Satakunnan ammattikorkeakoulu
Satakunta University of Applied Sciences

OLESJA MESTSANINOVA

Trauma-informed care – Scoping review

DEGREE PROGRAMME IN WELFARE TECHNOLOGY
2022

Author(s) Mestsaninova, Olesja	Type of Publication Master's thesis	Date October 2022
	Number of pages 48	Language of publication: English

Title of publication
Trauma-informed care – scoping review

Degree Programme
Welfare Technology

Abstract

The purpose of this thesis was to increase the knowledge about trauma-informed care within mental health settings to enhance the quality of patient care. To answer the main question how trauma-informed care is linked with mental health, three sub-questions have been defined: what the main principles and approaches of trauma-informed care are, how trauma-informed care is implicated into a nursing mental health practice and how technology is used in trauma-informed care.

Scoping literature review was used as a research method for this thesis. Literature searches were conducted in three following databases ScienceDirect, PubMed and PsycNet to discover relevant studies published on the topic of the study. The JBI three-step data extraction method and The Critical Appraisal Skills Programme Tool (CASP) were used for checking the quality of articles.

The study has found a link between trauma-informed approach and improved mental health condition among both groups care providers and care receivers. The link between trauma-informed care and mental health nursing practice was showed through subjective stress measures and biological measures. The trauma-informed care approach includes different kinds of practices based on SAMHSA's six guiding principles: cultural, historical and gender issues, empowerment and choice, collaboration and mutuality, safety, trustworthiness and transparency, peer support. The study demonstrated the potential of implementation trauma-informed care and therapeutic Virtual Reality in mental health settings. Trauma-informed care may be contributed to institutional circumstances, workplaces as well as to clinical and organizational levels.

Keywords
trauma-informed care, mental health, trauma-informed approach, trauma-informed practice, virtual reality, telemedicine

CONTENTS

1 INTRODUCTION

In recent years, the term trauma-informed has grown in use. Becker-Blease (2017, p. 131) found out that since at least 2004, there has been a considerable increase in Google searches for the term "trauma-informed" with a noticeable increase since 2011. People are having more conversations about trauma and the ways it impacts people. There are increasing number of organizations stating that they and their programs are trauma informed. Moreover, over the last 30 years, trauma-informed care concepts have developed from a number of streams of thinking and invention. The term "trauma-informed" and its concepts are currently used in a wide range of settings, from social fields that includes criminal justice institutions, hospitals, universities to child welfare agencies and even schools. (Wilson, 2013, p. 1.) Although there is a rise of interest in adopting trauma-informed therapy for addressing the physical, behavioral and social effects of trauma, there is a dearth of knowledge on the best way to standardize the approach to fit patients' requirements and understanding the meaning of trauma-informed care and its difference from trauma-focused care.

The prevalence of trauma experiences and their negative effect and long-term consequences to health underline the importance of the research focused on trauma-informed care. A significant number of individuals who seek therapy in mental and behavioral health settings have a history of traumatic events in their life and, unfortunately, frequently fail to realize the significant impact of trauma on their life and current problems (SAMHSA, 2014, p. 4). An understanding of traumatic stress, its reactions and how it affects the brain, especially, in childhood could assist in developing and implementing trauma-informed approaches. In addition, it could help healthcare providers better understand the actions and responses of traumatized clients. It is more important to comprehend the broad incidence and impacts of trauma than to have a set of guidelines. Even though, there are already existing studies concerning trauma-informed care, the topic is novel as there are still gaps existing in practical strategies, guidelines and understanding of the impact of trauma.

2 PURPOSE, AIM AND RESEARCH QUESTIONS

The purpose is to increase the knowledge about the trauma-informed care within mental health settings to enhance the quality of patient care. The aim of this study is to outline the link between trauma-informed care and mental health, more specifically, explain principles and approaches of trauma-informed care, its implications into a nursing mental health practice and how technology is used in trauma informed-care.

Main question:

- How trauma-informed care is linked with mental health?

Sub questions:

- What are the main principles and approaches of trauma-informed care?
- How trauma-informed care is implicated into a nursing mental health practice?
- How is technology used in trauma-informed care?

3 THE CONCEPT OF TRAUMA-INFORMED CARE

Trauma may impact everyone, regardless of age, race, gender, ethnicity, or sexual orientation, socioeconomical status and geographic location. A traumatic experience could be the outcome of an unanticipated single or even series of events beyond a person's control, such as violence, neglect, loss, war, disaster and such experience could take many forms. (SAMHSA, 2014, p. 7; p. 2.) Levenson (2017, p. 105) emphasized that traumatic events might be anything depending on the age group experiencing that. A traumatic event for a kid or adolescent might be the consequence of bullying, emotional neglect, parent absence, or out-of-home placement.

Kimberg and Wheeler (2019, p. 26) and Menschner and Maul (2016, p. 1) claim that the negative impact of trauma and traumatic events on persons' life and physical and

mental health could be long-lasting. Moreover, traumatic events in childhood can disrupt development and have very substantial and long-term implications on health and wellbeing, including the development of chronic illnesses in adulthood. (Kimber & Wheeler, 2019, p. 26) On the other hand, consequences of constant exposure to traumatic events may be visible already in child's development, namely his functioning, regulations skills, and learning abilities. These negative consequences might be caused by constant release of adrenaline, noradrenaline and cortisol. (Kim et al., 2022, p. 570.) Currently, trauma-informed care and its approaches became even more crucial because of war and violence started in Ukraine that could act as a trigger for those individuals who had similar experiences in the past. In other words, it could remind them of the initial trauma and their losses and could cause symptoms of anxiety, anger, remind them of helplessness and even cause similar emotions they had in past (Kubiak et al., 2020, p. 92). Defining trauma and trauma-related symptoms could help not only healthcare professionals, but also individuals with history of traumatic events to recognize those precautions and, consequently, seek for help from professionals if needed to restore the sense of power for themselves (Kubiak et al., 2020, p. 93).

3.1 History of trauma and trauma-informed care

In simple terms, trauma is defined as a single traumatic experience or set of events that threatened the physical or psychological integrity of a person, having a profound impact on his future life and forcing him to reconsider his attitude to the world and the system of values. From clinical perspective of view trauma could be defined as a combination of an external traumatic incident or set of traumatic experiences that entail real or threatened death, sexual violence or major harm, as well as overwhelming anxiety, hopelessness, or helplessness. On the other hand, from the traumatized person perspective of view, trauma is an individual's subjective experience and degree of stress, regardless of an occurrence or set of events that threatens the individual's life, for example, highly emotional disagreement with member of the family might cause significant harm. (Wilson, 2013, p. 2.)

The United States Department of Health and Human Services has a division known as the Substance Abuse and Mental Health Services Administration (SAMHSA). It is in charge of improving the nation's mental and behavioral health, as well as minimizing the impact of substance abuse and mental illnesses. (SAMHSA, 2014.) According to SAMHSA (2014, p. 77) most people who have been through trauma do not experience long-lasting effects on their physical or mental health, because of their coping skills and received support from others or family nearby that helped them to overcome this period. On the other hand, some people might experience more severe and prolonged symptoms. In other words, whether an event becomes a trauma or "just" a high level of stress depends on our response to it.

The term trauma-informed and the earliest investigations of trauma and its effects are rooted in the Vietnam War. It was primarily focused on soldiers returned from war and victims of child abuse. Over the last 30 years the focus has expanded from man-made or natural disasters, terrorist attacks to the civilian word, working with children and families who have experienced traumatic events. (Knight, 2019, p. 79.)

The American Psychiatric Association known as APA first introduced the term of posttraumatic stress disorder (also known as PTSD) in the year 1980. Before 1980 terms like soldier's heart, shell shock or operational exhaustion were used to describe mental distress caused by war trauma. (Smith & Whooley, 2015, pp. 39-40.) PTSD was categorized as an anxiety condition and the identification of a particular stressor was crucial (SAMHSA, 2014, p. 267). Over the decades the term PTSD has changed into something broader and now includes more civilians, like women and children. Moreover, according to Knight (2019, p. 80) the term PTSD diagnosis was replaced by trauma and stress-related and dissociative disorders more focusing on changes in cognition by the APA in the fifth version of DSM-5, Diagnostic and Statistical Manual of mental disorders.

The first approach to trauma recovery and rehabilitation began with individual and therapeutic therapies to relieve PTSD symptoms, followed by the integration of trauma effects into daily life activities. The second one was focused on psychosocial education and empowerment models. Finally, third generation is trauma-informed care (TIC)

that is new organizational model for public mental health and human services. (SAMHSA, 2014, p. 268.)

One of the most important milestones in the development of trauma-informed care was the Dare to Vision conference organized in 1994 by SAMHSA. Throughout this conference, individuals who were exposed to trauma had an opportunity to discuss their trauma histories and its effect on both physical and mental health, as well as their experiences related to re-traumatization during their treatment process. (Wilson et al., 2013, p. 4.) In the late 1990s and early 2000s, many experts wrote about the necessity for trauma-informed treatment and organizations. However, it was not until the launch of the SAMHSA-funded study "the women, co-occurring disorders and violence study" after which trauma-informed began to spread and took a greater shape (Wilson et al., 2013, p. 4). This research established a set of guidelines, including guidance for healthcare providers for this group of people.

3.2 The difference between trauma-focused and trauma-informed

There are ongoing concerns that the term "trauma-informed" is not utilized consistently and even has misconceptions concerning trauma-informed approaches (Sweeney & Taggart, 2018, p. 384). One of the main misconceptions about trauma-informed approach is that it treats people who have experienced trauma. Sweeney and Taggart (2018, p. 384) pointed out that trauma-informed approach aims at treating people who are experiencing the effects of trauma, namely, focusing on safety and preventing re-traumatization. Re-traumatization happens when anything in a current experience is reminiscent of a previous trauma, such as the inability to avoid or escape perceived or actual personal threat (Sweeney et al., 2018, p. 322). Whereas trauma-focused services are those that are specifically focused on treating PTSD and addressing the effects of trauma on person's life (Watkins et al., 2018, p. 2).

