some sociodemographic factors have proven to be significant, not only in terms of the resources at a person's disposal in traumatic situations but also in subsequent life stressors. It was concluded from the analysis of the subjects who were Vietnamese captives and who were severely traumatized and exposed to torture that a more mature age, a higher level of education, and married life during captivity can, on the one hand, represent a protective factor in the context of the development of negative consequences of traumatization and, on the other hand, contribute to positive adaptation in the long-term during life (43, 44).

Intensity of traumatic experience

Feder and colleagues examined several factors in the relationship with PTG among Vietnamese veterans and former camp captives, including the connection between the intensity of the traumatic experience and posttraumatic growth. The length of imprisonment determined the intensity of the traumatic experience, which positively correlated with PTG. According to them, PTG significantly increased in those captives who endured a more extended period of captivity and thus experienced more

significant, longer traumatization (37). Moreover, in another study involving Vietnam veteran camp detainees, the correlation between length of confinement and well-being was positive (38, 45).

The research that analyzed the level of psychological suffering and physical injury also found a positive correlation between PTG, the subjective feeling of well-being and the intensity of trauma measured through the view of experiencing traumatization during captivity. The respondents had undergone highly traumatic experiences, and the authors concluded that the recorded growth, which includes feelings of personal benefit from these challenging experiences and a sense of mercy, could be interpreted as a defense mechanism, with denial serving as the foundation for this growth. Most subjects suffered severe physical consequences because of their highly traumatic experiences. PTG was recorded in the areas of personal growth, a better understanding of oneself, the creation of new priorities in life and the improvement of relationships with other people, and was observed in significantly more prisoners than in the control group of subjects of veterans who were not prisoners of the camps (35).

The study from 2018, which is a continuation of the previous research by the same author, also confirms personal growth, specifically in terms of self-concept and interpersonal relationships. Compared to the veterans in the control group, they observed a rise in the detainees' self-confidence and self-esteem and a significant increase in their empathy, concern for others, understanding of the importance of interpersonal relationships, and faith in others. Growth in relations with other people was most evident in the relationships with veterans and other detainees, and many detainees emphasized the feeling of creating a new family. These relations with veterans were also significant for the control group of veterans who were not prisoners of the camp. Simultaneously, a growing sense of love and the significance of family emerge. This type of growth was significantly greater in the group of detainees than in the control group of veterans. A smaller number of detainees also report growth in the field of work functioning, considering captivity a unique experience in a positive sense. This applies to those provided with preferential opportunities for educational advancement in a military career after imprisonment. Simultaneously, the growth in this area of functioning pertains to individuals who were in captivity for a relatively short period, typically around eight months. Those who have spent several years in captivity express negative consequences, such as a sense of lost time due to challenges in returning to work and the loss of new knowledge and skills. Emotional exclusion and difficulties expressing feelings were more pronounced among the camp's prisoners. At the same time, symptoms of increased irritability and a lack of compassion dominated the control group of veterans. Somatic disturbances were also more prominent among the camp inmates, which was a direct consequence of the conditions in captivity (46).

A study involving Vietnamese veterans who spent six or seven long years in captivity revealed that during captivity, the detainees developed an exceptional connection, and challenging experiences led to growth in the areas of personal growth and interpersonal relations. The same study reports that while many captives experienced growth in their interpersonal relationships, others struggled to comprehend the life challenges after confinement. A good number of them remained connected with other detainees, but their families suffered, and many had their marriages broken up (47).

King et al. conducted a longitudinal study at various points in time, ultimately 30 years after leaving the camp, to analyze the impact of extreme traumatic experiences on the positive and negative consequences of severe traumatization (43).

Solomon et al. also discussed the long-term positive outcomes of a severe traumatic experience during confinement. Eighteen years after their imprisonment, the subjects had severe physical and psychological difficulties. Compared to veterans who were not prisoners

of war and had only combat experience, they have a higher number of positive outcomes. Surviving severe physical torture during confinement is, in some ways, a resource for the growth of personal strength and further life stressors (41).

Relationship between negative and positive captivity outcomes

The results of research dealing with the relationship between the pathological outcomes of traumatization and PTG are different and indicate the complexity of this relationship. In some cases, this correlation is positive. In some studies, negative and positive consequences are independent. Some findings suggest that medium-intensity distress predicts PTG (37, 41). The authors analyzed the relationships of pre-traumatic, peritraumatic and posttraumatic factors with positive and negative trauma outcomes in a longitudinal prospective study that followed Israeli veterans for 30 years. The results showed that PTG and PTSD share some predictors but not all, and the authors emphasize the complexity of these relations. Some pre-traumatic factors predicted only PTSD but not PTG, whereas self-control was only associated with PTG. Trauma exposure, loss of control and active confrontation were the only common predictors of PTSD and PTG (48).

