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Review article

TRANSGENERATIONAL TRANSMISSION OF TRAUMA – MATRYOSHKA THEORY

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Abstract

Intergenerational trauma is relatively a new field of research in psychology and psychiatry. The idea is that trauma is not just experienced by one person but extends from one generation to the next. It travels silently and at times, out of awareness.

Parental emotional heritage, as the pains in previous generations, affect the emotional well-being, and the way the second and third generations react to life events. In this context, families affected by catastrophes such as tsunami, wars, earthquake and similar events are especially vulnerable for generational transmission of trauma.

Research into the causes of psychopathology has been largely focused on two broad etiologic factors: genetic vulnerability and environmental stressors.

This study is a review of published articles available on PubMed and Psych Net in the past two decades. The results obtained confirmed genetic, behavioural and attachment-related transmission of intergenerational trauma. The need of psychological support is emphasised.

Keywords: transgenerational transmission, trauma, Matryoshka doll, genetics, environment

Introduction

From the beginning of the world, traumatic events have happened anywhere and anytime. In any period of the Earth history, wars, diseases, disasters, and personal traumatic events have appeared without break up. All these events have influenced on the human growth, development and especially on mental health of the people. Even in cases when the traumatic event had passed, it was confirmed that its deep influence on psyche existed for a long period. Over the last decades, transgenerational transmission of trauma (TTT) has been considered an interesting research topic.

The word 'trauma' originates from the Greek language, meaning ‘wound’ and traumatised people are defined as such when their immediate ability to cope with and respond to a perceived anguish is overwhelmed, making them helpless in the face of pain **(**Gordon, 2007**)**[1].

It has been confirmed that pain travels through families until someone becomes ready to feel it. The Matryoshka figurine symbolised by the nesting doll is used as a metaphor to facilitate the investigation of the transmission of trauma across generations. As it is known, in Russian culture and tradition, Matryoshka wooden doll is a symbol of a family, of fertility, the unity of the body, mind, spirit, soul and heart.

Generations carry all, and like the big Matryoshka with other dolls inside: stories, relationships and traumatic experiences are transmitted. The evidence in the literature review suggests that intergenerational transmission of trauma is perpetuated across generations. As with the nesting doll, trauma is scripted and nested within the previous generations.

Transmitted down the generations as phantoms and buried in the deep of the psyche, later the traumatic memories emerge in the next generations as disturbances in the self like meaninglessness, alienation, and feeling outcast. Record keeping as the buried past can bring symbolic representation to phantoms and disperse their influence.

Trauma can provoke current but also some different long-term effects. Social consequences of traumatised children, for example, are related to violence against others as a solution to their excessive death drive. However, traumatic experience continues to be representational in the psychic life of the following generation and becomes the interchange between human beings. Without any internalization, nor ability to make the experience subjective, trauma influences deep splitting in the psyche and provokes some expression of PTSD, general anxiety, depression, hopeless, alienation etc. The formulations associated with the posttraumatic stress syndrome generate an overly medicalized view of trauma, grossly underestimating its devastating impact.

The aim of this study was to present the knowledge about transgenerational transmission of trauma (TTT) in a form of review based on published research in the databases Medline and Psych Net in the last two decades.

Material and method

The review was based on over 50 published articles in the databases Medline and Psych Net related to intergenerational trauma and published in the last 20 years.The following key words were used in the literature search: trauma, transgenerational transmission, genetics, Matryoshka doll.

Theoretical approach

Intergenerational trauma is relatively a new field of research in psychology and psychiatry. The idea is that trauma is not just experienced by one person but extends from one generation to the next. It travels silently and at times, out of awareness. Being undefined, it surfaces through gradations and implied throughout the offspring's life. Taking this as a point of theoretical approach, survivors feeling the generational and historical pain will need to develop supports to co-explore the experiential and socio-environmental field, so that a heightened awareness may appear. Parental emotional heritage, as the pains in previous generations, affect the emotional well-being, and the way the second and third generations react to life events. In so doing, an array of choices becomes possible by making 'the unaware conflict aware'. It is important to support the adjustments of these people and to stimulate their creative gifts as depressed or anxious, or any other mental disorder.

People who experience severe trauma (including childhood trauma) and develop significant and chronic symptoms as a result (e.g. alcoholism, drug abuse or severe psychiatric conditions such as anxiety, depression and PTSD) may, in turn, traumatize their own children, who then themselves develop psychological/emotional/behavioural problems which, in continuation of this destructive cycle, adversely affects their children…and so on. This domino effect refers to the phenomenon known as transgenerational trauma.

