

POST-TRAUMATIC STRESS DISORDER SYMPTOMS AND UNDERAGED REFUGEES AND THE ROLE OF ICTs.

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Introduction

War and political conflicts are forcing a significant portion of the world's population to leave their homeland and move to another state. Among these individuals are underage refugee asylum seekers. Minor refugees are a social group facing psychosocial difficulties. The development of different forms of psychopathology is observed in the population of refugee children and adolescents. Among the mental disorders that occur in minors is Post-Traumatic Stress Disorder (PTSD). The disorder causes disfunction on the daily functioning of individuals and obstacles to their normal psychosocial development. The purpose of this study is to highlight and understand the clinical entity of PTSD that appears in this minority group. The methodology on which the work was based is the systematic literature review. The conclusion that emerges concerns the effects of the war on the development of PTSD symptoms in refugee children and adolescents. Finally, the conclusions of the review emphasize the important role that mental resilience plays in the effective treatment of trauma.

Keywords underage refugee, Post-traumatic Stress Disorder, traumatic event, resilience

1. Post Traumatic Stress Disorder

Defining Trauma

The anxiety emerging in people facing adverse circumstances in their lives may lead to the development of trauma. Trauma is a notion frequently used in Psychology in order to describe the psychological situation of people after bearing anxiety situations. Psychological trauma consists of three main elements: the fact, the experience and the influence. The fact describes the situation posing psychological stress to the individual. The experience relates to the way a person faces the stressful situation, as one's reaction may totally differ from another's. The third element correlated to the effects of the trauma on the psychological, social and sentimental functioning of a person (Isobel, Goodyear & Foster, 2015). Furthermore, trauma includes other characteristics that seem to correlate to a person's experience. In psychological trauma, multiple physical reactions are detected as a person attempts to come to terms with what has happened. In the same field cognitive activities are also correlated regarding the manner a person appreciates a certain fact, including reactions that emerge as an attempt of protection from the consequences of trauma. Therefore, trauma is a natural reaction of a person against painful circumstances that influence his functioning (Flannery Jr, 2014). The terms presented in the previous sections regarding trauma and anxiety contribute to the comprehension of essential psychological phenomena in the field of Post-traumatic Stress Disorder (PTSD). This specific disorder is also crucial to be presented in an attempt to clarify both its symptoms and the clinical situation presented. It is a disorder that can be defined via the Diagnostic and Statistical Manual of Mental Disorders (DSM-5) (American Psychiatric Association, 2013). According to this instrument PTSD is a disorder presented after a person's exposure to a stressful situation that traumatized him

psychologically. Among traumatic and stressful situations multiple events are included that may threaten a person's life, such as those inducing a severe injury and sexual violence. An important aspect during the clarification of trauma is the direct as well as the indirect exposure of an individual towards it, thus DSM-5 defines as a trauma facts that affect directly an individual, as well as facts that an individual witnesses or even learns from a significant other (Pai, Suris & North, 2017).

It is estimated that about 1/5 of the global population lives in countries facing the outcomes of armed conflicts. The negative results of war does not only concern the region of conflict but also affects in the long term the lives of its residents. The burst of war affects both children and adolescents through an intensely critical stage of their development. Underaged that come across political conflicts and war endure vast adversities that urge them to depart from their homeland. The number of underaged refugees in western countries is constantly increasing (Yayan, 2018). Exposing children and adolescents to the stressful circumstances deriving from war and emigration leads to the emerge of multiple obstacles to their normal psycho-social evolution and adjustment. Among these underaged a high frequency of psychological disorders is detected as an outcome of this traumatic experience. Post-traumatic stress disorder (PTSD) is regarded as the dominant disorder appearing, related to the development of negative sentiments and thoughts as well as the perdition of the levels of everyday activities. PTSD is regarded as a severe stress disorder with long-term psychological effects, especially in case it appears during the first developmental stages of a person's life (El-Khodary & Samara, 2019). A variety of factors besides the trauma itself seems to influence the development of this disorder. Among them the level of emotional resilience, to wit the ability to confront stressful circumstances, is considered critical. Emotional resilience acts protectively as it leads to the maintenance of a person's functioning when coping with intense obstacles. Important researches concluded that parents and social background are regarded as factors influencing the emotional resilience and eventually the effective management of a traumatic experience (Huemer et al., 2013).

2. Methodology

The present research is a literature review, thus no primary research material is presented. A literature review is regarded as a method attempting to detect, evaluate and comprise contemporary scientific findings, enabling researchers and professionals to comprehend contemporary scientific conclusion and to incorporate them into both scientific and clinical acts (Hopia, Latvala & Liimatainen, 2016).

Purpose and scientific questions

The present literature review aims at presenting the symptoms of Post-traumatic Stress Disorder (PTSD) that is detected among underaged refugees. This primary aim is strongly correlated with additional goals that enable the comprehension of all dimensions of the disorder among this specific population. The primary aim refers to understanding the factors related to the appearance of severe symptoms of the disorder. The classification of the effect of the background of the trauma, as well as the influence of social and family factors, to the development of PTSD is attempted. The secondary aim refers to the clarification of the psycho-social development of both children and adolescents that suffer from this disorder in an attempt to shed light to the range of psycho-social difficulties posed upon this specific group of underaged. The aim and purposes of this literature review lead to the definition of the following scientific questions: A) What is the type of trauma that may lead to the appearance of intense

symptoms of PTSD among children and adolescents? B) Which factors influence the development of emotional resilience aiming to facilitate the confrontation of the traumatic experience?