Trauma-focused treatment or trauma-specific focuses on a specific trauma, whereas trauma-informed care is a broader topic. DeCandia (2014, p. 4) outlined that both trauma-informed and trauma-focused aim in providing help for individuals exposed to traumatic event. Trauma-focused treatment has demonstrated the effectiveness in

treating PTSD (DeCandia, 2014, p. 4) and has resulted in significant symptom relief (Meis et al., 2019, p. 247). In addition, trauma-focused therapy often involves cognitive behavioral therapy, which is recommended as first-line treatment for PTSD (Chadwick & Billing, 2022, p. 2). However, exposure to traumatic event does not always go and result in developing PTSD symptoms. As a normal reaction to traumatic experience, people may experience effects of trauma for a while, which usually disappear.

The concept of trauma-informed care encompasses a wider field and includes both organizational and therapeutic practices that acknowledge the complex effect that trauma has on patients as well as on the caregivers who treat them. According to Menschner and Maul (2016, p. 3) in order to become trauma-informed organization it is essential to train staff in trauma-informed approach as well as change organization policy and culture. In order to successfully transform a healthcare system, it is required to make adjustments to both organizational and clinical practices in order to reflect the key concepts of a trauma-informed approach. Kim et al. (2022, p. 570) emphasized in his study that trauma-informed organization as well as trauma-informed care should be guided by the main principles of trauma-informed approach.

3.3 Information technology supporting healthcare

Nowadays, information technology is utilized in a wide range of ways to enhance patient safety as well as communication between healthcare professionals and patients. Care providers and patients may benefit greatly from technological aid in achieving optimal clinical results. Innovative technology may increase patient safety as well as overcome barriers that prevent its optimal use. According to Keyworth et al. (2018, p. 2) technology is extensively implemented into practice by healthcare professionals to support their professional practice, enhance clinical practice and communication between professionals. Decision support systems, for example, are the most effective technological interventions in healthcare. Additionally, primary healthcare is the most common field for the implementation of technological interventions. Keyworth et al. (2018, p. 15) advised further study on how healthcare, namely, hospitals are utilizing technology to assist healthcare professional practices.

There are a variety of stressors, and some people experience stress on a regular basis. Ruzer and Yeager (2017, p. 1) suggested that the percentage of stress exposure in coming years is going to increase due to migration and climate change. Consequently, the need for mental health services would increase as well. Ruzer and Yeager (2017, p. 1) outlined that in settings where resources are limited, the internet and mobile technology might be vital components in providing mental health services. Moreover, especially in middle-income countries, due to various reasons such as human resources shortage or cost barriers, some patients do not have access to specific mental health treatments. In addition, mobile technology and the internet could allow individuals who have been socially isolated as results of traumatic experiences overcome time, financial limitations, as well as link them together.

Nowadays technology is utilized for a wide variety of daily activities including shopping, banking, and socializing. Technology is also being used to improve mental health services such as phone services, video teleconferencing, text messaging allowing them to receive immediate support in case of distress or emergency. (Ruzer & Yeager, 2017.) Additionally, according to SAMHSA TIP 60 (2015, p. 5) technology-based evaluations and treatments may be clinically relevant throughout the whole range of mental health care. Technology like such as computers and cellphones facilitate the efficient, standardized, and cost-effective collecting and storing of clinically important information in a variety of healthcare setting. Culbert (2017, p. 1) suggested that technology may have a positive role in healthcare settings by promoting methods of stress management, emotional regulation and self-calming practices as some patients, children and youth prefer non-pharmacological therapies if available. In addition, Culbert (2017, p. 4) outlined that especially when teaching children self-regulating skills, it is essential to customize learning process according to their interests and in playful manner to be more attractive. For young people and kids playing video games and watching videos on the internet were found as most popular therapeutic games.

4 RESEARCH METHODOLOGY

Scoping reviews are an excellent technique for determining the extent of literature on a certain issue, as well as providing a clear indication of the number of available studies and research literature, and an overview of its emphasis (Munn et al., 2018, p. 2). Based on aforementioned information and for the purposes of this research, scoping review was applied as a research method. In current research, scoping review method is used to map existing literature for evidence on trauma-informed care in mental health, since there is no clear link defined between trauma-informed care and mental health.

4.1 Scoping review as a research method

Exploratory studies called scoping reviews methodically map a certain topic area's body of literature to discover key concepts, hypotheses, including sources of evidence, and research bias (Peters et al., 2020, p. 2121) and its questions are usually broader than in a traditional systematic review (Peters et al., 2021, p.2). Scoping review, in most cases, may have one main question and one or more sub-questions. Scoping reviews are different from other types of reviews in that they attempt to offer an overview or map of the evidence rather than a critically assessed and synthesized result or answer to a specific topic (Munn et al., 2018, p. 3). The scoping review works best when the goal of the study is to identify and map certain traits and concepts in sources of evidence, as well as to report on and discuss the findings. In addition, findings from scoping reviews can identify further research to address a specific question. (Peters et al., 2020, pp. 2121-2122.)

This scoping review has a broad scope since the research topic involve an examination of existing practices and approaches, therefore providing a comprehensive picture of the available evidence. Since this research has a broader "scope" the research question and search words are based on Joanna Briggs Institute's PCC (Population, Concept, Context) elements. For a scoping study the PCC is advised as a guidance for developing a clear and understandable question and inclusion criteria (Peters et al., 2020, p. 2122). The inclusion criteria of population were left open and implies both

man and women, starting from children and ending with elderly if they have experienced traumatic events or received trauma-informed care. The concept of this research study is broad as well and could map and identify any reported outcomes related to trauma-informed care, traumatic events, and their impact on individual's mental health. Context is in mental health and health care settings.

4.2 Literature search strategy

Peters et al. (2021, pp. 2-3) outlined that an a priori process, inclusion and exclusion criteria, known as eligibility criteria, and a detailed complete search strategy should be included in scoping reviews, including clear methodological and reporting guidelines. In 2020 Peters et al. (pp. 2122-2123) defined that scoping review protocols established a framework for the review and ensures that the research and the whole process are transparent. It should define the scoping review's eligibility criteria as well as the data sources and methods for retrieving and presenting it.

The research process is started with the definition of search keywords and the selection of databases. Based on the research topic and research questions following databases were chosen PubMed, PsycNet and ScienceDirect.

Only studies conducted between 2017 and 2022 were examined to keep the research focused and relevant. Table 1 presents the summary of inclusion and exclusion criteria applied to the literature search process. Following search words were used for every database: ("trauma-informed" OR "trauma informed" AND "technology") OR ("trauma-informed" OR "trauma-informed care") AND ("practice" OR "implications" OR "approach") AND ("nursing" OR "nurse" OR "healthcare professional" OR "mental health")

Table 1. Inclusion and exclusion criteria for scoping literature review

Inclusion criteria	Exclusion criteria
Published between 2017 and 2022	Publications outside of the study period

Published in English	Other languages than English
Accessible for free	Accessible to a charge
Relevant to the research questions	Irrelevant for research questions
Qualitative source (peer reviewed)	Lack of qualitative source (not peer-reviewed)
Full text available	Full text is not available

4.3 Critical appraisal

For assessing the methodological quality of the studies included in scoping review, Critical Appraisal Skills Programme (CASP) tool was used (Appendix 1). This is the most often used tool for evaluating the quality, namely, the strength and limitations of health-related research, and it is recommended for researchers who have no prior experience evaluating quality of qualitative study (Long et al., 2020, p. 1). It provides the set of tools for critical evaluation for Systematic Reviews, Randomized Controlled Trial Checklist, Qualitative Studies Checklist, Cohort Study Checklist, Diagnostic Study, Case Control Study, Economic Evaluation, Clinical Prediction. The CASP checklist includes ten methodological assessment criteria for determining quality of the included studies.

4.4 Selection of studies

The search was done via databases Science Direct, PubMed and PsycNet. These databases were chosen because they provide information from medical and ethical studies related to the study subject. Following the JBI recommended three-step data extraction method for scoping reviews, current research on trauma-informed care in mental health settings was thoroughly searched and analyzed to find relevant sources for this scoping review. According to Peters et al. (2020, p. 143) the procedure for looking for research articles to include in a scoping review utilizes the same three-step strategy that is suggested for use in systematic reviews. It begins with a title-level

analysis, then an abstract-level analysis, then a full-text analysis, and finally a reference-list search of selected articles for additional sources. In this study, all steps advised by Peters et al. (2020, p. 144) were thoroughly documented. The selection process of articles for this scoping review are presented in recommended flow chart by Peters et al. (2020, p. 144) in Figure 1.