Some research and clinical trials in psychology and related disciplines are exploring whether and how mass cultural and historical traumas affect future generation. Figure 1 presents this influence in broader fields.

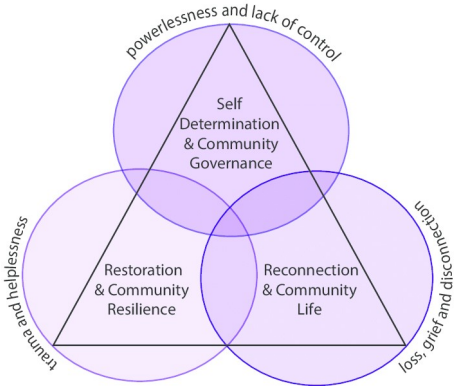

Fig. 1. Interplay between self-determination, reconnection and restoration in the community

Massive traumas affect people and societies in multidimensional ways. The question is how the trauma is transmitted through generations?

The first possibility is the transmission according to the behaviour. Yet, in Bandura learning theory[2] it was proven that children would do what they see. Schematically, it seems like relations presented in Figure 2.

In this context, adults with a history of trauma have certain behaviour and symptoms and their interrelation with their own children are different from other people. As a consequence, survivors of trauma become highly protective of their children, but the opposite is also possible.

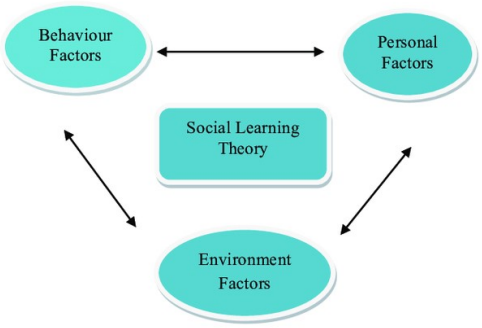

Fig. 2. Social learning theory (Bandura, 1977)

The second possibility is related to the attachment. The attachment theory (Bowlby)[3] is based on the idea that the interaction between the child and primary caregivers in the first years of childhood is important for the further neurodevelopment of the child, especially for his emotional stability. As it has been confirmed, there are few types of attachments that are not healthy, especially in the families where parents experienced trauma in their lives. In short, bad attachment leads to transmission of trauma from the parents to the children.

The third possibility is genetic transmission of trauma. In addition to the behavioural and environmental aspects of trauma transmission, recent studies suggest that there is an actual genetic transmission of trauma. In this context, it is supposed that trauma changes the DNA and this change is passed down for up to 3 generations. In general, two strategies for association analysis of single nucleotide variation (SNV) are used: candidate gene studies and genome-wide association studies (GWAS). The first is related to genes that have been implicated in a phenotype based on prior evidence. Recently, loci identified from GWAS have become popular candidates. The potential impact of genetically informed studies of trauma is

substantial. The genes called TPH1 and TPH2 control the serotonin production, a neurotransmitter which regulates mood, sleep and alertness. Consequently, people suffering of PTSD have the disturbed function of TPH 1 and 2[4].

In a study of Nugent *et al.* (2008)[5] it was mentioned that DA (dopamine) system, especially D2DA receptor gene (DRD2) genes and SLC6A3 (DAT1) 3'polymorphism could be related to PTSD. In 1966, the Canadian psychiatrist Vivian M. Rakoff and her colleagues [cited in [6]] recorded high rates of psychological distress among children of Holocaust survivors, and the concept of generational trauma was first recognized. Subsequent studies described high rates of psychological distress among children of Holocaust survivors. Some noted their specific behaviour patterns, including being overly protective of their parents, needing a high level of control, exhibiting an obsession with the Holocaust and having immature dependency.

Different family studies confirmed the hereditability of PTSD. Beside direct gene modification, it is also possible that the effects of trauma may be passed due to an epigenetics. It means that involved genes being switched on or switched off as a result of particular experience. A study examining the DNA of Holocaust survivors and their children found similar variations from the norm in both generations for the gene associated with depression and anxiety disorders[7,8] . Similar findings have been proven for Vietnam veterans.

Who is vulnerable to intergenerational trauma?