Data collection

Data collection during the present literature review is completed via the search and detection of scientific papers published in the following data bases: Pubmed, Science Direct, Wiley Library and Google Scholar. Keywords used were the following: “Post-traumatic stress disorder”, AND “refugee children”, Post-traumatic stress disorder”, AND “refugee children”, AND “Traumatic event”, Post-traumatic stress disorder”, AND “refugee children”, AND Relicense”

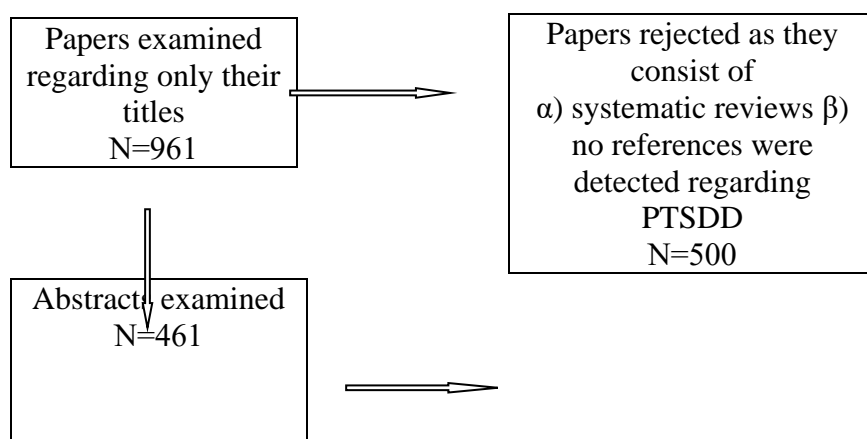
Inclusion and exclusion criteria

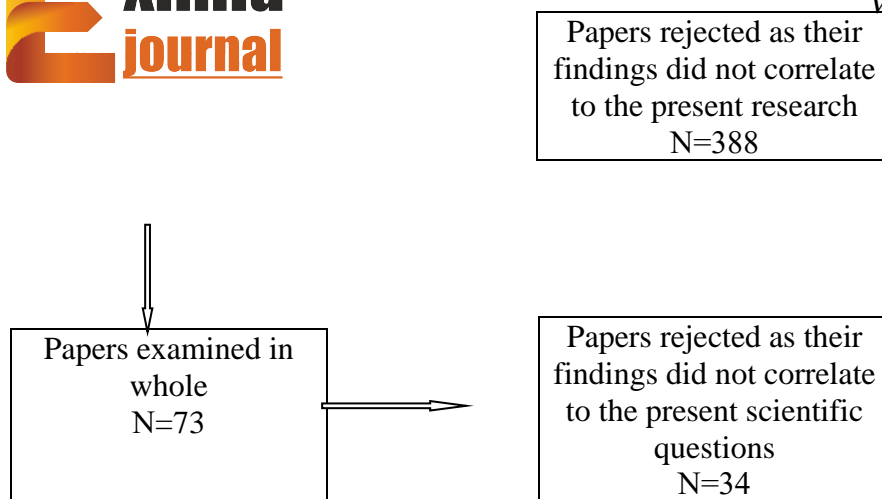
The search and detection of researches was based upon certain inclusion and exclusion criteria. The inclusion criteria were the following: papers should be published during the last decade (2011-2021), in English, that present researches in this scientific field and additionally underaged refugees should be included. Systematic reviews and meta-analyses were also excluded from the present literature review.

Literature review strategies

Initially, the present search led to the collection of 961 papers whose titles were studied. Specifically, 400 papers were detected from Google Scholar, 169 papers from Science Direct, 93 papers from Pubmed and 272 papers from Wiley Library. From the total of 961 papers 500 were rejected based on two main reasons. The main reason was that the majority among them referred to systematic reviews and not main researches in the field, whereas the second reason referred to their focusing in other scientific matters than PTSD presented among underaged refugees. The abstracts of the remaining 461 papers were examined in order to detect various information regarding the issue examined leading to the rejection of 388 from them, thus 73 papers were selected. A total of 315 papers were rejected based on their findings, as no correlation to the scientific questions of the present literature review was detected. From the 73 remaining papers only 39 were finally selected that seemed to strongly correlate with the issue examined and thus are presented in the present paper. The selection of these researches is depicted analytically in the following flowchart.

Papers detected in Pubmed N=93	Papers detected in Wiley Library N=272	Papers detected in Science Direct N=169	Papers detected in Google Scholar N=400
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Picture 1. Flowchart

3. Results

Among the first group of empirical studies 20 researches are included that examine the correlation existing between Post-Traumatic Stress (PTSD) and trauma that both children and adolescent refugees experience. All of these researches focus on the type of trauma that influences the emerge of this specific disorder.

The study of Crea et al. (2018) examined the appearance of PTSD as a type of psychopathology among underaged refugees. This was a qualitative study conducted by approaching selected groups of the population. The participants mentioned to the psychological burden they experience, underlining the influence trauma presents. In particular, they described enduring traumatic experiences in both their countries as well as during their flee to USA. The traumatic incidences that affected them leading to the development of PTSD symptoms were human trafficking for sexual purposes, violence deriving from the community, interfering with crime, alcoholism among the family and sexual abuse. The participants claimed that the necessity of psychological support in order to overcome the post-traumatic experience they suffered.