Solomon and Dekel's prospective study looked at the positive and negative effects of trauma on camp prisoners and a control group of veterans over 30 years old at different times. It was discovered that veterans who had been prisoners in camps had more harmful effects, such as more PTSD and a stronger PTG 30 years after the Yom Kippur War (41).

Dekel and colleagues, in a longitudinal study during the 17 years after confinement, analyzed the relationship between PTSD and PTG, with PTG being assessed at two and PTSD at three points in time later; PTG predicted initial PTSD. In the same study, they also addressed the relationship between anxiety, depression and PTG, and the results showed that these relationships were not significant (49).

Research confirms that camp captives use dissociations as a defense mechanism in conditions of detention when escape is not possible, changing their perception of reality and minorizing the objective situation (27). Lahav et al. investigated the influence of oscillations that developed after the traumatic experience on the later development of posttraumatic growth in prisoners of war. They also examined whether real or illusory growth was a defense mechanism. In addition to PTG, Lahav's research has also examined the world experience, specifically the world assessment (WA), using the world assessment questionnaire in both the detainee and control groups, as well as PTSD. When it came to captives, there was a higher PTG, a worse assessment of the world, and more pronounced dissociations compared to the control group. Dissociations play an intermediate role in the relationship between PTG and WA. In other words, negative WA is associated with more dissociations and a larger PTG. PTSD was more prevalent in detainees than in the control group, and it was associated with a more negative perception of the world, more pronounced dissociations and greater PTG (40).

Zerach et al. analyzed the relationship between posttraumatic stress, resilience and posttraumatic growth at several points in time in a longitudinal study involving Israeli veterans from the Yom Kippur War. They also examined anxiety and depression and found that camp captives had significantly higher rates of PTSD, anxiety and depression than the control group of other veterans. The results demonstrated that resistant subjects did not develop PTSD or PTG. There was a significant correlation between PTG and PTSD, whereas the correlation between PTG and anxiety and depression was less significant. Simultaneously, the experienced trauma and PTSD have a substantial correlation with anxiety and depression. The authors conclude that both former camp captives and control group veterans who did not experience captivity can manifest salutogenic resources either through resistance or through PTG (26).

Family dynamics change during captivity and separation from the family, mainly when the captivity is long-term, and many captives

describe negative consequences for the family and their place within it. Distance, a sense of loss of role and importance in the family, and marital relations led to the breakup of the family and divorce for numerous former captives, who felt as though they had lost valuable time during their captivity. However, as time progresses, the second part of prisoner experiences growth through enhanced relationships, a heightened sense of family appreciation and a deepening sense of love. Personal growth compensates for lost time, suffering, family, business, social losses and stigmatization (46). In general, although they experience growth in many areas, the dominant feeling in captives is lost time, the inability to make up for it and the feeling that they will always lag behind those who did not have this loss of time. Those captives who were more successful in work, education and careers before captivity had a greater sense of loss, and it was a laborious and long-term process of establishing a new everyday life after captivity (5).

Conclusion

The results of research into the consequences of traumatizing war veterans during captivity, which is considered one of the most difficult human experiences, showed that in addition to severe pathological outcomes, it is also possible to experience positive outcomes even after such severe traumatic experiences. The development of positive consequences of trauma, which we call posttraumatic growth, is influenced by a whole series of factors. To better understand psycho-trauma to prevent or mitigate unwanted outcomes and enable posttraumatic growth, further research regarding resistance and posttraumatic growth and their predictors is necessary.

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Posttraumatski rast u ratnih zatočenika

Sažetak

Uvod: Brojna su istraživanja pokazala da je zatočeništvo često ekstremno traumatsko iskustvo. Karakterizirano je izloženošću zatočene osobe dugotrajnom i ponavljanom traumatiziranju, odnosno nizu traumatskih događaja i situacija različitoga karaktera. Zbog svojih osobitosti, zatočeništvo se smatra jednim od najtežih ljudskih iskustava. Dobro je poznato da boravak u zatočeništvu dovodi do značajnih negativnih posljedica po psihičko zdravlje, od kojih je najznačajniji razvoj posttraumatskoga poremećaja, ali i drugi psihički poremećaji. Narušeno psihičko zdravlje dovodi i do disfunkcionalnosti u različitim područjima života te značajnog pada kvalitete života. Osim patoloških posljedica izloženosti traumatskim događajima, istraživanja su potvrdila da različiti oblici traumatiziranja mogu dovesti do pozitivnih posljedica.