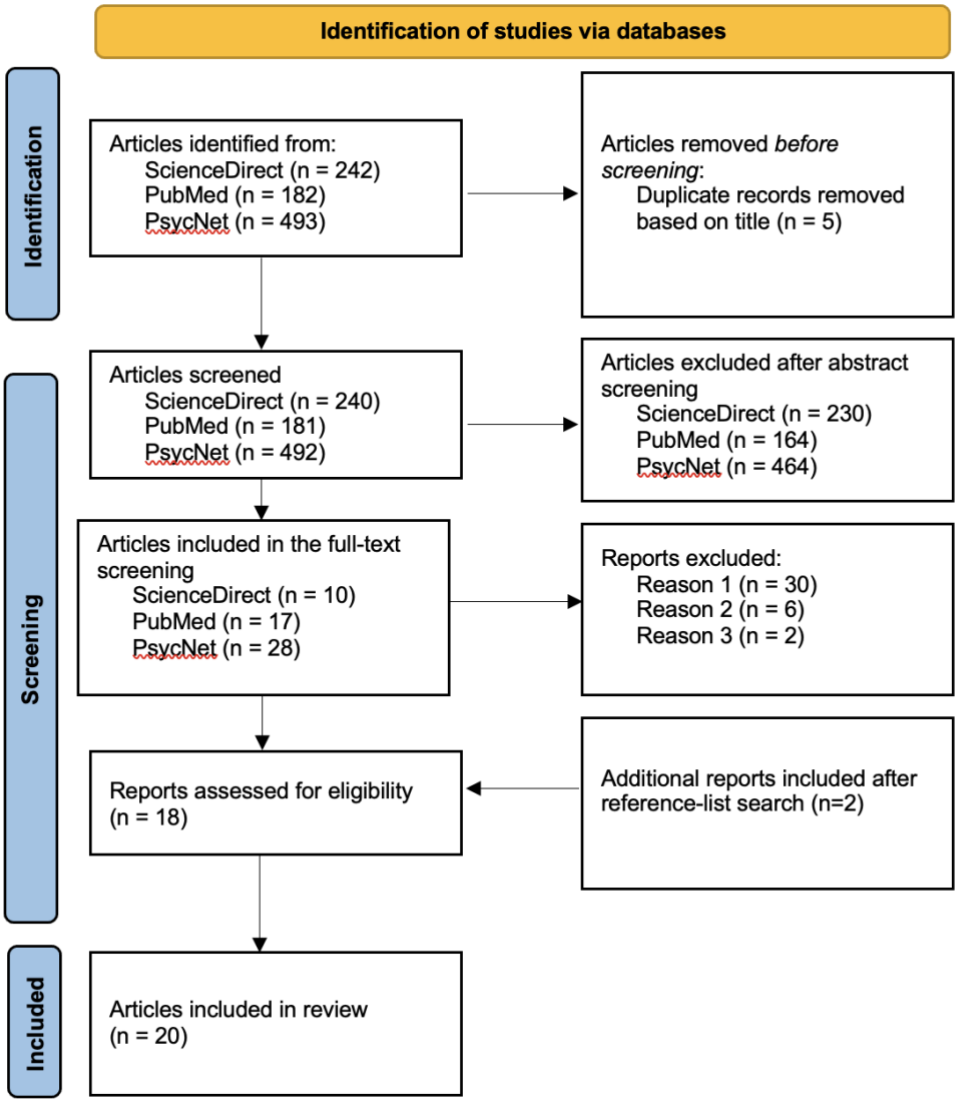

Figure 1. PRISMA search decision diagram 2020

In total, there were 913 articles found in three databases as follows: ScienceDirect n=240, PubMed n=181, PsycNet n=492. Based on article titles n=5 duplicated articles were removed leaving 908 articles to the next phase of data selection process. The abstract screening was carefully conducted multiple times, leaving n=55 articles for full-text screening phase. Two articles were excluded because the research was not conducted till the end and results were promised to be published in the near future and

were expectations from researcher, 30 articles were excluded because the results or research itself did not answer research questions and 6 articles were removed because their discussion of trauma-informed care was brief and lacked specifics. Two more articles were included after reference-list search, where one relates to technology and the other to the implications of TIC in practice. A total of 20 articles were included in scoping review following the inclusion and exclusion criteria.

The CASP tool consists of 10 questions, each of which, based on the answer, gives points. According to CASP tool for each article each answer was scored between zero = No, one = Can´t tell and two = Yes points respectively. According to Nevala et al. (2014, p. 9) and CASP (2018) a study is deemed to be of high quality if its overall score exceeds 10 points. The highest possible score is 20 or 22 points based on the answers and research quality. The methodological quality of the included studies was evaluated by one researcher that did not have any previous experience in research. All the articles were published in peer-reviewed journals meaning these articles, their quality was reviewed already by experts in the field. The scores of included studies ranged from 10 points to 18 points. Chosen articles are presented in appendix 2.

5 TRAUMA-INFORMED CARE APPROACH

The main goal of trauma-informed care approach is aiding people, families, healthcare professional workers, healthcare systems and other circumstances in creating safe physical, psychological and emotional environment, preventing re-traumatization (Ranjbar & Erb, 2019, p. 3; Tibbitts et al., 2021, p. 2) by increasing knowledge in trauma, its signs and symptoms in people and systems and integrating this knowledge into structured policies and procedures (Dugan et al., 2020, p. 2). Creating environment for emotional and psychological healing that provides opportunity for building trust and repair relationship is essential for both clients and staff. To put it another way, a trauma-informed approach was also characterized by Simons et al. (2021, p. 2) as a system where health care providers can recognize and respond

effectively to the effects of trauma on young people, caregiver, healthcare professionals, and support colleagues.

As Rosenberg (2022, p. 4) stated trauma has widespread impact and TIC purpose is to prevent and reduce risks of traumatization among staff or providers as well. As a healthcare professionals continue to recognize the role of trauma in patient's health and address the trauma in patient, there is growing risk for health care provider to contribute secondary traumatic stress.

Javakhishvili et al. (2020, p. 2) outlined the importance of trauma-informed care, especially, after pandemic COVID-19 crisis that has affected society in a multi-layered manner. The society has met different kind of stressors starting from existing human rights by quarantine measures, self-isolation and free movement to psychological, mental health consequences including depression, suicidality, PTSD, anxiety, harmful alcohol use. In order to increase awareness of trauma, prevent more severe mental health consequences and promote wellbeing, Javakhishvili et al. (2020, p. 2) emphasized the necessity of using trauma-informed approach in a larger scale.

European society for traumatic stress studies (ESSTSS) has presented the adoption of trauma-informed and trauma-specific strategies of post pandemic crisis management for mitigating negative public mental health consequences in different circumstance presented in Figure 2. It is crucial to increase knowledge of the developmental impacts of trauma and the effectiveness of various interventions among European countries. (Javakhishvili et al, 2020, pp. 3-4.) ESTSS supports research and best practices, fosters knowledge, develops networks and contributes to European public policy in the field of psychotraumatology. It has an essential role in assisting with the management of the current pandemic-related challenges.

Macro level (policies)	Trauma-informed	- Trauma-informed crisis-management policies [Among other relevant measures, addressing physical health protection-related needs of those disadvantaged groups, which are most vulnerable to contract COVID-19, i.e. refugees in Europe, etc.] - Trauma-informed mental health and psychosocial support policies [Among other relevant measure, addressing mental health and psychosocial needs of the most vulnerable groups, i.e. forced migrants, people below poverty level, people with mental illnesses, etc.]
	Trauma-specific	- Trauma-specific policies of mental-health and psychosocial care [Among other relevant measures, addressing a need in trauma-specific care of the most vulnerable groups, i.e. forced migrants, survivors of domestic violence, etc.]
Mezzo level (strategies)	Trauma-informed	- Trauma-informed quarantine strategies for forced migrants and other survivors of violence - Trauma-informed organizational culture in organizations and agencies involved in crisis management - Trauma-informed staff care strategies for medical personnel -Trauma-informed pre-deployment training for front-line workers (uniformed services personnel, journalists, local governance-structure representatives) - Culturally appropriate mourning and memorialization rituals adapted to the conditions of the pandemic
	Trauma-specific	- Trauma-specific professional guidance via mental health & psychosocial support guidelines, updated/ tailored to the pandemic - Research collecting evidence on the pandemic-related needs and psychological reactions of the general population and at-risk groups, and on the effectiveness of trauma-specific interventions - Increased capacity of services providing internet-based crisis counselling and digital care - Relevant training and supervision for professionals adapting internet-based modes of counselling and therapy - Adequate staff-care and supervision for professionals engaged in crisis counselling and provision of care in the post-pandemic phase
Micro level (services)	Trauma-informed	- Trauma-informed support for vulnerable groups [Among other relevant measures, reducing their exposure to COVID-19 as a life-threatening stressor, by providing the personal protection means, such as disinfectors, gloves, masks, etc.] - Trauma-informed mental health and psychosocial interventions including psychological first aid - Trauma-informed pedagogy - Trauma-informed primary health care responses - Trauma-informed medical care for somatic problems
	Trauma-specific	- Trauma-specific evidence-based preventive interventions tailored to the needs of the general public and vulnerable groups - Trauma-specific evidence-based mental health and psychosocial interventions - Trauma-focused evidence-based therapies for people in need

Figure 2. TIC Strategy for post pandemic crisis management (p. 4), by Javakhishvili et al., 2020.

According to Bryson et al. (2017, p. 3) the purpose of TIC involves reforming whole healthcare systems by emphasizing an individual's sense of safety, choice and control, while also incorporating knowledge of the traumatic stress response by building a nonviolent, learning, and collaborative treatment culture. This may require organizational changes in their vision and mission statements.

6 TRAUMA-INFORMED CARE PRINCIPLES

There are six key principles in trauma-informed approach defined by SAMHSA that are recommended to be used as a guidelines and not as prescribed set of practices, since each healthcare professional, organization is unique and has its own way in treatment process. The six guiding principles of TIC: cultural, historical and gender issues; empowerment and choice; collaboration and mutuality; safety; trustworthiness and transparency; peer support. (Gerber et al., 2020, pp. 303-304; Rosenberg et al.,

2022, pp. 4-5; Sweeney et al., 2018, pp. 323-324.) These principles are described in more detail below:

Cultural, Historical and Gender Issues

Respecting and acknowledging differences and issues related to culture, history, gender, race, sexuality. This information should be used as a way to better understand the client including client's personal space, feelings.

Empowerment and Choice

Utilizing the strengths, skills, and preferences of patients to empower them throughout the therapy process and to empower them to take control of their lives. Empowering patients as much or as little they want to disclose. Providing information about all safe and effective treatment alternatives for patient decision making

Collaboration and Mutuality

Maximizing teamwork of healthcare professionals, patients' families, and close friends during the treatment process. Treating client as unique, as an expert.

Safety

Ensuring the physical, sociological, and emotional safety of patients, members of their family and caregivers in health care environments and activities.

Trustworthiness and Transparency

Building trust relationships as well as clarifying with patients their evaluation and treatment process expectations through transparent communication, active listening, and respect.

Peer support

Creating communities and fostering meaningful relationships between clients, employees, and care givers. Experiencing support and providing support. Showing to the client that he or she is not alone experiencing that. For care providers providing support among staff and interdisciplinary team.

Sweeney et al. (2018, p. 325) stated that trauma survivors seldom open up about their experiences, but mental health professionals are sometimes afraid to ask about their previous or current experiences of trauma because they are afraid to appear judgmental. Figure 3 demonstrates trauma-informed care and adverse childhood experiences (ACE) framework that was developed on core principles such as empowerment, choice, collaboration, safety and trustworthiness that gives clear

guidelines for healthcare professional how to apply TIC approach in practice (Ranjbar & Erb, 2019, p. 4). In addition, framework contains examples of questions and statements that could be used during conversation and patient navigation. One of the introduction questions examines whether the patient is aware of the effects and consequences of trauma and stress on the health condition showing the patient about caring of them and showing them opportunity to discuss about their trauma experiences. It also shows examples for healthcare professional how to respond to disclosures by making empathic statements, offering assistance and then counselling and sharing resources. According to Rjanbar and Erb (2019, p. 3) presented framework in Figure 3 could be beneficial even for people who are experiencing stress in their lives. Based on these guidelines, the staff should have awareness of trauma and its impact on patients' health condition, ability to measure and analyze person's health condition, as well as be aware of evidence-based practices.