The study of Ehntholt et al. (2018) also examined traumatic incidences and the emerge of PTSD among underaged refugees. This study aimed at clarifying the psychological health of underaged refugees seeking for shelter among hospitality units in Great Britain. A total of 35 underaged refugees participated (age range: 13-17). The participants answered to a series of questionnaires distributed, including the "Reactions of Adolescents to Traumatic Stress" aiming to detect the influence of trauma to the psychological health, the "Stressful Life Events" aiming to examine the history of trauma and the "Detention Experiences Checklist" aiming to clarify the experiences of the participants during their stay in the hospitality units. Interviews were also conducted based on Clinical Interview for DSM-IV. The findings of the present study revealed that 29% of the participants experienced PTSD whereas 51% presented a severe deterioration of its symptoms. During the research the traumatic events the underaged participants experienced were examined revealing that the majority of them experienced a brutal separation from their families, death of a beloved one, physical abuse and sense of intense danger. Traumatic experiences were also present during their stay in the hospitality units. The researchers underline their difficulty to communicate and physical abuse were the main traumatic incidences related to the development of the disorder.

Examining the psychopathology as well as the level of psychological health of underaged refugees was the main scientific aim of the empirical study of Gunes & Guvenmez (2019). During this research 1518 children and adolescents from Syria participated (age range: 8-16). The study was based on the distribution of questionnaires, in specific the "Children's Revised Impact of Event Scale-13"

aiming at evaluating PTSD and the “Children’s Depression Inventory”, a questionnaire revealing depression symptomatology. The participants were divided in three groups based on the type of their trauma. The first group included underaged that were victims of conflicts and war, the second group included underaged that were exposed to natural disasters, human violence, accidents and sexual abuse and the third group included underaged that experiences incidents from both of the previous categories. The majority of the participants (63.1%) experiences symptoms of PTSD. The group that was exposed to both traumas of war and various traumatic incidents presented more intense symptoms of the disorder. The group exhibiting less intense symptoms of PTSD was the one including underaged that were exposed to natural disasters, human violence, accidents and sexual abuse.

Another empirical study that reveals the impact of trauma in the development of PTSD among underaged refugees is the one conducted by Jensen, Fjermestad, Granly & Wilhelmsen (2015), during which the psychological health of 93 participants (10-16 years old) leaving in Norway was estimated based on the utilization of questionnaires. This quantitative research revealed that negative incidences these underaged have suffered correlate to the emerge of the disorder. The most frequent trauma detected was the death of a loving one, whereas the less frequent trauma was sexual abuse. The findings of this study underlined the strong correlation existing between the amount of traumatic incidence and PTSD symptomatology, thus underaged experiencing multiple trauma presented an elevated symptomatology of the disorder revealing that the pre-existing trauma leads to the appearance of PTSD. Similar findings were detected in the empirical study of Manzanero et al. (2017) that was conducted with the participation of 1850 children and adolescents (6-15 years) from Gaza Strip. From the group of the participants 275 were diagnosed with PTSD revealing a significant positive correlation between the diagnosis and the amount of traumatic incidents experienced. Participants that were exposed to multiple trauma were those exhibiting elevated PTSD.

The significant role of the amount of traumatic incidences on the development of PTSD among underaged refugees is also detected during the study of Yektaş, Erman & Tufan (2021). The researchers examined the factors relating to PTSD in a sample of 338 children refugees. The psychological health of the refugees were estimated based in psychiatric evaluations. According to the findings of this study 69.5% if the participants experienced a traumatic incidence, with a significant correlation being detected between the appearance of multiple traumatic facts and the symptomatology of PTSD. The present research focuses on emphasizing the type of the trauma that is associated to the development of the disorder, underlining that experiencing explosions and sexual abuse are the two major traumatic incidences that affect strongly the emerge of PTSD.

The significance of the amount of traumatic incidences on the development of PTSD symptomatology among minor refugees was also revealed based on the study of Vervliet, Lammertyn, Broekaert & Derluyn (2014). This empirical research aimed at detecting the psychological health of unaccompanied underaged refugees living in Belgium. The researchers examined the course of the psychological health of the participants from their arrival at the host country. During the research four questionnaires were distributed translated and validated in different languages. The first questionnaire was the “Hopkins Symptom Checklist-37A” aiming at evaluating the symptoms of anxiety and depression. The second questionnaire was the “Stressful Life Events questionnaire” aiming at detecting the traumatic incidences experienced, the third questionnaire was the “Reactions of Adolescents to Traumatic Stress questionnaire” that reveals the presence of PTSD symptoms and the fourth questionnaire, the “Daily Stressors Scale for Young Refugees”, aiming at examining the multiple stressful factors that the participants endure during their stay in the host country. According to the findings of this study the majority of the participants has experienced negative incidents in their

hometown, during their travel and in the host country. Additionally the participants exhibited an elevated level of PTSD, whereas the amount of traumatic incidences experienced and daily stressful factors presented in the host country were strongly positively correlated to the symptomatology of PTSD.

Traumatic incidents that are significantly correlated to the appearance of PTSD among underaged refugees are also revealed based on the empirical study of Thabet, Thabet & Vostanis (2016), in which 251 children and adolescents (6-16 years old) deriving from the Gaza Strip participated. The traumatic incidents associated to the disorder were witnessing the murder of a relative as well as the destruction of the residence of a neighbor leading to the economic destruction of the family. These findings reveal that underaged that witnessed violent incidences as a result of armed conflicts are in great danger of exhibiting PTSD. Similar findings are revealed via the research of Jakobsen, Demott & Heir (2014) conducted with the participation of 160 male refugees deriving from various countries of origin (Afghanistan, Somalia, Iran) that live in Norway. 41.9% of the participants suffers from psychiatric disorders with PTSD detected in an elevated frequency. This specific disorder is presented in an enhanced level among underaged experiencing three traumatic incidences, threat of their lives, witnessing violent behaviors against others and imprisonment. These three negative experiences seem to strongly correlate to the political and armed conflicts that prevail in the countries of origin of these minors.