Cilj: Cilj ovoga rada je pokazati da je posttraumatski rast, odnosno pozitivne promjene nakon traumatskoga iskustva, moguć i nakon najtežih traumatskih iskustava, kao što je to iskustvo ratnoga zatočeništva.

Materijali i metode: Provedena je opsežna pretraga literature na PubMedu i Google Scholar-u. Koristeći ključne riječi, srodne pojmove i različite kombinacije istih, odabrani su najrelevantniji radovi koji se bave pozitivnim posljedicama psihotraume, odnosno zatočeništva.

Rezultati i zaključak: Kod osoba koje su iskusile ratno zatočeništvo, iskustvo traume koje je po mnogočemu specifično i koje dovodi do ozbiljnih negativnih psihičkih posljedica, može doći i do pozitivnih posljedica traume. Istraživanja ukazuju da pozitivne posljedice ne umanjuju patološke ishode traume, a na razvoj pozitivnih promjena utječu različiti čimbenici.

Original article

Intimate Partner Violence Among Female Croatian University Students

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Abstract

Aim: Intimate partner violence (IPV) among university student populations is an important public health challenge with persistent negative consequences. This study aimed to explore the prevalence of IPV among female Croatian university students and to investigate possible risk factors for its occurrence.
Methods: This cross-sectional questionnaire study was conducted on a convenient sample of undergraduate and graduate female university students at the University of Osijek in April 2015.
Results: The overall prevalence of all forms of IPV in the studied population was 64.3%. Physical violence was reported by 3.3%, psychological violence by 59.8%, controlling behavior or coercive control as a special form of psychological violence by 40.2%, sexual violence by 4.8%, and economic abuse by 9.6% of female students. Sexual violence and economic abuse were more frequent among graduate female students ($p<0.001$ and $p=0.010$, respectively). Female students who repeated the year of study were more frequently exposed to sexual violence ($p=0.005$). Overall IPV was more frequent among female students who studied within the field of humanities ($p=0.045$). Female students who studied within the field of humanities were more frequently exposed to physical violence, psychological violence, sexual violence, and economic abuse ($p<0.001$, $p=0.006$, $p<0.001$, and $p=0.033$, respectively).
Conclusion: IPV was highly prevalent among female Croatian university students and some sociodemographic and academic characteristics of those students seem to influence the observed prevalence of various IPV forms. Specific preventive programs adjusted to university settings are needed to successfully combat IPV in the studied population.

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Introduction

Violence against women is one of the most significant violations of human rights and a widespread and serious public health challenge in modern societies. The aforementioned violence has significant negative short-term, medium-term, and long-term effects on the physical and mental health and well-being of women, children, and entire families. It is estimated that between 38% and 40% of femicides or murders of women worldwide are committed by their intimate partners (1). Violence by a spouse or a male intimate partner is the most prevalent form of violence against women in the world (2). Intimate partner violence (IPV) refers to any behavior of a current or former male intimate partner in the context of marriage, cohabitation, or any other formal or informal relationship or community, that causes physical, sexual, or psychological damage (1, 2). IPV includes physical abuse, such as hitting, slapping, kicking, and beating (physical IPV); nonphysical acts intended to upset a partner or harm their self-worth, such as shaming, name-calling, or intimidation (psychological IPV); other "controlling behaviors" such as isolating a person from their family and/or friends, monitoring their movements, restricting their access to information and services, and not allowing them to work outside of the home (so-called coercive control as a special form of psychological IPV); coercion, threats, or physical force to obtain unwanted sexual contact (sexual IPV); and economic or financial abuse (economic IPV) (1-3).