Everyone is susceptible to generational trauma, but if someone is systematically exploited, enduring repeated and continual abuse, racism, and poverty, all these conditions are traumatic enough to cause genetic changes and to influence particular vulnerability. In this context, families affected by catastrophes such as tsunami, wars, earthquake and similar events are especially vulnerable to generational transmission of trauma. Additionally, domestic violence, sexual abuse, hate crime are other acts can result in generational trauma.

The Israeli-Palestinian conflict is one of the longest standing international conundrums in the political world. The study of Kira I. *et al.* (2013)[9] utilized a measure for cumulative traumas that is based on the developmentally-based framework and measures of posttraumatic stress disorder, cumulative trauma-related disorders, depression, anxiety, collective annihilation anxiety, identity salience, and fear of death. The results of partial correlation and path analyses indicated that continuous traumatic stress was a significant predictor of mental health. The analyses also indicated that poverty predicted identity salience and annihilation anxiety that mediated their negative effects on physical and mental health of Palestinian adolescents.

The majority of articles published in this area are related to the people who have been asylum seekers. As it was confirmed, asylum seekers represent a highly traumatized group with experiences of systematic oppression, loss, displacement, and exposure to violence. Around the world many are viewed with distrust and anxiety. In an article of Newman L. (2013)[10] the impact on mental health of asylum seekers in Australian society was presented. The research concluded that mandatory detention of high-risk and oppressed groups compounds trauma with a potential long-term negative impact on mental health.

More recently, Young P. *et al.* (2016)[11] confirmed the findings of the 2014 Australian Human Rights Commission report and provided an argument for public reporting of refugee data.

The research confirmed that longer time in detention was associated with higher self-reported depression scores. In this context, female individuals were found as more vulnerable to time in detention than those of male gender. As a psychometric instrument the Harvard Trauma Questionnaire was used. Approximately one-half of the refugee group had post-traumatic stress disorder symptoms, as well as one-third of the children, adolescents and adults suffered with clinical symptoms requiring tertiary outpatient interventions.

In a review of von Werthern *et al.* (2018)[12] serious mental health consequences amongst detainees across a wide range of institutions were confirmed. The high vulnerability during the detention is pointed as a cause for PTSD, depression and anxiety in people waiting for asylum. It was concluded that the severity of mental symptoms was related to the duration of detention.

The number of people displaced worldwide has increased dramatically in the last decade as a result of different human rights violations such as persecution, conflict, generalized violence etc. The UNHCR estimated that till July 2018, there were near 70 million forced migrants around the world. At present the total number of third-country nationals held in immigration detention in the European Union is estimated to be near 200.000[13].

It was confirmed that the refugees were more vulnerable to mental disorders, especially depression, PTSD and anxiety compared to the general population[14,15]. Immigration detention exposes asylum seekers additionally to possible abuse from staff and violence from other detainees influencing social isolation or forceful removal.

Data for children of immigrants are especially interesting: depression, anxiety, PTSD and somatization have been more frequently encountered in these children. The majority of children manifested sleeping (65–100%) and eating problems (100%), suicidal ideation (50%), and self-harm (25–80%)[16].

In a study of Cleveland *et al.* (2013) the Harvard Trauma Questionnaire and the Hopkins Symptoms Checklist-25 were used to assess psychiatric symptoms in immigrants in Montreal and Toronto[17]. High levels of PTSD, depression and anxiety symptoms have been confirmed, especially in people who have previous trauma and longest detention time.

Research conducted by Volkan is especially interesting for us in the Balkan region. In a research of traumatising people during Bosnian war, this author used frequently the term *chosen trauma*. The chosen trauma means unconscious choice of the traumatized large group to add a past generation's mental representation of an unpleasant event to its own identity. In this way, chosen trauma makes thousands of people to be linked together through their similar mental representation of the trauma. In other words, past generations have no capacity to mourn losses connected to the traumatic event and this failure reverses the injury influence to the group's self-esteem and humiliation caused by another large group of people, usually from the neighbourhood (Volkan, 1991, 1996)[18,19]. In this way, transgenerational transmission of the traumatic events represents a significant large group marker.

The main symptoms of generational trauma may include hypervigilance, a sense of a shortened future, mistrust, aloofness, high anxiety, depression, panic attacks, nightmares, insomnia, a sensitive fight or flight response, and issues with self-esteem and self-confidence. Trauma affects also the immune system and, in this way, can provoke autoimmune disorders. The brain's immune system reacts with the microglia, which instead of enhancing growth and getting rid of damage now massively destroys the ends of the nerves.