The study of Beni Yonis et al. (2019) examined 1768 adolescent refugees from Syria that live in Jordan aiming at revealing the correlation between traumatic incidences and PTSD. Among the participants, 31% presented symptoms of the disorder. The death of a parent was detected as the factor most strongly correlated to the symptomatology of the disorder, revealing that adolescents whose parent is missing exhibit enhanced symptoms of the disorder in comparison to those that both parents live. Similar findings are presented in the study of Gormez et al. (2017) that was conducted with the participation of 218 underaged refugees (9-15 years old) living in Turkey and originating from Syria. 18.3% of the participants presented symptoms of PTSD whereas 60.9% expressed anxiety disorders. In this study the participants were examined regarding their psychopathology as well as the factors leading to the emerge of PTSD. The psychopathology of the participants was estimated based on the distribution of the questionnaires "Spence Children's Anxiety Scale" and "UCLA PTSD Reaction Index". The outcomes of the statistical analysis revealed a strong correlation between PTSD and the loss of a loving one leading to the conclusion that this traumatic incidence is strongly correlated to the appearance of symptoms of PTSD.

Another study that reveals the significant influence of losing a loving one on the expression of PTSD among underaged refugees is conducted by Yayan, Düken, Özdemir & Çelebioğlu (2020), aiming at detecting the levels of PTSD and depression of children from Syria that live in hospitality units. In the present research 1115 children from Syria participated with a mean age of 10.53 years. The levels of PTSD symptomatology were estimated based on the questionnaire "Child Post-Traumatic Stress Reaction Index", the levels of anxiety were examined by utilizing the "State-Trait Anxiety Inventory for Children-Trait Form" and depression levels were presented based on the "Children's Depression Inventory". The outcomes of the statistical analysis revealed that PTSD symptoms are presented in a highest frequency among the participants, especially on children who experienced the loss of a parent. Additionally a strong correlation was detected between the symptoms of PTSD, anxiety and depression leading to the conclusion that elevated anxiety and depression results to the presence of elevated symptoms of PTSD.

The influence of the loss of a loving one on the development of PTSD among children and adolescent refugees is also depicted based on the empirical study of Betancourt et al. (2012) that aimed

at examining the profile of trauma, psychopathology and behavioral and functional characteristics of underaged traumatized by war. A total of 60 children and adolescents (mean age 13.1 years) participated revealing that 30.4% presented PTSD. All of the participants were exposed to political violence or war, whereas among traumatic incidences presenting the highest frequency are included traumatic loss, grief, separation, forced immigration and social and family abuse. This research underlined that children and adolescents who participated have experienced more than one traumatic incidence and this exposure is regarded as the main cause of the development of PTSD.

The death of a loving one does not consist the only traumatic incidence that arises the danger of PTSD development in children and adolescent refugees. The study of Sapmaz et al. (2017), based on an empirical research in which participated 89 underaged refugees living in Turkey, revealed two additionally significant factors. Among the participants 8 minors expressed symptoms of PTSD with the appearance of the psychopathology strongly correlated to a traumatic incidence such as witnessing the death or the injury of a person. This finding seems of great importance as it reveals that the traumatic incidence inducing the development of PTSD is not mandatory to include a loving one, whereas psychological trauma can derive from the exposure to violence affecting any individual.

The empirical study of Kvestad et al. (2021) conducted in Norway also reveals the influence of traumatic experiences on the development of PTSD among underaged refugees. In this study two groups of minors were examined regarding trauma and PTSD. The first group consisted of adolescents and young adults refugees and the second group included adolescents and young adults that receive help from foster care. The outcomes of the statistical analysis revealed that the two groups strongly differ regarding the frequency and the profile of both traumatic incidences and PTSD symptomatology. In particular, the group of refugees presented an elevated level regarding the exposure to traumatic incidences in comparison to the other group of young participants. Additionally an important difference was detected regarding the profile of the traumatic incidences experienced by the two groups. The group of refugees has endured traumatic incidences of violence that are correlated to situations beyond the family context in a greater frequency. Among these incidences terrorism/war, threats/bullying and physical abuse from a non relative were included. Regarding the symptoms of PTSD the group of young that receive foster care presents more severe clinical symptoms than the group of refugees, whereas refugees present an elevated level of sub-clinical symptoms. Refugees specifically exhibit the symptom of reliving the traumatic incidence. The findings of this study reveal that refugees that experienced traumatic incidences that are associated to the social impact of armed conflicts and violence and these experiences are correlated to the development of PTSD, specifically by reliving the trauma.

The above findings support the assumption that traumatic incidences correlated with the appearance of PTSD among underaged refugees derive as an effect of armed conflicts endured. The study of Karam et al. (2019) also leads to this conclusion, revealing also another significant outcome. The researchers examined 549 children and refugees that experienced the armed conflicts in Syria, with half of the participants exhibiting symptoms of the post-traumatic disorder. The emerging symptomatology was significantly correlated to the negative consequences of war, such as the destruction of households and the deprivation of freedom of movement due to armed conflicts. An important conclusion of this study was that additional negative experiences of the children and adolescents are also correlated to the expression of the psychopathology, based on the strong correlation of PTSD with negative circumstances of life during childhood, such as impulsive behavior of the parents and physical abuse. These findings reveal that minor refugees are psychologically traumatized due to war as well as due to negative circumstances of life leading to the development of PTSD.