Recent studies have shown that dating violence among young people and IPV among young people is a very widespread phenomenon in the period of adolescence and young adulthood, i.e. in the period during which a large part of young people attend universities. The mentioned violence, as with IPV among adults, includes intentional forms of sexual, physical, and psychological abuse of one partner in an intimate relationship against another, and the various forms of violence mentioned often occur together. Students are actually very vulnerable in terms of IPV due to the very social environment in which they live and interact with other students. Students live, work, and socialize with their peers, which is why they are very susceptible to their influence. Research has shown that students tend to adopt both positive and negative behaviors of their peers, such as excessive alcohol consumption, consumption of psychoactive substances, eating habits, and violent behavior in intimate relationships. IPV among young people often takes place in student dormitories, and student apartments outside the university campus, as well as at various social events and parties in catering establishments organized by various student associations (4-9).

Regarding the frequency of IPV in the student population, studies indicate a large variability in the prevalence of this violence, which ranges from 5.5% to a whopping 65.6%, depending on the country where the study was conducted. Physical violence was recorded in 17% to 45% of intimate relationships of students, sexual violence in 15% to 20% of their intimate relationships, and psychological and/or emotional violence in as many as 50% to 80% of intimate relationships in the student population (2, 9, 10).

Risk factors for the occurrence of all forms of IPV in the student population include excessive alcohol consumption, consumption of psychoactive substances, pre-existing mental health problems with which students already come to universities, low socioeconomic status, younger age of the victim, early sexual intercourse of the victim, experience of any form of violence, especially sexual violence during childhood, witnessing violence in an intimate relationship of parents in the primary family, disability of the victim, large age difference between the student and her intimate partner, dominantly patriarchal social attitudes that emphasize and justify the dominance of men over women in all aspects of their common coexistence and the fear of rejection or abandonment, i.e. the so-called anxiety related to bonding with an intimate partner (2, 7, 8, 11-18). Most studies over the past forty years point out that female students are mostly victims of violence in intimate relationships, while male students are mostly aggressors or perpetrators of various forms of violence against female

intimate partners, although more recent studies show that female students initiate and perpetrate violence against intimate partners just as often as male students. The latter mainly refers to psychological and/or emotional violence, while victims of sexual violence in the student population are still predominantly female students (2, 9).

In Croatia, the issue of IPV in the student population is very rarely investigated, and research among students at the University of Osijek conducted in 2015 found that a total of 67.7% of all students (both male and female) reported experiencing violence from an intimate partner sometime during life, whereby male students had significantly more positive attitudes towards intimate partner violence compared to female students (19, 20).

This study aimed to explore the prevalence of IPV among female Croatian university students and to investigate possible risk factors for its occurrence.

Participants and Methods

Participants

This study was cross-sectional. The research included 582 female students from the University of Osijek in Eastern Croatia during April 2015. The Ethics Committee of the Faculty of Medicine Osijek, Croatia (Ethical Approval Code: 2158-61-07-15-13) approved the research. Being the largest university in Eastern Croatia, the University of Osijek had a population of 16.065 students, 40.7% being males and 59.3% being females. A total of 800 questionnaires were randomly distributed to female sophomores from undergraduate or integrated undergraduate and graduate studies as well as to the ones studying in the first year of graduate studies or fourth year of integrated undergraduate and graduate studies. Participants were from all faculties within the university. Students were from different study years to explore the significance of study duration i.e. student life duration for the prevalence of IPV. The overall response rate was 73.8% (590/800). Eight questionnaires were excluded from the study for being incomplete. The final sample of 582 answered questionnaires presented 6.1% of all female students from the University of Osijek and was a representative cross-faculty sample. The students' participation was voluntary and proceeded in lecture theaters immediately after the completion of a lecture. They were given an explanation about the purpose of the study and the protocol and the questionnaire was provided to those willing to participate and who signed the informed consent. Filling out the questionnaire took about 15 minutes, after which the participants were instructed to put them in a specially designed box that could not be opened or seen through which was positioned at the exit of the lecture theater.

Study participants' median age was 22 years (interquartile range from 21 to 23 years). The study sample was comprised of 60.7% of sophomores attending undergraduate or integrated undergraduate and graduate studies (with a median age of 21 years) and 39.3% of students attending the first year of graduate studies or the fourth year of integrated undergraduate and graduate studies (with the median age of 23 years) from all university faculties. Among the participants, there were 18.9% of those who repeated the study year and 81.1% of those who did not repeat it. There were 26.7% of participants from the field of biomedicine and natural sciences, 4.3% of participants from the field of technical sciences, 13.9% of participants from the field of biotechnical sciences, 45.5% of participants from the field of social sciences and 9.6% of participants from the field of humanities.