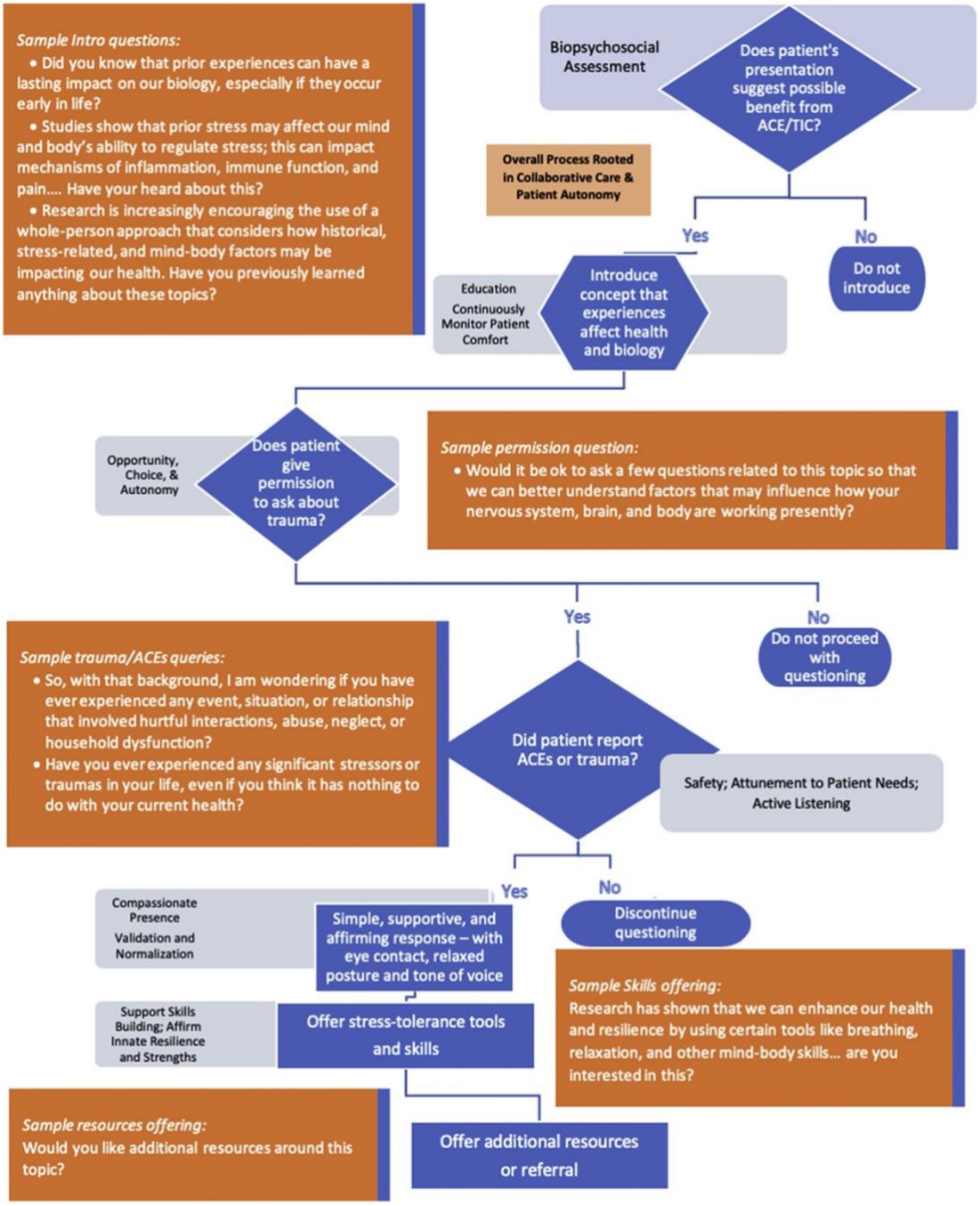

Figure 3. Framework of trauma-informed practice in adverse childhood experiences in rehabilitation practice with example questions and statements that could be used in different stages (Ranjbar & Erb, 2019, p. 4)

Based on the existing framework of how healthcare professionals could ask about trauma and its experiences, it could be suggested that healthcare service users could be asked routinely about trauma-related symptoms. However, only 22% of healthcare service users in the United Kingdom, according, to Sweeney et al. (2018, p. 326), stated that they had been questioned about trauma-related experiences. Sweeney et al.

(2018, p. 325) emphasized the importance of using brief normalizing statements before inquiring the person about trauma or traumatic experiences.

This framework also emphasizes one of the important implications of trauma-informed approach in practice. Namely, psychoeducation about trauma and its impact on human body. According to Ranjbar and Erb (2019, p. 1) stress is the response of the human body to overexertion, negative and positive emotions triggered by any environmental, physical or interpersonal demand. Good stress or eustress in small amounts is normal and even necessary as it makes person think, look for a way out of the problem, and in this case, it has positive meaning. On the other hand, distress that exceeds person's ability to cope with it, may contribute health problems. People under sustained or even chronic stress are more prone to infections and other health diseases, because of lowered functions of the immune, nervous, endocrine systems (Ranibar & Erb, 2019, p. 2). Consequently, distress could result in physical inactivity, ability to think or learn, disordered eating, violence or even lead to developing posttraumatic stress disorder (PTSD).

Trauma and stress affect adults and children differently. The larger the number of adverse childhood experiences (ACE) children endure, the greater the probability that trauma may negatively affect child's development including physical changes like impulsivity, undeveloped pre-fontal cortex or affect negatively immune system by increasing inflammation responses (Murphy et al., 2017, p. 24; Simons et al., 2021, p. 8).

7 IMPLICATIONS INTO PRACTICES

7.1 Integration in institutional circumstances

Tibbitts (2021, p. 4) has investigated in his research with other healthcare professionals that trauma-informed yoga for students, including students suffering from PTSD symptoms and those ones with the history of trauma, had positive and beneficial effects

on students' overall health condition. Namely, the program aid students in developing self-regulation skills that were, consequently, applied in their daily life. It was investigated that after undergoing trauma-informed yoga classes there were clear increase in using self-regulation skills that aid in dealing with negatives feelings, stressful situations and making decisions towards health actions in response to their experienced current feelings. Moreover, in the study was reported positive outcomes in developing sense of calm, improving symptoms of insomnia, social skills, and physical health including chronic pain. (Tibbitts et al., 2021, pp. 4-7.)

Cognitive-behavioral techniques learned with healthcare professionals for coping with the distress and traumatic symptoms in individuals' daily life are fundamental and have showed effectiveness (Cutuli et al., 2019, p. 3). However, for children and youth it is not enough. Schools are playing big and important role in children' life. Thus, enhancing knowledge about traumatic stress and TIC approaches among teachers could aid in implementing those approaches in schools and, consequently, improve work with possibly traumatized children.

7.2 Trauma-focused Cognitive-behavioral therapy

Trauma-focused Cognitive-behavioral therapy (TF-CBT) is one of the trauma-informed care interventions existing for youth who have been exposed to traumatic events. TF-CBT comprises psychoeducation regarding trauma, the development of tailored relaxation methods for stress management, the expression and regulation of distressing emotions, and cognitive coping skills. (Ghafoori et al., 2019, p. 768.)

Ghafoori et al. (2019, pp. 768-771) has investigated that TF-CBT is more effective in improving traumatic distress among youth compared to existing child-centered therapy. Moreover, there was higher percentage in completion TF-CBT among youth compared to child-centered therapy, where participants were more likely to stop their treatment.

7.3 Trauma-informed wilderness therapy

The study conducted by Johnson et al. (2020, p. 878-887) was focused on the impact of WT on trauma-exposed youth. Johnson et al. (2020, p. 880) outlined that WT is one of the existing psychological interventions for treating trauma-exposed individuals, since there is other mindfulness-based integrative treatments available, such as trauma-sensitive yoga. Heartrate variability biofeedback sends information to the patient regarding their breathing and heart rate variability changes. One another example is the method of psychotherapy known as brainspotting, which assists patients in working through traumatic experiences by focusing on specific points in their visual fields that aids in accessing unprocessed trauma in the subcortical brain. (Johnson et al., 2020, p. 880.)

Wilderness therapy (WT) is an approach frequently employed with adolescents to promote personal and interpersonal development and well-being via outdoor adventure activities. The use of standard psychotherapy methods such as group and individual therapies with outdoor activities to promote personal and interpersonal development are common components of WT. (Johnson et al., 2020, p. 879.) There are three types of outdoor activities: group-based hiking up to 60 days, long-term residential meaning living for 9 to 12 months in rural or wilderness setting and short-term living in base camp from 6 to 12 weeks. Annually in the United States participates approximately ten thousand adolescents in WT therapy.

In this study trauma-informed WT were combined with several other interventions, namely, trauma-sensitive yoga, heart-variability biofeedback, brainspotting and canine therapies, and art interventions held in backcountry. The results showed from moderate to large improvements on psychological, psychophysiological and family functions. In addition, using their own self-selected coping skills, adolescents also showed moderately positive improvements. (Johnson et al., 2020, pp. 883-885.) Despite the encouraging findings, the researcher indicated that participants and their families may require more visits for individual and family psychotherapy to help them maintain and improve upon their progress.

7.4 Trauma-informed screening tool

Mental health challenges among children are real and widespread. Unfortunately, it is no longer uncommon for youth to be sent for screening when behavioral health problems become apparent. Failure to address children mental health needs and undermining the significance of regular screening could lead to negative long-term effects and are linked to poor academic performance in schools, school violence, behavior issues and, consequently in the future, could lead to unhealthy relationships, unemployment or even involvement in the criminal justice system (Akin et al., 2021, p. 2).