The study of Völkl-Kernstock et al. (2014) also reveals the role of traumatic incidences correlated to war and the burst of PTSD development among young refugees. In this study unaccompanied children and adolescents deriving from Africa and living in Austria were included. The participants were examined regarding the specific disorder based on the utilization of “UCLA PTSD Index and inventories” and regarding the traumatic incidence based on “Scales for Children Afflicted by War and Persecution”. According to the findings of this research 17% of 41 participants met the criteria regarding the disorder examined whereas 29.3% is considered as a group of elevated risk. During this study the correlation between the appearance of severe symptoms of PTSD and a war associated traumatic incidence was underlined. Among these incidences violence deriving from the community, war violence, political violence and intrapersonal violence were included. The traumatic incidences leading to the expression of PTSD are school violence, drug dealing and destructions. Concluding this study revealed that girls experience PTSD in an elevated level in comparison to boys.

The influence of traumatic incidences on the psychological health of children refugees is also depicted on the study of Stathopoulou, Papadatos and Anagnostopoulos (2016) who examined children from Palestine that had experienced the traumatic effect of bombing, including children from the Gaze Strip and the West Coast. The psychological situation of children from the Gaze Strip that had experienced aerial bombings was compared to the related situation of their peers from the West Coast that had not such experiences. The evaluation of the psychological state of the participants was based on the utilization of questionnaires such as the “Clinician Administered PTSD Scale for Children and Adolescents” and the “Youth Self Report”. The present study, in accordance to previous researches, revealed that the stressful experiences of children, such as aerial bombing, are positively correlated to the development of PTSD. The researchers underlined the elevated symptomatology detected among the group of children originated from the Gaze Strip that had experienced life threatening incidences. Children bearing this kind of experiences present an enhanced risk of developing a post-traumatic symptomatology that may prevail even during their stay in the host country.

The study of Stathopoulou et al. (2016) had led to similar conclusions with the study of Koltveit et al. (2012) which was conducted based also on the participation of minor refugees from the Gaze Strip. The study of Koltveit et al. (2012) aimed at examining the correlation between the exposure to stressful factors associated to war and the psychological burden upon adolescents. 139 adolescents from 12 to 17 years old participated in this research during which four questionnaires were distributed, validated in Arabic. The first questionnaire, the “Gaza Traumatic Check List”, aimed at examining the traumatic incidences of war, the second questionnaire, the “Revised Child Impact of Event Scale”, aimed at examining the symptoms of PTSD, the third questionnaire, the “Revised Children’s Manifest Anxiety Scale”, estimated the levels of anxiety detected and the fourth questionnaire, the “Depression Self-Rating Scale for Children”, estimated the levels of depression. Based on the results of this study the traumatic incidences of war imposed in a high frequency upon the participants were “witnessing dismembered corpses on television”, “hearing the bombings”, “hearing the sound of military forces”, “evidences of bombings”, “witnessing deaths caused by missiles” and “learning the death of a relative”. A prevalence of symptoms of PTSD was detected among these participants. The intensity of the symptoms was influenced by the intensity of the exposure to the traumatic incidences, as the adolescents who presented an elevated symptomatology of PTSD were those who experienced more severe traumatic incidences.

A later study of Stathopoulou, Liouni, Salapata & Drigas, (2022) aimed at investigating the emotional difficulties presented in children refugees in northern Greece borders and their correlation to PTSD’s symptoms. This study focused on examining children who were separated from their families

during their transportation to Europe. 5 children from Syria aged from 11 to 16 years participated in this research and each of them was given an Android-based mobile phone with the online forms of the following questionnaires: the “Clinician-Administered PTSD Scale for DSM-5 (CAPS-5)” and the “Achenbach Adolescent Self-Report Questionnaire (YSR 11-18)”. The findings of this study revealed the emerge of high levels of PTSD as well as the presence of intense emotional difficulties among the participants. A significant correlation was detected between the level of emotional problems and PTSD, whereas the type of trauma was also related. The most notable finding of this research was that, despite the limited number of participants, a strong correlation was revealed between the type of the traumatic experience and the level of the symptoms of PTSD. Risk of a family member loss seems to prevail other traumatic experiences and parental loss specifically is the biggest traumatic stimulus detected. The threat of the family is interpreted as the collapse of safety as perceived in the eyes of the minors leading to intense psychological consequences.

In this category of researches, the study of Gervais et al. (2021), an empirical study of mixed methodology, is also included. In this study 43 children refugees and immigrants recently arriving in the host country participated, whereas the researchers were based upon both the distribution of questionnaire as well as the conduction of personal interviews. The findings of this study revealed that these children experienced traumatic incidences in their country of origin, during their journey and during their arrival at the host country that affected their accommodation. These difficulties seem to strongly correlate to the appearance of symptoms of PTSD. The present study underlined that refugees seem to adapt more easily than immigrants, due to the fact that they receive greater support, although this specific group of children seems to express enhanced symptoms of PTSD deriving from the traumatic experiences endured.