MRI findings in persons with PTSD have implicated that pathophysiology include the regions such as medial and dorsolateral prefrontal cortex, orbitofrontal cortex, insula, lentiform nucleus, amygdala, hippocampus and parahippocampus, anterior and posterior cingulate cortex, precuneus, cuneus, fusiform and lingual gyri, and the white matter tracts connecting these brain regions (Fig. 3). It means that all brain regions known to have an important role in fear conditioning and reactions to threat are involved. Additionally, those regions belong to the more intrinsic networks which regulate autobiographical memory retrieval and self-thought, salience detection and autonomic responses, or attention and emotional control[20].

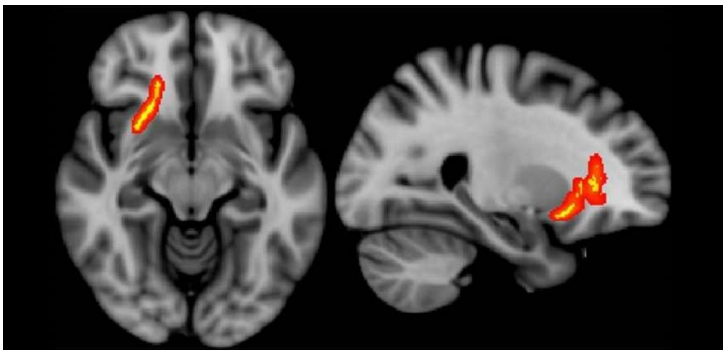

Fig. 3. MRI shows brain disruption in children with PTSD
(source: © Milroy, Dudgeon and Walker, 2013, Community Life and Development Programs-Pathways to Heling)

According to the *Diagnostic and Statistical Manual of Mental Disorders, Fifth Edition* (DSM-5), which is the standard classification of mental disorders used by mental health professionals, the generational trauma as diagnosis does not exist. However, the phenomena of intergenerational trauma are well recognised from all specialists in the field.

Danieli Inventory of Multigenerational Legacies of Trauma is one of the acknowledged psychological questionnaires tailored to adults, children and relatives of Holocaust survivors. Yael Danieli is a co-founder and director of the Group Project for Holocaust Survivors and Their Children in New York. The Danieli Inventory was firstly used for the evaluation of 484 adults, children and grandchildren on Holocaust survivors. The results of the study of Danieli *et al.* (2017) have shown that school children and, in some cases, grandchildren more frequently report psychological distress and suicide attempts, have some learning difficulties and problems in school and to contract hepatitis C through drug use than controls[21, 22].

Regarding the therapeutic approaches, any form of psychotherapy and coaching life are useful. Generational trauma can be resolved if a holistic, intense intervention is put in place. This often involves individual therapy, but also group/family therapy is another option. It seems to me that Internal Family Systems Therapy (IFS) is maybe the best choice.

According to trauma experts, good trauma therapy involves finding "words for experiences that are unspeakable" while listening carefully the accompanying emotional tone and somatic (bodily) experience. Psychotherapy focused on healing transgenerational trauma places the personal life experiences within the context of larger family history. However, this therapeutic process is functionally similar to healing from any trauma.

Recently, some prenatal programming perspective on the transmission of maternal trauma to offspring health problems is initiated[23]. It was proven that mother's experiences of early adversity may compromise the mother-child dyad, which provoked adverse childhood experiences that extended to subsequent generations. Authors of this study proposed a conceptual model in which the dyadic relationship and later biobehavioural health outcome influenced by perinatal psychosocial risks would be overcome. In this context, prevention and treatment strategies can buffer against risk pathways, including perinatal assessment of maternal adverse childhood experiences and psychosocial risk, perinatal treatment of maternal distress, and mother–infant therapy in the postpartum period. This kind of perinatal prevention and intervention is particularly important to reduce the long-term deleterious effects of trauma across generations.

Conclusion

- There are confirmative data for transgenerational transmission of trauma.
- Matryoshka doll is used as a metaphor for this phenomenon.
- Transmission of the trauma could be related with genetic and epigenetic factors.
- Main clinical expressions are PTSD, anxiety or depression.
- Most of the sufferers are found in the Holocaust survivors, war regions, into asylum seekers, and in regions of environmental catastrophes.
- Large studies are needed to discover sufferers, and psychological support is needed for all families involved.

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