According to Akin et al. (2021, p. 2) in order to identify exposure to or experience of possible traumatic events of experience, or to validate non-diagnostic traumatic stress symptoms or reactions, trauma-informed screening is defined as a universally administered critical tool to children by healthcare professionals. In this study were investigated that using critical tool as trauma-informed screening may provide healthcare professionals with crucial information that could be beneficial for both healthcare professionals and patients. This tool aids in protecting children from negative effects of potential trauma by recognizing the needs of child, monitoring trauma-related symptoms, making appropriate service recommendations, assisting parents and other family members in achieving positive long-term results.

Cutuli et al. (2019, pp. 2-3) has investigated the importance of screening tools for identifying PTSD symptoms both severe and non-crucial for providing trauma-informed care. If the common depression identifier tool were used, the people having symptoms related to PTSD would not be allowed to the evaluation process.

7.5 Trauma-informed peer-support model

Phojanakong et al (2020, pp. 465-466) had used trauma-informed approach in his research about effectiveness of TIC in household food insecurity during adulthood. One of the main goals during peer-group sessions was aiding individuals in increasing

knowledge in trauma, adverse childhood experiences with an overview of common trauma responses. In addition, it was investigated that used TIC peer-support tool combined to one-on-one meeting with healthcare professional succeeded in improving mental health, reducing depressive symptoms. Peer-support tool or peer-support model was based on TIC key principles including empowerment and safety emphasizing sharing with other group members of experiences, ideas.

Dugan et al. (2020, p. 5) has investigated improvements in mental health such as lower depressive symptoms, reduction of alcohol use among participants from peer support intervention. This is a significant finding, as improvements in mental health and less alcohol usage may, in turn, enhance an individual's chances for employment and lead to higher incomes. The reduction of alcohol use was noticed from AUDIT-C tool that measures alcohol use.

7.6 TIC for parents and infants

A stay in the neonatal intensive care unit NICU may be stressful for a both the infants and their parents and at worst-case scenario could overwhelm their coping skills. It is essential, then, to provide supportive care for the purpose of enhancing safety and security in order to prevent further traumatization (Sanders & Hall, 2018, pp. 6-7).

Sanders and Hall (2018, p. 7) claimed that skin-to-skin contact is an effective evidence-based practice of TIC, which has been shown to improve a connection between the parent and the newborn, parental self-efficacy, diminishes the level of stress and maternal depression, as well as enhances child cognitive developmental outcomes. Based on the TIC principles of choice and collaboration, trustworthiness and transparency, parents should be included in the decision-making process related to their babies' treatment and have access to medical records. Starting from pharmacology and ending with breastfeeding. Parents' active participation in their newborn's daily care and taking primary caregiving responsibilities previously practiced with nurse enhances collaboration and mutuality, empowers as well as provides peer support for parent. Simply single-family rooms have shown significant

difference in infants' treatment, less pain, stress or infections, compared to those ones cared in an open-bay NICU.

Healthcare professionals in NICU are prone to stress and traumatization as well. Therefore, it is essential to provide trauma-informed support for healthcare professionals working in NICU in order for them to be able to maintain their self-regulation and capacity to support families. (Sanders & Hall, 2018, p. 8.)

7.7 Neurobiological link of TIC to mental health

The impact of TIC approach was investigated in the study that lasted 3 years and contained neurobiological variables assessment such as hair cortisol concentration (HCC) among healthcare professionals working with clients. The study was conducted in children and youth welfare institution where due to explosion to traumatic events, clients were experiencing mental health issues including lack of self-regulation, aggression including aggression towards caregivers. (Schmid et al, 2020, pp. 3-4)

According to Schmid et al. (2020, p. 3) cortisol, namely, glucocorticoid in human body is stress hormone and is regulated by the hypothalamic-pituitary-adrenal (HPA). HPA activates the release of stress hormone as a reaction to stress in the human body. Cortisol level could be measured in blood, urine, saliva that usually reflects the concertation of short periods of time, whereas HCC reflects long-term cortisol exposure. Healthcare professionals and professionals on all levels of the organization, including management, underwent trainings related to TIC approach, key principles, knowledge of trauma and its effects on neurobiological and behavioral level. After three years when organizational change was conducted according to TIC principles and TIC practices were fully adopted, there was a significant decrease of the concentration of cortisol level in HCC compared to another group who have not received TIC trainings. In addition, there were noticed a decrease of aggression from patients towards healthcare workers. (Schmid et al., 2020, pp. 6-8)

Another example of positive consequences of TIC were outlined by Murphy et al. (2017, p. 31) where after applying trauma-informed therapy in the treatment process

in Child Welfare Systems, positive changes in child emotional wellbeing were noticed already in the beginning of the treatment, whereas positive changes in child behavior were seen only after three months after the beginning of the treatment.

8 TECHNOLOGY IN TIC

8.1 Trauma-informed telehealth

Telehealth is a modern approach that allows for the remote provision of medical service and is even more patient-focused than traditional personal meetings. However, for the age groups transition to telehealth may feel challenging. Even though, in telemedicine there is no direct eye contact, it bases on fundamental TIC principles such as safety and collaboration. Moreover, Gerber et al. (2020, p. 305) has investigated, based on client's experiences, virtual contact for groups with PTSD felt more comfortable, emotionally safer because of possibility being at home throughout treatment. Some age groups may feel uncomfortable with telemedicine owing to technological unfamiliarity. According to the TIC principle such as choice, by offering the option to begin initial sessions with phone calls might help overcome barriers associated with videoconferences Gerber et al. (2020, p. 306).

Telemedicine could aid in overcoming some economic and physical barriers to accessibility. Based on created recommendation by Rosenberg et al. (2022, p. 5) telehealth ensures access for all groups, especially, for people suffering from human-made disasters. According to Azzopardi et al. (2022, p. 46) trauma-focused cognitive-behavioral therapy for youth and families provided via internet improved clients' satisfaction and attendance. However, telehealth is not suitable for young children, especially, with attention deficits. Azzopardi et al. (2022, p. 47) found out unsuitable virtual care for some clients for a range or reasons, including lack of safety or privacy. Some clients may live in small apartments with multiple family members or for some clients their home could be connected to traumatic experience and, consequently, create unsafe space for therapy. Javakhishvili et al. (2020, p. 5) has also claimed that

virtual therapies such as cognitive-behavioral therapy are just as beneficial as traditional in-person treatment. However, at least until 2020 internet-based therapies were not widely applied in European healthcare systems.

8.2 Virtual reality exposure therapy

Mistry et al. (2020, p. 848) found out that mind body approaches, namely, meditations have positive effect on decreasing symptoms of distress, anxiety, depression and even more severe condition such as PTSD. However, in the research was pointed out that healthcare professionals need to be aware that meditation for some patient might be distressing as well.

In the study conducted by Mistry et al. (2020, pp. 847-858), virtual reality exposure therapy (VRET) was investigated. Participants have their head and body motions recorded and coordinated with software while wearing a display device, head mounted display or HMDs, that allows them to watch and listen to a computer-generated graphical world that is immersive and surrounds them from all sides in 360 degrees. This type of therapy involves exposing participants to trauma-related stimuli that steadily become more intense in order to promote the processing of traumatic memories and the reconditioning of maladaptive emotional reactions. (Mistry et al., 2020, p. 849.) Previously, VRET compared to traditional exposure therapy was not found to be more effective, only more efficient. According to the study Mistry et al. (2020) that participant who completed meditation in virtual reality (VR) in natural surroundings revealed changes in brain patterns compatible with a decrease in generalized anxiety. All participants in the study had undergone the questionnaire assessing the degree of exposure to traumatic and stressful life events and had an opportunity to freely choose virtual environment, as well as musical background for meditation. For the comparison of the results participants had completed both VR and non/VR meditations. There were formed two groups: first group had undergone meditations first in VR and sconed in non-VR and vice versa non-VR meditation first and VR meditation second.

Mistrey et al. (2020, p. 855) discovered in the study that VR has had relative success in emotion such as awe that is difficult to induce in clinical settings. However, positive effect in positive emotions was noticed only in the case where participants had completed the VR meditation first before non-VR. If to say about negative emotions, there were not found any significant differences among participants between VR and non-VR meditations. In both VR and non-VR meditations, both groups experienced unpleasant feelings at a similar rate.

In another study about psychotherapy trauma-exposed participants had completed therapy in three different formats, more specifically, IMG (imagery condition) format via closed-eyes, 2D (meaning laptop screen) and virtual reality using HMD. After completing all three formats each participant was interviewed.

In the first trial, The Google Tilt Brush application was used for the creation of the VR format. This application allowed participants to draw via controllers held in their hands. In 2D format the participants had used paint application and in IMG participants had used their imagination. Participants reported higher levels of happiness, positive emotions, and credibility after participating in a VR format (Frewen et al., 2020, p. 6). In the second trial was used narrative exposure therapy that reduces symptoms of depression, PTSD and other trauma-related symptoms. According to Frewen et al. (2020, p. 8) narrative therapy involves creating a chronological list of the patient's stressful experiences during lifetime, revising and expanding this list until the traumatic events are integrated in an autobiography. This trial was conducted also in three formats. In the VR format was used Google Earth VR and participants went through their childhood, adult home, school places and explored street's view. The results showed again greater results in the VR format compared to others. Moreover, for the participants VR format in this trial felt more personal compared to 2D from laptop screen. The third trial was wilderness therapy provided in three formats as well. VR used NatureTreks application. In VR participants had possibility to visit naturalistic environments. In 2D format participants have viewed videos on a widescreen. VR format was found among other formats as calming, enjoyable, helpful format. Overall, according to Frewen et al. (2020, p. 19) the outcomes of this research demonstrated the therapeutic approach of VR interventions for disorders associated to trauma or distress, as well as improvements of mental health. In all three trials, the VR

format earned high scores for satisfaction and credibility. The researcher recommended more research that compares several interventions in both VR and non-VR formats in order to determine what may be unique to VR across diverse interventions. (Frewen et al., 2020, p. 20.)

9 DISCUSSION

9.1 Discussion of the results

The results from this study reveal trauma-informed practice in the daily work among healthcare professionals. To conclude previous chapters, contemplate on the research questions. The questions were:

Main question:

- How trauma-informed care is linked with mental health?