Social and family factors and the development of Post-Traumatic Stress Disorder Symptoms

In this category 19 papers are included. In these papers scientific findings depict that factors associated with the family and social life of underaged refugees influence the development of emotional resilience regarding trauma confrontation. In the study of Yayan & Düken (2019) the levels of depression, anxiety and PTSD of 738 children and adolescents refugees living in Turkey were estimated. In this field family and social factors that influence the psychopathology of minor refugees were examined. Among the findings of this empirical study relied the important role of social factors, especially the economic state of the parents, their educational level and their profession upon the development of PTSD. The researchers concluded that children raised within families of an elevated socio-economic state are those exhibiting a rather low level of PTSD, revealing the influence of family and social frame in the appearance of psychopathology.

The findings of the study of Yayan & Düken (2019) present common elements with those deriving from the study of Yayan (2018) which was conducted via the participation of 967 children and adolescents (9-15 years old) refugees from Palestine. The researcher examined the factors associated with PTSD among minor refugees. The presence of PTSD was estimated based on the utilization of the questionnaire “Child post traumatic stress reaction scale”. According to these findings, children that have lost one parent and those whose parents present a low educational level are those exhibiting an elevated symptomatology of the disorder. Both studies conclude that the educational level of parents burdens the development and the consolidation of PTSD.

The importance of family frame on the psycho-social development and the confrontation of trauma among underaged refugees is also depicted by the study of Scherer et al. (2020). According to

this empirical research underaged refugees that derive from numerous families present less possibilities of developing PTSD. The researchers attribute this finding to the attention and support offered leading to development of emotional resilience. Families with numerous members tend to benefit underaged refugees as the relations developing among their members seem to offer necessary support. Support seems to correlate to the development of emotional resilience leading to the successful confrontation of trauma.

In the field of examining the emerge of PTSD among underaged refugees the role of parents regarding the emotional health and development of children is also revealed. The liaison that children cultivate with their parents may affect the appearance of psychopathology after their exposure to a traumatic incidence. The study of Eruyar, Maltby & Vostanis (2020) approaches the influence of parents upon the development of psychopathology of minor refugees aiming at depicting the relation between the parental strategies, the emotional parental bond and the emotional health of underaged refugees. In this study 322 underaged refugees (8-17 years old) from Syria that live in Turkey participated. During the research four questionnaires were distributed, the first questionnaire was the “Children Revised Impact of Event Scale–8” aiming to estimate PTSD, the second questionnaire was the “Strengths and Difficulties Questionnaire” aiming at evaluating the general psychological health, the third questionnaire was the “Security Scale” aiming at estimating the emotional bond and the forth questionnaire was the ”Egna Minnen Beträffande Uppfostran for Children” aiming at depicting the parental strategies applied. Based on the findings of the present research children that develop a safe bond with their mother and father appreciate their parents as less rejecting, whereas children that develop a safe bind with their father regard their parents as emotionally warm. Emotional liaisons developed among children and parents seem to predict the development of PTSD symptoms. Children and adolescents developing safe bonds are those presenting less risk regarding the appearance of the disorder.

The role that parents retain regarding the development of emotional resilience for trauma confrontation is also revealed via the study of Eruyar, Maltby & Vostanis (2018). This specific research examined the correlation between traumatic experiences and emotional health of minor refugees, underlining the influence of parental factors to the relation of these two variables. According to the findings detected parental factors and specifically their psychopathology affects the emotional health of children. Children that are raised by parents presenting a balanced emotional health develop emotional resilience and thus tend to confront successfully the trauma deriving due to them being refugees. Similar findings derive from the empirical study of Scharpf, Kyaruzi, Landolt & Hecker (2019) that examined the presence of PTSD among children refugees and their parents. The researchers concluded that mothers exhibited an elevated level of PTSD in comparison to the fathers, whereas the presence of both traumatized parents is significantly correlated to PTSD development among children. Children raised by parents expressing psychopathology seem to face difficulties to confront their trauma.

The crucial role of parents regarding the confrontation of trauma is also depicted in the study of Khamis (2019a) that aimed at revealing the psycho-social adaptation of underaged refugees from Syria that live in Lebanon and Jordan. During this research both the psychopathology as well as the variables related to the traumatic incidence, before and after its occurrence, were analyzed. Additionally, factors associated to family relations were also examined. The sample of this study consisted of 500 children and adolescents from 8 to 17 years old. The statistical analysis performed depicted the existence of a significant correlation between family relations and the psychopathology of young refugees. In particular, significant negative correlations are detected between psychopathology

and family unity, as refugees deriving from united families present lower symptomatology in comparison to those whose families are not united. This study also revealed the positive correlation between the psychopathology of children and family conflicts, as increased frequency of arguments lead to an elevated psychopathology. These findings depict that experiences that refugees gain from their families influence the way they confront trauma and the level of their psycho-social adaptation.

The impact of parents regarding the development of PTSD among a group of young refugees is revealed via the findings of the empirical research of McGregor, Melvin & Newman (2015). In the present study 50 adolescent and young adults participated (age range: 12-21 years). The research was based on the distribution of questionnaires including the “Child PTSD Symptom Scale”, aiming at detecting PTSD, the “Children’s Coping Strategies Checklist–Revision 1” aiming at examining the strategies of trauma confrontation and the “Youth Experience Scale for Refugees”, aiming at revealing the traumatic experiences of refugees. The findings of this study support that family and specifically the separation from its main members is significantly positively correlated to the development of PTSD symptoms, as teenagers experiencing separation tend to exhibit more intense symptoms of the disorder.

Additionally, the examination of the impact that parents retain regarding trauma confrontation and the development of psychopathology has led to the detection of elements that focus upon the significance of the maternal influence. The study of Cortina et al. (2013) revealed that the state of refugee that the mother burdens is significantly correlated to the psychopathology of the children. The existence of a stable relation from the part of the mother acts protectively on the psychopathology of minor refugees, therefore the mother and her stances and perceptions affect the development of children refugees.