Methods

A structured anonymous questionnaire used in the study was comprised of two parts. The first part of the questionnaire contained questions regarding sociodemographic data such as their age, sex, year of study, repetition of the study year, and study field. The second part of the questionnaire contained twenty-two questions regarding participants' lifetime experiences involving all forms of IPV, physical IPV, psychological IPV, controlling behaviors as a

special form of psychological IPV, sexual IPV, economic abuse, and experience of any form of IPV during circumstances when a female student or her partner were intoxicated with alcohol or psychoactive substances. The questions had simple "yes" or "no" answers.

Statistical analysis

Statistical analyses were done using the IBM SPSS Statistical Package, version 22.0 (SPSS Inc., Chicago, IL, USA). The data distribution normality was confirmed by the Kolmogorov–Smirnov test, after which the methods of descriptive statistics were used to process the data. The categorical variables were described in absolute and relative frequencies, while the numerical variables were described as median and interquartile ranges. The χ 2-test and Fisher exact test were used for the comparison of categorical variables between the groups. In all statistical analyses, two-sided p-values of 0.05 were considered significant.

Results

The study revealed that the lifetime prevalence of all forms of IPV in the studied population of female students at the University of Osijek was 64.3%. Considering the lifetime experiences of various forms of IPV, there were 3.3% of students who reported experience of physical IPV, 59.8% of students who reported experience of psychological IPV, 40.2% of students who reported experience controlling behaviors, 4.8% of students who reported experience of sexual IPV and 9.6% of students who reported experience of economic abuse. Besides that, 5.7% of students reported that they during their lifetime experienced any form of IPV in circumstances when the female student or her partner were intoxicated with alcohol while 1.2% of students reported that they during their lifetime experienced any form of IPV in circumstances when the female student or her partner were intoxicated with psychoactive substances.

There was no statistically significant difference in the frequency of any form of IPV in female Croatian university students considering their year of study (p=0.744). The study also did not find statistically significant differences in the frequency of physical IPV, psychological IPV, and controlling behaviors among study participants considering their year of study (p=0.092, p=0.990, and p=0.595, respectively). In contrast to aforementioned results, the present study showed that female students attending the first year of graduate studies or the fourth year of integrated undergraduate and graduate studies more frequently experienced sexual IPV (p<0.001) (Table 1) as well as economic abuse (p=0.010) (Table 2) in comparison to female students attending the second year of undergraduate or integrated undergraduate and graduate studies.

Table 1. Lifetime experience of sexual IPV in study participants according to their year of study

		Sexual IPV N (%)		p*
		No	Yes	
Year of study	2nd year of undergraduate or integrated undergraduate and graduate studies	346 (98.0)	7 (2.0)	<0,001
	1st year of graduate studies or 4th year of integrated undergraduate and graduate studies	208 (90.8)	21 (9.2)	
Total		554 (95.2)	28 (4.8)	

* χ 2-test; N-number of study participants

Table 2. Lifetime experience of economic abuse in study participants according to their year of study

		Economic abuse N (%)		p*
		No	Yes	
Year of study	2nd year of undergraduate or integrated undergraduate and graduate studies	328 (92.9)	25 (7.1)	0.010
	1st year of graduate studies or 4th year of integrated undergraduate and graduate studies	198 (86.5)	31 (13.5)	
Total		526 (90.4)	56 (9.6)	

* χ 2-test; N-number of study participants

The study did not find a statistically significant difference in the frequency of any form of IPV in female Croatian university students based on the repetition of the year of study (p=0.241). The study also did not find statistically significant differences in the frequency of physical IPV, psychological IPV, controlling behaviors, and economic abuse among study participants based on the repetition of the year of study (p=0.227, p=0.259, p=0.702, and p=0.881, respectively). However, the present study revealed that female students who repeated the year of study more frequently experienced sexual IPV (p=0.005) (Table 3) in comparison to female students who did not repeat the year of study.

The present study revealed that all forms of IPV were more frequent among female students who studied within the scientific field of humanities (p=0.045) (Table 4).