Sub-questions:

- What are the main principles and approaches of trauma-informed care?
- How trauma-informed care is implicated into a nursing mental health practice?
- How is technology used in trauma-informed care?

Based on findings, namely, analyzed articles trauma-informed care approach is a framework that can be integrated in organizations, practices and services to support the healing well-being and resilience of trauma survivors following main principles such as cultural, historical and gender issues; empowerment and choice; collaboration and mutuality; safety; trustworthiness and transparency; peer support (Gerber et al., 2020, pp. 303-304; Rosenberg et al., 2022, pp. 4-5; Sweeney et al., 2018, pp. 323-324). This framework could be implemented throughout the organization including organization's culture and physical environment, as indicated by Menschner and Maul (2016, p. 3), in order for the organization to become trauma-informed. It is possible that Finnish healthcare system may benefit from the framework as well. That aids in creating safe and welcoming environment for the staff and patients. Education and

raising awareness of trauma, its impact among staff and patients, teaching coping techniques are fundamental part of TIC approach. As it was stated by Kim et al. (2022, p. 570) and presented in results the core components of which trauma-informed care include staff development, namely, raising their trauma awareness, trainings, trauma-focused services based on evidence-based practices, measurements that were also reported in outcomes, screenings, and, finally, organizational environment and practices. Kubiak et al., (2020, p. 93) stated also that trauma awareness and its impact aids both groups healthcare professionals and patients leading to the development of coping strategies for clients. In addition, as Sweeney et al. (2018, p. 323) hypothesized, it may help prevent re-traumatization in the mental health system in the future.

Chadwick and Billing (2022, p. 2) defined cognitive behavioral therapy as a part of trauma-focused therapy that is mainly used as treatment for PTSD. According to the scoping review, trauma-focused cognitive behavioral therapy has demonstrated considerable efficacy among youth exposed to traumatic events. Furthermore, Ghafoori et al. (2019, pp. 768-771) demonstrated that TF-CBT was more successful than traditional child-centered therapy highlighting its benefits and application in trauma-informed care as well.

Screening tools in nursing TIC practices remains crucial. It was emphasized in the scoping review that without screening tools, there is a high risk that client's exposure to trauma including symptoms may remain undiscovered leading to a non-effective treatment that could only partially address patient's' needs and distress (Akin et al., 2021, p. 2). Moreover, the screening tool in TIC is a component of preventative strategy which entails the identification of risks for the development of more severe symptoms of traumatic stress, such as PTSD (Cutuli et al., 2019, pp. 2-3). The investigation of early symptoms, such as mood, sleep disorders and other trauma-related symptoms that have not yet fulfilled diagnostic criteria, aids in the formulation of a treatment strategy. For some individuals it is vital to discuss their traumatic feelings and share with healthcare professionals, while for others it may be sufficient to gain coping skills through cognitive-behavioral therapy. Moreover, according to SAMHSA (2014, p. 77) quite large amount of people might feel that they do not require the assistance of healthcare professionals, because they receive sufficient support from close friends and family. In this instance, screening tools demonstrate the

significance of analyzing and monitoring the health of individuals to address the risk status or distress level. However, screenings are only the first step in the treatment that may facilitate improvements in healthcare settings. Screenings may aid in identifying early warning symptoms of distress, choosing the first treatment but screening by themselves will not enhance the results of the TIC treatment.

However, despite the clear benefits of periodic screenings, they have not become a standard practice in healthcare settings. Investigation of barriers for implementing of TIC practices are outside of scope of this review.

The purpose of applying trauma-informed care is to be aware of the possibility of trauma and its effects, and to utilize inpatient nursing care to provide a psychological and physical safe environment for patients (Ranjbar & Erb, 2019, p. 3; Tibbitts et al., 2021, p. 2). Its goal is not to harm patient rather than even teach how to cope with distress. Safety is one the fundamental principles of trauma-informed care that was outlined in different interventions of TIC practices. As there were preexisting misconceptions regarding TIC approach, these findings support the assertion made by Sweeney and Taggart (2018, p. 384) on the TIC approach that emphasizes safety and re-traumatization prevention. Safety as itself may have different interpretations, in trauma-informed meanings safety belongs to safety from trauma symptoms. Trauma-informed principles are highly presented in the newborn intensive care unit, where all six principles of TIC are crucial and were used in healthcare professionals daily work. For instance, principles of collaboration, empowerment and service user involvement were prevalent.

Psychoeducation belongs also to one of the most important interventions of trauma-informed care. It is an important component of trauma-focused cognitive behavioral therapy and peer-group sessions. The goal of psychoeducation is to increase the knowledge of traumatic stress symptoms and its impact on humans' body in psychological, cognitive, and physical manner (Ranjbar & Erb, 2019, p. 1). It is a "first-line" step in trauma-informed approach that helps individuals to gain and learn skills with healthcare professional as well as increases acknowledge of their importance. Individuals with histories of traumatic experiences are frequently unaware of the relationship between their experiences, feelings they are experiencing and their

traumatic stress responses. Moreover, since everyone is unique, it may feel challenging to comprehend how others with identical situations may react differently. These findings also lend support to Kubiak et al. (2020, p. 93) contention that identifying the trauma and its symptoms may help individuals to seek aid from healthcare professionals in time.

Phojanakong et al. (2020, pp. 465-466) and Dugan et al. (2020, p. 5) had investigated in their research positive improvements in mental health among participants from peer-support model. Peer-support is a part of trauma-informed practice that enhances an individual's conviction that they are not alone and that there is nothing wrong with them since trauma may perpetuate feelings of being different, alone, and sick. Feeling of being alone and isolated from the society could be partially explained by the lack of trust. Peer support allows trauma survivors to discover how their and other past experiences influence their perceptions of themselves, others, and the future. In addition, it provides the opportunity for learning alternative coping skills and creating mutual relationships. Furthermore, Dugan et al. (2020, p. 5) emphasized socio-economical changes and advantages from the effects of trauma-informed care on mental wellbeing that in a larger scale may lead to fundamental changes in economic structure.

Subjective stress measures were used in all of the interventions reported in this study, and these assessments were enhanced by the use of TIC concepts and approach in clinical settings. According to Kim et al. (2022, p. 570) there were found clear link between stress and its harmful effects on health condition, which were explained by biological measures such as constant release of adrenaline, noradrenaline and cortisol. However, in this research only one study was discovered that investigated positive physiological changes following the adoption of TIC based on trauma-informed principles using biological measures of stress (Schmid et al., 2020, p. 3). This study strengthens the importance of trauma-informed care and outlines the strong link between trauma-informed care and mental health.

Altogether, 3 out of 20 articles represent results about technology used in trauma-informed care. Trauma-informed telehealth study shows the potential for easy way of providing and even expanding trauma-informed care in Finland. Moreover, it shows

the potential to be provided during pandemic and for Ukrainian people who currently could be allocated in different countries. Telehealth provides opportunity to overcome geographical, economical, and even language barriers as it was already identified by Ruzer and Yeager (2017, p. 1). Another example of the use of technology in trauma-informed care was meditation provided through virtual reality, which has not demonstrated significant results or improvements above traditional way of therapy. It demonstrates the necessity for more research and investigations into the use of virtual reality in trauma-informed care, possibly not in meditation but in other therapeutic approaches. Keyworth et al. (2018, p. 15) suggested further researchers in this field and this study showed quite limited information related to technology used in trauma-informed care. One small mention was found about biofeedback heart-rate variability that potentially have been used device for that. On the other hand, Frewen et al. (2020, p. 19) has investigated and tested other possibilities for the use of VR technology for mental health and trauma-related disorders that had shown great results among participants. Moreover, interventions of VR-therapies were compared to other formats, such as 2D and the use of imagination, and the uniqueness of VR therapy was highlighted. Among other formats, VR-therapy was found as the most attractive that possibly could suit also for teenagers instead of using other formats or providing therapies via videoconferencing. Azzopardi et al. (2022, p. 47) outlined that for some individuals suffering from attention deficits telehealth might be inappropriate way for providing therapies. Culbert (2017, p. 4) suggested to customize therapies according to individual's needs, age and interests, indicating that VR-technology has a promising future based on the findings.

Trauma-informed yoga illustrates possibilities for group physiotherapy classes for those who were exposed to traumatic experiences or currently experiences distress. Moreover, according to Tibbitts et al. (2021, p. 8) provided trauma-informed yoga in institutions and communities provided possibility for vulnerable groups to participate in these classes. Another mention about the use of yoga was in Johnson et al. (2020, p. 880) study where trauma-sensitive yoga was used as a part of wilderness therapy. There were presented few more practices used such as brainspotting, heart-variability biofeedback and canine therapy.

9.2 Limitations

Several limitations of the present scoping review should be considered. First of all, the research included articles available only for free of charge. Therefore, the research had limited ability to gain access to the appropriate articles answering the research questions. Secondly, the researcher had lack of experience in conducting scoping review. However, this gap was partly filled with the using Quality Criteria Checklist of CASP during data collection process. In addition, there was only one researcher involved in the scoping review, despite the fact that according to Peters et al. (2020, p. 2124) is normally advised to have at least two researchers examine the publications for reducing the chance of bias.

9.3 Research ethics and validity

The research should be conducted in accordance with standards for good scientific practice and following a priori protocol (Peters et al., 2020, p. 142). The research and its outcomes are only then reliable. In this study the protocol suggested by Peters et al. (2020, p. 2122) was used and according to this protocol the results were presented in PRISMA flow diagram. Ethics were considered throughout the thesis process. The data was acquired using ethically sustainable methods and the material was analyzed though approved methods.

Ethics and reliability are an important part of research process and are clearly connected to each other. Research ethics must be followed throughout the research process. The research was done in accordance with the principles of responsible conduct of research to ensure its ethical acceptability, reliability, and the validity of its findings. Both in the preparation of this thesis and the scoping review, efforts were made to ensure the sustainable transparency of the entire process by accurately reporting the search of the scoping review and selection protocol and the reasons for the selections, obtaining information from reliable first-hand sources, correctly citing the sources used, and avoiding plagiarism. (TENK, 2012, pp. 30-33.) In order to assure the validity of the study, every phase, methods and materials used, were accurately,

comprehensively and transparently reported. The quality, trustworthiness, validity and relevance of the research were ensured by the Quality Criteria Checklist of CASP.