The maternal role regarding the development of emotional resilience for trauma confrontation is also revealed in the study of van Ee, Kleber & Mooren (2012) aiming at detecting maternal PTSD, the parent-child interaction and the psycho-social development of pre-school age children. In this study 49 refugee mothers and their children participated. The statistical analysis demonstrated that the higher the symptoms of maternal PTSD were, the more intense were the psycho-social difficulties of the children detected. Maternal psychopathology negatively influences the development of emotional resilience and trauma confrontation. Similar findings were detected based on the research of Javanbakht et al. (2021) aiming at revealing the environmental and biological factors affecting the emotional resilience and the distressed emotional health of underaged refugees. Two groups of families participated in this study, the first group consisted of families from Syria and Iraq and the second group included immigrants from Arabia. The findings of this research revealed that parental emotional health, specifically maternal health, is significantly correlated to the symptoms young refugees exhibit. Additionally the distressed maternal emotional health put strains upon the emotional resilience and health of off springs.

Furthermore, during the examination of PTSD of minor refugees the correlation of the disorder with the characteristics of the social frame of the host country within the minors live is also depicted. The researchers examine the social factors that burden or protect young individuals from the presence of this disorder. Among these studies relies the research of Scharpf, Mkinga, Masath & Hecker (2020) that was conducted based on the participation of 217 refugees from 7 to 15 years old. The findings of this quantitative study revealed that the social net and specifically friendly relationships among children are significantly correlated to the disorder, as children developing friendly relations with peers are those that experience PTSD in a rather minor level. Similar findings were depicted by the study of Shabbir, Hameed, Mehmood, Ainoi & Ishaq (2020) that was conducted based on the participation of 300 adolescent refugees. This study revealed a negative correlation between social support and PTSD’s

symptomatology as the lower the social support offered, the higher the symptomatology detected. Thus the development of a social net with peers seem to enable refugees not to develop PTSD.

Furthermore, the educational environment is detected among social factors influencing underaged refugees' PTSD. The study of Trentacosta, McLearn, Ziadni, Lumley & Arfken (2016) revealed a strong correlation between the school environment and post-traumatic symptomatology. 211 young individuals from Iraq that live in USA participated in this study. The researchers detected that the participants who experience positive emotions in school present lower symptoms of PTSD in comparison to other underaged refugees, leading to the conclusion that school may act as a social net offering support and protection to refugees at risk of developing psychopathology.

Additionally, characteristics that refer to life circumstances prevailing in the host country are also included among social factors associated to the development of PTSD. The study of Khanis (2019b) revealed that children and adolescent from Syria that live for a long period of time in host countries (Jordan and Lebanon) are those experiencing PTSD' symptomatology in a rather lower level. Their prolonged residence in the host country acts protectively by enhancing feelings of security to these minors. In addition, the protection of underaged refugees in these host countries derives from special care units in order to secure their protection thus their emotional resilience is enhanced. The study of Khamis (2019b) also led to another interesting outcome regarding the role of emotional resilience upon trauma confrontation. The researcher concluded to the significant correlation between PTSD and family relations, as a negative correlation is detected between the symptoms of PTSD and the expression of feelings within the family. Underaged refugees that were raised in families supporting free emotional expression present lower intensity regarding the PTSD's symptoms, as emotional expression acts protectively against the emerge of the psychopathology.

The place and the circumstances of residence are also correlated to the symptomatology of the disorder. The study of Bronstein, Montgomery & Dobrowolski (2012) revealed this correlation based on the participation of teenage male refugees from Afghanistan. In particular, the findings of this research detected that the residence of minors in units of Social Services is significantly correlated to the presence of PTSD. In fact refugees that receive this kind of aid from the host country seem to encounter a high risk of developing post-traumatic symptomatology. Similar findings are revealed via the study of Bronstein, Montgomery & Ott (2013) that was conducted based on the participation of 222 minor refugees from Afghanistan. The researchers underlined that the long period of residence in the host country protects against the development and consolidation of psychopathology among minor refugees, as this period seem to support the maintenance of emotional resilience and therefore the successful confrontation of trauma.

At last, studies that emphasize regarding the factor of emotional resilience are also included among the researches of this category, such as the study of Longobardi, Veronesi & Prino (2017) that was conducted with the participation of 19 unaccompanied adolescent refugees in Italy. This study aimed at examining the traumatic experiences of teenagers before and after their transportation, as well as the levels of emotional resilience and the presented psychopathology. The findings of this empirical study reveal that all participants had experienced a case of abuse whereas half of them experienced sexual abuse before or even during their transportation. The most frequent traumatic experiences detected were being hit by an object, punishment inside the school environment or at home, being obliged to perform dangerous acts, harassment, being obliged to steal or destroy property, sexual abuse and being obliged to watch pornographic material. Refugees expressed a high level of PTSD's symptoms, but also teenagers exhibited normal levels of emotional resilience, as it is regarded as a

factor not being influenced by emotional or physical abuse, thus supporting the successful confrontation of trauma.

Emotional resilience's skills of underaged refugees were also examined via the qualitative study of Nagi et al. (2021) that was conducted based on personal interviews in focus groups of 15 adolescent refugees in order to present the influence of emotional resilience on their functionality. The outcomes of the thematic analysis revealed that teenagers adapted and confronted trauma through social and intrapersonal relations developed. The participants underlined that the development of strong relations enabled them to enhance their emotional resilience and to confront trauma.