Table 3. Lifetime experience of sexual IPV in study participants according to the repetition of the year of study

		Sexual IPV N (%)		p*
		No	Yes	
Repetition of the year of study	No	455 (96.4)	17 (3.6)	0.005
	Yes	99 (90.0)	11 (10.0)	
Total		554 (95.2)	28 (4.8)	

* χ 2-test; N-number of study participants

Table 4. Lifetime experience of any form of IPV in study participants according to the field of science of attended studies

		Any form of IPV N (%)		p*
		No	Yes	
The field of science of attended studies	Biomedicine and natural sciences	63 (40.6)	92 (59.4)	0.045
	Technical sciences	10 (40.0)	15 (60.0)	
	Biotechnical sciences	28 (34.6)	53 (65.4)	
	Social sciences	97 (36.6)	168 (63.4)	
	Humanities	10 (17.9)	46 (82.1)	
Total		208 (35.7)	374 (64.3)	

* χ 2-test; N-number of study participants

The study did not find a statistically significant difference in the frequency of controlling behaviors based on the student's field of science (p=0.411). Female students who studied the humanities were more frequently exposed to physical violence, psychological violence, sexual violence, and economic abuse (p<0.001, p=0.006, p<0.001, and p=0.033, respectively) (Table 5-8).

Table 5. Lifetime experience of physical IPV in study participants according to the field of science of attended studies

		Physical IPV N (%)		p*
		No	Yes	
The field of science of attended studies	Biomedicine and natural sciences	154 (99.4)	1 (0.6)	<0.001
	Technical sciences	23 (92.0)	2 (8.0)	
	Biotechnical sciences	80 (98.8)	1 (1.2)	
	Social sciences	258 (97.4)	7 (2.6)	
	Humanities	48 (85.7)	8 (14.3)	
Total		563 (96.7)	19 (3.3)	

*Fisher exact test; N-number of study participants

Table 6. Lifetime experience of psychological IPV in study participants according to the field of science of attended studies

		Psychological IPV N (%)		p*
		No	Yes	
The field of science of attended studies	Biomedicine and natural sciences	75 (48.4)	80 (51.6)	0.006
	Technical sciences	11 (44.0)	14 (56.0)	
	Biotechnical sciences	32 (39.5)	49 (60.5)	
	Social sciences	105 (39.6)	160 (60.4)	
	Humanities	11 (19.6)	45 (80.4)	
Total		234 (40.2)	348 (59.8)	

* χ 2-test; N-number of study participants

Table 7. Lifetime experience of sexual IPV in study participants according to the field of science of attended studies

		Sexual IPV N (%)		p*
		No	Yes	
The field of science of attended studies	Biomedicine and natural sciences	152 (98.1)	3 (1.9)	<0.001
	Technical sciences	23 (92.0)	2 (8.0)	
	Biotechnical sciences	75 (92.6)	6 (7.4)	
	Social sciences	258 (97.4)	7 (2.6)	
	Humanities	46 (82.1)	10 (17.9)	
Total		554 (95.2)	28 (4.8)	

*Fisher exact test; N-number of study participants

Table 8. Lifetime experience of economic abuse in study participants according to the field of science of attended studies

		Economic abuse N (%)		p*
		No	Yes	
The field of science of attended studies	Biomedicine and natural sciences	141 (91.0)	14 (9.0)	0.033
	Technical sciences	23 (92.0)	2 (8.0)	
	Biotechnical sciences	70 (86.4)	11 (13.6)	
	Social sciences	247 (93.2)	18 (6.8)	
	Humanities	45 (80.4)	11 (19.6)	
Total		526 (90.4)	56 (9.6)	

*Fisher exact test; N-number of study participants

Discussion

The present study revealed a rather large prevalence of female university students who had experienced any form of IPV during their lifetime and the determined prevalence is comparable with the results of different similar studies (2, 9, 10, 17, 21-24). The present study showed that 3.3% of female students from the University of Osijek reported experience of physical IPV, which is almost identical to the prevalence of experienced physical IPV of 3.37% that was found among Croatian female students from the University of Mostar (9). The prevalence of physical IPV discovered in this study was lower than that found in other similar studies conducted in Spain, Nigeria, and Kenya (17, 22, 25, 26). The prevalence of psychological IPV (59.8%) found in this study is higher than the prevalence among Croatian female students from the University of Mostar, female students from Nigeria and Kenya (9, 22, 25), similar to the prevalence of this form of IPV found among students from Spain (17) and lower than the prevalence of this form of IPV found in another study in Nigeria (26). Considering sexual IPV the prevalence found in this study is almost six times higher than the prevalence of this form of IPV discovered among Croatian female students from the University of Mostar (9). However, the determined prevalence of sexual IPV in this study (4.8%) is much lower than the prevalence of this form of IPV found among students in Spain, Kenya, and Nigeria (17, 25, 26). The studies on economic abuse among female university students are rare, however, one study recently conducted among female community college students in the USA found that 44% of the students reported experiencing at least one economic abuse tactic over the past year (27). Considering the latter study, one can presume that the lifetime prevalence of economic abuse discovered in this research (9.6%) can be considered lower than the cited one.