The included studies were published between 2017 and 2022, where 2 of them were already published in 2022 and two in 2021, six in 2020. This may be deduced from the current interest in the topic and the fact that study is continually being undertaken in this field.

As the final component connected to the reliability to the research process, previously mentioned factors that may impact the reliability of the study are reviewed, including limitations and weaknesses. The study was comprehensive and extensive for one researcher. However, the intended result was achieved in the planned time.

9.4 Implications for practice and future research

Current research could strengthen the importance of trauma-informed care because link between trauma-informed care and mental health was outlined. Psychological or mental trauma is the root of many mental, socio- and physical problems. Alcohol and drugs usage is typical long-term complications from trauma. Dependence can also develop from work: women who have experienced sexual violence are especially prone to workaholism. Traumatized people could traumatize those around them, turning themselves from victims into aggressors. Consequently, trauma-awareness is needed not only for psychologists, healthcare professionals or mindfulness trainers. Team leaders and managers also dealing with trauma-awareness. If employee in organization during the work process getting traumatized or retraumatized, he loses the ability to act freely. Hence, this study creates a basis for future researchers in a way how trauma-informed care could be implemented in workplaces, schools and other circumstances. In addition, this study creates a strong basis for future research to outline barriers for implementing trauma-informed care.

Trauma-informed care principles are engaged into nursing daily practices. The same way as healthcare professionals washes their hands before and after contacting the

patient to protect ourselves and future patients, all healthcare professionals should approach each patient in a trauma-informed way.

Several questions related to trauma-informed care topic remain to be answered. In future research should be considered how it is possible to provide support for healthcare professionals in providing TIC. Whether there are existing brochures or handouts or provide others supportive practical tools or decision-support systems for promoting trauma-informed care. The author also wonders whether there is more focus on individuals who have experienced specific traumatic events like violence, abuse and less on those who have other exposure to trauma.

10 CONCLUSION

The persons' ability to cope with difficult or traumatic situations includes the ability to mobilize forces to solve this situation, as well as the ability to calm down when the situation is over. Creating a safer, trauma-informed environment can help you move much further in your work—whatever that may be. Such an environment gives a person a resource for change and sometimes the first feeling of security and calmness in his life. It also helps the specialist to recognize signs of deeper trauma in time and encourage the person to seek more specialized help, thus saving years of searching for answers to the questions "What is wrong with me?" and "Why cannot I do anything?" (Sweeney et al., 2018, p. 323).

TIC approach includes different kinds of practices that were implemented following TIC principles in daily nursing practices. Such practices as a screening tool, cognitive-behavioral therapy, wilderness therapy, psychoeducation, or trauma-informed telehealth are only small part of the interventions creating a big picture of TIC. As Rjanbar et al. (2019, p. 3) stated even individuals who have not been traumatized can benefit from trauma-informed care. In addition, it is essential to support medical staff since the have direct and indirect exposure to a trauma that may act as a trigger for them. Based on the results telemedicine was already used in TIC during the COVID-

19 pandemic, whereas technologies like virtual reality did not to emerge in the research until 2020, indicating a growing interest among researchers in the therapeutic applications of VR technology and its possibilities in mental health.

The outcomes of this research might be beneficial for a range of individuals starting from healthcare professionals, TIC program developers to policymakers encouraging them for trauma-informed approach implementation with a large system of care. The findings from scoping review represent how trauma-informed approach affects in well-being both groups care providers and care receivers.

Understanding the importance of trauma-informed care may further stimulate research in this direction, which will enable people to overcome their traumas in routine life. Trauma-informed could be in remission, like cancer for a long time, so further research will prevent a detrimental effect on a person's physical and mental health. Setting a clear framework for what trauma-informed care is a fundamental problem, they are very closely similar to PTSD, which makes it quite difficult to identify the problem when it first emerges in a person.

REFERENCES

Akin, A. B., Collins-Camargo, C., Strolin-Goltzman, J., Antle, B., Verbist, A. N., Palmer, A. N., Krompg, A. (2021). Screening for trauma and behavioral health needs in child welfare: Practice implications for promoting placement stability. Child abuse & Neglect, 122. https://doi.org/10.1016/j.chiabu.2021.105323

Azzopardi, C., Shih, C. S. Y., Burke, A. M., Kirkland-Burke, M., Moddejonge, J. M., Smith, T. D., Eliav, J. (2022). Supporting survivors of child sexual abuse during the COVID-19 pandemic: An ecosystems approach to mobilizing trauma-informed elemental healthcare. Canadian Psychology/ Psychologie Canadienne, 63(1), 43-55. https://doi.org/10.1037/cap0000298

Becker-Blease, K. (2017). As the world becomes trauma-informed, work to do. Journal of Trauma & Dissociation, 18(2), 131-138. https://doi.org/10.1080/15299732.2017.1253401

Bryson, S. A., Gauvin, E., Jamieson, A., Rathgeber, M., Faulkner-Gibson, L., Bell, S., Davidson, J., Russel, J., & Burke, S. (2017). What are effective strategies for implementing trauma-informed care in youth inpatient psychiatric and residential treatment settings? A realist systematic review. International Journal of Mental Health Systems, 11(36). https://doi.org/10.1186/s13033-017-0137-3

CASP. Critical Appraisal Skills Programme. (2022). Retrieved August 30, 2022, from https://casp-uk.net/casp-tools-checklists/

Chadwick, E., Billings, J. (2022). Barriers to delivering trauma-focused interventions for people with psychosis and post-traumatic stress disorder: A qualitative study of health care professionals' views. Psychology and psychotherapy, 95(2), 541-560. https://doi.org/10.1111/papt.12387

Christopher, M., Maul, A. (2016). Key ingredients for successful trauma-informed care implementation. Retrieved June 12, 2022 from https://www.samhsa.gov/sites/default/files/programs_campaigns/childrens_mental_health/atc-whitepaper-040616.pdf

Culbert, T. (2017). Perspectives on technology-assisted relaxation approaches to support mind-body skills practice in children and teens: clinical experience and commentary. Journal of children (Basel). https://doi.org/10.3390/children4040020

Cutuli, J. J., Alderfer, M. A., Marsac, M. L. (2019). Introduction to the special issue: Trauma-informed care for children and families. Psychological Services, 16(1), 1-6. https://doi.org/10.1037/ser0000330

DeCandia, C. J., Guarino, K., Clervil, R. (2014). Trauma-Informed Care and Trauma-Specific Services: A comprehensive approach to trauma intervention. Retrieved April 6, 2022, from https://www.air.org/sites/default/files/downloads/report/Trauma-Informed%20Care%20White%20Paper_October%202014.pdf

Dugan, J., Boosheri, L. G., Phojanakong, P., Patel, P., Brown, E., Bloom, S., Chilton, M. (2020). Effects of a trauma-informed curriculum on depression, self-efficacy, economic security, and substance use among TANF participants: Evidence from the Building Health and Wealth Network Phase II. Social science & medicine (1982), 258. https://doi.org/10.1016/j.socscimed.2020.113136

Frewen, P., Mistry, D., Jenney, Z., Kielt, T., Wekerle, C., Lanius, R. A., Jetly, R. (2020). Proof of concept of an eclectic, integrative therapeutic approach to mental health and well-being through virtual reality technology. Frontiers in psychology, 11, 858. https://doi.org/10.3389/fpsyg.2020.00858

Gerber, M. R., Elisseou, S., Sager, Z. S., Keith, J. A. (2020). Trauma-informed telehealth in the COVID-19 Era and Beyond. Federal Practitioner, 37(7), 302-308. https://doi.org/10.12788/fp.0012

Ghafoori, B., Garfin, D. R., Ramirez, J., Khoo, S. F. (2019). Predictors of treatment initiation, completion, and selection among youth offered trauma-informed care. Psychological Trauma: Theory, Research, Practice, and Policy, 11(7), 767-774. https://doi.org/10.1037/tra0000460

Javakhishvili, J. D., Ardino, V., Bragesjö, M., Kazlauskas, E., Olff, M., Schäfer, I. (2020). Trauma-informed responses in addressing public mental health consequences of the COVID-19 pandemic: position paper of the European Society for Traumatic Stress Studies (ESTSS). European journal of psychotraumatology, 11(1). https://doi.org/10.1080/20008198.2020.1780782

Johnson, E. G., Davis, E. B., Johnson, J., Pressley, J. D., Sawyer, S., Spinazzola, J. (2020). The effectiveness of trauma-informed wilderness therapy with adolescents: A pilot study. Psychological Trauma: Theory, Research, Practice, and Policy, 12(8), 878-887. https://doi.org/10.1037/tra0000595

Keyworth, C., Hart, J., Armitage, C. J., Tully, M. P. (2018). What maximizes the effectiveness and implementation of technology-based interventions to support healthcare professional practice? A systematic literature review. BMC medical informatics and decision making, 18(1), 93. https://doi.org/10.1186/s12911-018-0661-3

Kim, J., Aggarwal, A., Maloney, S., Tibbits, M. (2022). Organizational assessment to implement trauma-informed care to first responders, child welfare providers, and healthcare professionals. Professional Psychology: Research and Practice, 52(6), 569-578. https://doi.org/10.1037/pro0000408

Kimberg, L., Wheeler, M. (2019). Trauma and Trauma-Informed care. Chapter 2. Retrieved July 2, 2022, from https://www.acesaware.org/wp-content/uploads/2019/12/Chapter-2-Trauma-and-Trauma-Informed-Care.pdf

Knight, C. (2019). Trauma informed practice and care: Implications for field instruction. Clinical Social Work Journal, 47(1), 79-89. https://doi.org/10.1007/s10615-018-0661-x

Kubiak, S. P., Covington, S. S., Hillier, C. (2017). Trauma-Informed Corrections. Retrieved September 5, 2022, from https://www.researchgate.net/profile/Stephanie-Covington-2/publication/347943130_Trauma-Informed_Corrections/links/5fe9019d45851553a0fb2575/Trauma-Informed-Corrections.pdf