4. Discussion

Underaged refugees is a group of people that have endured a series of traumatic experiences that may accompany them through their whole life. The present systematic literature review focused on examining the post-traumatic experiences of underaged refugees and especially the development of Post-Traumatic Stress Disorder symptoms. War leads to the intimidation and abuse of children and adolescents and is correlated to the loss of the loving ones (Ehnholt et al., 2018). In fact children and adolescents come across great personal and social losses that can hardly endure. The traumatic experiences deriving from war enhances the risk of development of PTSD symptoms. It must be underlined that both children and adolescents that have experienced this kind of traumatic incidences exhibit elevated symptoms (Okello, Nakimuli-Mpungu, Musisi, Broekaert & Derluyn, 2013).

One of the common findings of the empirical studies included is the influence of death upon the development of PTSD. The death of a loving one as well as the exposure to incidences related to death seems to initiate the psychopathology of minor refugees, due to the fact that underaged refugees come across circumstances threatening directly or indirectly their lives leading to increased anxiety. Stress and fear emerging can result to the appearance of PTSD symptomatology (Sapmaz et al., 2017). Furthermore, the examination of the empirical researches included in the first category led to the revelation of findings that depict the important role that the amount of traumatic incidences play regarding the development of PTSD among underaged refugees. Multiple researches described present the strong positive correlation between the amount of traumatic incidences and the symptomatology of the disorder (Manzanero et al., 2017; Vervliet et al., 2014; Yektaş et al., 2021). Thus minor refugees seem to come across multiple traumatic incidences that negatively influence their development leading to the increased risk of PTSD symptomatology to appear. In the same field additional similarities are detected among the findings of the empirical researches. The majority of these studies concluded that the traumatic experiences of minor refugees are correlated with incidences taking place in both their country of origin as well as in the host country (Vervliet et al., 2014; Yayan et al., 2020). These findings support the assumption that the constant traumatizing of minors enhances the risk of PTSD. The examination of the results of the first category leads to important conclusions. The disorder is exhibited in higher frequency among this specific population and is accompanied by the presence of other psychological disorders. Specifically traumatic experiences that derive from an armed conflict such as the loss of a loving one negatively influences the psycho-social development and PTSD of children and adolescents.

Additionally, among the important findings of the present systematic review findings regarding the emotional resilience of minor refugees are included. Emotional resilience retains a positive and protective influence regarding the psycho-social development of refugees. Minors that exhibit enhanced emotional resilience are those that express less intense symptoms of PTSD. In fact this group of minors

confronts rather successfully post-traumatic experiences (Longobardi et al., 2017; Nagi et al., 2021). This outcome is also depicted in other theoretical and empirical researches attempting to depict the risk factors as well as the protective factors that relate to the psychological health of minor refugees. Emotional resilience is regarded as an important factor that positively correlated to the emotional health of underaged refugees. Young people that have developed this specific ability before their exposure to trauma seem to be able to retain their functionality and therefore are less burdened by the psychological trauma (Arnetz et al., 2013). Emotional resilience of underaged refugees is influenced by social and family factors, in align to the findings presented by the global scientific community. According to Wessells (2018) social environment in which the minor refugees are integrated can influence the maintenance of their emotional resilience and thus the successful reaction against trauma. Based on the examination of empirical studies, social support, living circumstances in the host country and educational environment influence the development of PTSD among underaged refugees. In fact minors that after being traumatized were placed in a supporting environment are those receiving enhanced protection. On the contrary, minor that did not receive any social support are those that come across elevated difficulties and exhibit more intense symptoms of PTSD (Bronstein et al., 2021; Scharpf et al., 2020; Trentacosta et al., 2016).

Furthermore, based on the literature review conducted findings regarding the role that parents retain regarding the development of emotional resilience and trauma confrontation by underaged refugees was depicted. In the studies presented the emotional health of parents and the relationship between them and children or adolescents is correlated to their psych-social development. In these studies, the influence of family relations upon the psychopathology of underaged refugees is revealed. Family unity and the development of positive parental liaisons are described as two family characteristics that diminish the risk of PTSD among underaged refugees (Erucar et al., 2020). Additionally, the literature review revealed that the deteriorated emotional health of the parents increases the risk of PTSD development among minor refugees (Scharpf et al., 2019). This finding regarding the role of the parental emotional health and the development of emotional resilience of children is also depicted among other researches such as the study of Nielsen, Carlsson, Rimvall, Petersen και Norredam (2019). In this empirical research as well as in the present literature review the negative influence of the deteriorated emotional health of parents on the emotional health of minor refugees, and thus on the development of PTSD, was revealed. Similar findings were demonstrated in the study of Okello et al. (2015) that underlined the significant role of the emotional bond that underaged refugees cultivate with their mothers regarding their psycho-social development. Mother relations seem to retain an important influence upon emotional resilience and trauma confrontation.

Finally we have to underline the role of digital technologies in education domain as well as in the rehabilitation & post traumatic domains, that is very productive and successful, facilitates and improves the assessment, the intervention, educational and therehabilitation procedures via Mobiles [59-76], various ICTs applications [77-132], AI & STEM ROBOTICS [133-149], and games [150-167]. Additionally the combination of ICTs with theories and models of metacognition, mindfulness, meditation and emotional intelligence cultivation [168-236] as well as with environmental factors and nutrition [53-58], accelerates and improves more over the educational and rehabilitation practices and results and especially among refugees.

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