The present study did not confirm that the intoxication of the victim or abusive partner with alcohol or psychoactive substances was an important risk factor for the occurrence of any form of IPV in the study population because, according to the results, 5.7% of students reported that they during lifetime experienced any form of IPV in circumstances when female student or her partner were intoxicated with alcohol while 1.2% of students reported that they during lifetime experienced any form of IPV in circumstances when female student or her partner were intoxicated with psychoactive substances. The aforementioned findings are in contrast with other studies conducted elsewhere which all confirm that alcohol or psychoactive substances abuse were very important risk factors for the occurrence of IPV in university setting (2, 8, 12, 16, 21, 22, 25, 28) but are similar to the study conducted by Musa et al. that also confirmed how neither the use of alcohol, marijuana, nor other drugs was a predictor of IPV in university students (29).

Almost half of IPV survivors experienced their first abusive relationship at the university age, i.e. between 18 and 25 years (30). It has been noticed that there are some differences between established prevalences of IPV considering the year of study and because of that it is important to study the rates of IPV in undergraduate and graduate students (29). The present study did not find significant differences in the frequency of any form of IPV in study participants as well as in the frequency of physical IPV, psychological IPV and controlling behaviors among study participants considering their year of study and this finding is similar to the findings of study conducted by Musa et al. (29) but it is opposite to the results of the study done by Umana et al. which revealed that undergraduate students were at higher risk for experiencing IPV than graduate and postgraduate students (22). Although undergraduate students are often emphasized as an especially vulnerable group considering the IPV, including sexual IPV (31) this study revealed that graduate female students were significantly more exposed to sexual IPV in comparison to undergraduate female students included in this survey. The study by McMahon et al. conducted in the USA also confirmed that graduate female students are especially vulnerable to sexual IPV in comparison to undergraduate students (31). One frequently hidden or "invisible" form of IPV within intimate

relationships is economic or financial abuse (33). Attention to this form of IPV is very important because economic stability is a social determinant of health that significantly influences the physical and mental health and safety of IPV survivors and because of that studies that ignore economic violence miss an important factor (34, 35). Very little is known about university students' experiences of economic abuse since only a few studies explore this important issue. Available studies have suggested that some university students experience economic abuse, and these experiences consist of economic abuse tactics that target the student's ability to obtain or complete their educational pursuits (27, 36, 37). Considering the economic abuse, the present study further discovered that graduate female students were significantly more exposed to this form of IPV in comparison to the undergraduate Croatian female students included in this study. To the best of our knowledge this is the first study that explores the differences in the prevalence of economic abuse between undergraduate and graduate female students and because of that it is hard to compare our results with similar studies. However, the explanation for the revealed differences possibly lies in the fact that among the graduate students, there is a much larger proportion of those who are employed since they finished undergraduate studies and are more likely to pursue careers in their chosen profession while continuing with education in the graduate level of studies, thus having larger personal incomes found themselves in greater risk for economic abuse from a violent intimate partner.

A previous study among Croatian university students showed that low academic achievement measured through the repetition of the year of study poses a significant risk factor for alcohol abuse in the university student population (38). Following this analogy this study confirmed that female students who repeated the year of study were more frequently exposed to sexual IPV by their intimate partners in comparison to students who did not repeat the study year. Recent studies have confirmed that the self-esteem of students may be significantly associated with their academic performance, meaning that it is quite possible that female students with low academic achievement measured through the repetition of the year of study have lower self-esteem in comparison to their peers who did not repeat the year of study (39,40). On the other hand, a recent study among emerging adults in France demonstrated that low self-esteem appears to be a factor of vulnerability to sexual IPV (41). Considering the aforementioned facts from different studies conducted among university students one can explain the result of this study concerning the repetition of the year of study as a risk factor for sexual IPV among study participants.

The present study revealed that overall IPV as well as physical violence, psychological violence, sexual violence, and economic abuse were all more frequent among female students who studied within the field of humanities. This finding is very interesting, but it is difficult to compare obtained results with other similar studies because, to the best of our knowledge, this was the first study that examined the prevalence of experienced IPV among university students according to their chosen field of study. However, there are several possible explanations. First, several studies have explored possible group differences in the Big Five personality traits between students in different academic majors and found out that there are significant personality group differences with some general trends such as psychology and arts/humanities students scored high on Agreeableness and Neuroticism, arts/humanities students scored low on Conscientiousness, psychology and arts/humanities students scored high on Openness (42, 43). The aforementioned facts are rather important since it is well-established that personality traits are associated with aggressive behavior and may enhance or inhibit aggressive moods and actions. Openness, agreeableness, and neuroticism are related to bold emotions and physical aggression while conscientiousness has significantly and positively correlated with the gray matter volume in the right inferior frontal gyrus, which has revealed the relationship between

personality traits and emotion regulation (44, 45). Therefore, the dominant personality traits of students studying in the humanities field of science can possibly predict individuals with a higher risk of IPV i.e. explain the results of the present study concerning the interconnection between the field of study and determined prevalence of overall IPV and its various forms. A second possible explanation for the obtained results lies in fact, that, according to one previous study among Croatian university students regarding their attitudes toward IPV, students studying within the field of humanities together with the students studying within the field of biomedicine and health sciences were less likely to have positive attitudes toward IPV in comparison to students studying in other field of science (20), because of that it is possible that female students studying in the field of humanities in this study were more prone to reporting their IPV experiences.

Although this study has several strong points mentioned earlier, it also has some limitations, therefore its results should be interpreted with caution. First, there is a potential for self-report bias, which we reduced by conducting an anonymous study. Furthermore, since the study included students from only one university, it cannot be generalized with certainty that the results are applicable at the national level. However, this study raised some new questions regarding the associations between personality traits and risk for IPV in Croatian university students that should be further investigated in future studies. Besides that, the study reveals the need to examine self-esteem among the university student population and its association with the risk of IPV as well as the need to investigate more deeply the economic abuse as an often-hidden form of IPV in vulnerable university student population.

Conclusion

The present study revealed that IPV was highly prevalent among female Croatian university students while some sociodemographic and academic characteristics of those students seem to influence the observed prevalence of overall IPV and its various forms. Bearing in mind that unidentified incidents of IPV and unreported incidents of IPV may interfere with IPV prevention efforts at the universities it is necessary to educate students and teachers about this emerging public health issue. Besides that, in designing the preventive measures that are needed to successfully combat IPV in the studied population one should consider the various number of specific risk factors for IPV that are unique to the occurrence of this type of violence in the university settings.

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Intimno-partnersko nasilje među hrvatskim studenticama

Sažetak

Cilj: Nasilje među intimnim partnerima (IPN) unutar studentske populacije važan je javnozdravstveni izazov s trajnim negativnim posljedicama. Ovo istraživanje imalo je za cilj istražiti prevalenciju IPN-a među studenticama hrvatskih sveučilišnih studija te istražiti moguće čimbenike rizika za njegovu pojavu.

Metode: Ovo presječno istraživanje provedeno je na prigodnom uzorku studentica preddiplomskog i diplomskog studija Sveučilišta u Osijeku u travnju 2015. godine.

Rezultati: Ukupna prevalencija svih oblika IPN-a u ispitivanoj populaciji bila je 64,3 %. Fizičko nasilje prijavilo je 3,3 %, psihičko nasilje 59,8 %, kontroliranje ponašanja ili prisilnu kontrolu kao poseban oblik psihičkog nasilja 40,2 %, seksualno nasilje 4,8 %, a ekonomsko zlostavljanje 9,6 % studentica. Seksualnom nasilju i ekonomskom zlostavljanju češće su bile izložene studentice diplomskih studija ($p < 0,001$ i $p = 0,010$). Studentice koje su ponavljale godinu studija bile su češće izložene seksualnom nasilju ($p = 0,005$). Općenito, IPN je bio učestaliji među studenticama koje su studirale unutar područja humanističkih znanosti ($p = 0,045$). Studentice koje su studirale u području humanističkih znanosti bile su češće izložene fizičkom nasilju, psihičkom nasilju, seksualnom nasilju i ekonomskom zlostavljanju ($p < 0,001$, $p = 0,006$, $p < 0,001$, odnosno $p = 0,033$).

Zaključak: IPN je bio vrlo raširen među hrvatskim studenticama i čini se da neke sociodemografske i akademske karakteristike tih studentica utječu na opaženu prevalenciju različitih oblika IPN-a. Za uspješnu borbu protiv IPN-a u proučavanoj populaciji potrebni su specifični preventivni programi prilagođeni sveučilišnom okruženju.