Levenson, J. (2017). Trauma-Informed Social Work Practice. Social work, 62(2), 105-113. https://doi.org/10.1093/sw/swx001

Long, A. H., French, D. P., Brooks, J. M. (2020). Optimising the value of the critical appraisal skills programme (CASP) tool for quality appraisal in qualitative evidence synthesis. Research Methods in Medicine & Health Sciences, 1(1), 31-42. https://doi.org/10.1177%2F2632084320947559

Meis, L. A., Noorbaloochi, S., Hagel Campbell, E. M., Erbes, C. R., Polusny, M. A., Velasquez, T. L., Spoont, M. R. (2019). Sticking it out in trauma-focused treatment for PTSD: It takes a village. Journal of Consulting and Clinical Psychology, 87(3), 246-256. https://doi.org/10.1037/ccp0000386

Menschner, C., Maul, A. (2016). Key ingredients for successful trauma-informed care implementation. Retrieved August 28, 2022, from https://www.samhsa.gov/sites/default/files/programs_campaigns/childrens_mental_health/atc-whitepaper-040616.pdf

Mistry, D., Zhu, J., Tremblay, P., Wekerle, C., Lanius, R., Jetly, R., Frewen, P. (2020). Meditating in virtual reality: Proof-of-concept intervention for posttraumatic stress. Psychological Trauma: Theory, Research, Practice, and Policy, 12(8), 847-858. https://doi.org/10.1037/tra0000959

Munn, Z., Peters, M., Stern, C., Tufanaru, C., McArthur, A. & Aromataris, E. (2018). Systematic review or scoping review? Guidance for authors when choosing between a systematic or scoping review approach. BMC Medical Research Methodology, 18(143). https://doi.org/10.1186/s12874-018-0611-x

Murphy, K., Moore, A. K., Redd, Z., Malm, K. (2017). Trauma-informed child welfare systems and children well-being: A longitudinal evaluation of KVC's bridging the way home initiative. Children and Youth Services Review, 75, 23-34. https://doi.org/10.1016/j.childyouth.2017.02.008

Nevala, N., Pehkonen, I., Koskela, I., Ruusuvuori, J., Anttila, H. (2014). Työolosuhteiden mukauttaminen vammaisilla henkilöllä: vaikuttavuus sekä estävät ja edistävät tekijät. Kela. Retrieved August 30, 2022, from https://helda.helsinki.fi/bitstream/handle/10138/135671/Tyopapereita61.pdf?seque

Peters, M. D.J., Marnie, C., Tricco, A. C., Pollock, D., Munn, Z., Lyndsay, A., Mclnerney, P., Godfrey, C. M., Khalil, H. (2020). Updated methodological guidance for the conduct of scoping reviews. JBI evidence synthesis, 18(10), 2119-2126. https://doi.org/10.11124/JBIES-20-00167

Peters, M. D.J., Marnie, C., Colquhon, H., Garritty, C. M., Hempel, S., Horsley, T., Langlois, E. V., Lillie, E., O'Brien, K. K., Tuncalp, O., Wilson, M. G., Zarin, W.,

Tricco, A. C. (2021). Scoping review: reinforcing and advancing the methodology and application. Systematic Reviews, 10 (263). https://doi.org/10.1186/s13643-021-01821-3

Phojanakong, P., Welles, S., Dugan, J., Booshehri, L., Weida, E. B., Chilton, M. (2020). Trauma-informed financial empowerment programming improves food security among families with young children. Journal of nutrition education and behavior, 52(5), 465-473. https://doi.org/10.1016/j.jneb.2020.02.008

Ranjbar, N., Erb, M. (2019). Adverse childhood experiences and trauma-informed care in rehabilitation clinical practice. Archives of Rehabilitation Research and Clinical Translation, 1(1-2). https://doi.org/10.1016/j.arrct.2019.100003

Rosenberg, H., Errett, N. A., Eisenman, D. P. (2022). Working with disaster-affected communities to envision healthier futures: a trauma-informed approach to post-disaster recovery planning. International journal of environmental research and public health, 19(3), 1723. https://doi.org/10.3390/ijerph19031723

Ruzer, J. I., Yeager, C. M. (2017). Internet and mobile technologies: addressing the mental health of trauma survivors in less resourced communities. Global Mental Health, 4(16). https://doi.org/10.1017/gmh.2017.11

SAMHSA. (2014). Trauma-Informed Care in Behavioral Health Services. A Treatment Improvement Protocol (TIP) Series, No. 57. Substance Abuse and Mental Health Services Administration. Retrieved December 6, 2020, from https://www.ncbi.nlm.nih.gov/books/NBK207201/?report=classic

SAMHSA. (2015). Using technology-based therapeutic tools in behavioral health services. A treatment improvement protocol (TIP) Series, No. 60. Retrieved August 26, 2022, from https://store.samhsa.gov/sites/default/files/d7/priv/sma15-4924.pdf

Sanders, M. R., Hall S. L. (2018). Trauma-informed care in the newborn intensive care unit: promoting safety, security and connectedness. Journal of Perinatology 38(3-10). https://doi.org/10.1038/jp.2017.124

Schmid, M., Lüdtke, J., Dolitzsch, C., Fischer, S., Eckert, A., Fegert, J. M. (2020). Effect of trauma-informed care on hair cortisol concentration in youth welfare staff and client physical aggression towards staff: results of a longitudinal study. BMC Public Health, 20(21). https://doi.org/10.1186/s12889-019-8077-2

Simons, M., Kimble, R., Tyack, Z. (2021). Understanding the meaning of trauma-informed care for burns health care professionals in a pediatric hospital: A qualitative study using interpretive phenomenological analysis. Journal of the International Society for Burn Injuries, 48(6), 1462-1471. https://doi.org/10.1016/j.burns.2021.10.015

Smith, T. R., Whooley, O. (2015). Dropping the Disorder in PTSD. Contexts, 14(4), 38-43. https://doi.org/10.1177/1536504215609300

Sweeney, A., Filson, B., Kennedy, A., Collinson, L., Gillard, S. (2018). A paradigm shift: relationships in trauma-informed mental health services. BJPsych advances, 24(5), 319-333. https://doi.org/10.1192/bja.2018.29

Taggart, D., Sweeney, A. (2018). (Mis)understanding trauma informed approaches in mental health. Journal of Mental Health. Journal of mental health (Abingdon, England), 27(5), 383-387. https://doi.org/10.1080/09638237.2018.1520973

TENK. (2012). Responsible conduct of research and procedures for handling allegations of misconduct in Finland. Retrieved September 12, 2022, from https://www.tenk.fi/sites/tenk.fi/files/HTK_ohje_2012.pdf

Tibbitts, D. C., Aicher, S. A., Sugg, J., Handloser, K., Eisman, L., Booth, L. D., Bradley, R. D. (2020). Program evaluation of trauma-informed yoga for vulnerable populations. Evaluation and program planning, 88. https://doi.org/10.1016/j.evalprogplan.2021.101946

Wilson, C., Pence, D. M., Concradi, L. (2013). Trauma-Informed Care. Encyclopedia of Social Work. https://doi.org/10.1093/acrefore/9780199975839.013.1063

Watkins, L., Sprang, R., Rothbaum, B. (2018). Treating PTSD: A review of evidence-based psychotherapy interventions. Frontiers in behavioral neuroscience, 12, 258. https://doi.org/10.3389/fnbeh.2018.00258

CASP
Critical Appraisal Skills Programme

Paper for appraisal and reference:.....

Section A: Are the results of the review valid?

1. Did the review address a clearly focused question?

Yes	
Can't Tell	
No	

HINT: An issue can be 'focused' In terms of
- the population studied
- the intervention given
- the outcome considered

Comments:

2. Did the authors look for the right type of papers?

Yes	
Can't Tell	
No	

HINT: 'The best sort of studies' would
- address the review's question
- have an appropriate study design (usually RCTs for papers evaluating interventions)

Comments:

Is it worth continuing?

3. Do you think all the important, relevant studies were included?

Yes	
Can't Tell	
No	

HINT: Look for
- which bibliographic databases were used
- follow up from reference lists
- personal contact with experts
- unpublished as well as published studies
- non-English language studies

Comments:

CASP
Critical Appraisal Skills Programme

4. Did the review's authors do enough to assess quality of the included studies?

Yes ☐
Can't Tell ☐
No ☐

HINT: The authors need to consider the rigour of the studies they have identified. Lack of rigour may affect the studies' results ("All that glisters is not gold" Merchant of Venice – Act II Scene 7)

Comments:

5. If the results of the review have been combined, was it reasonable to do so?

Yes ☐
Can't Tell ☐
No ☐

HINT: Consider whether
- results were similar from study to study
- results of all the included studies are clearly displayed
- results of different studies are similar
- reasons for any variations in results are discussed

Comments:

Section B: What are the results?

6. What are the overall results of the review?

HINT: Consider
- If you are clear about the review's 'bottom line' results
- what these are (numerically if appropriate)
- how were the results expressed (NNT, odds ratio etc.)

Comments:

CASP
Critical Appraisal Skills Programme

7. How precise are the results?

HINT: Look at the confidence intervals, if given

Comments:

Section C: Will the results help locally?

8. Can the results be applied to the local population?

Yes	
Can't Tell	
No	

HINT: Consider whether
- the patients covered by the review could be sufficiently different to your population to cause concern
- your local setting is likely to differ much from that of the review

Comments:

9. Were all important outcomes considered?

Yes	
Can't Tell	
No	

HINT: Consider whether
- there is other information you would like to have seen

Comments:

10. Are the benefits worth the harms and costs?

Yes	
Can't Tell	
No	

HINT: Consider
- even if this is not addressed by the review, what do you think?

Comments:

APPENDIX 2

Table 2. Articles included in the scoping review

Author(s), publishing year	**Title**
Tibbitts et al., 2021	Program evaluation of trauma-informed yoga for vulnerable populations.
Ranjbar & Erb, 2019	Adverse childhood experiences and trauma-informed care in rehabilitation clinical practice.
Javakhishvili et al., 2020	Trauma-informed responses in addressing public mental health consequences of the COVID-19 pandemic: position paper of the European Society for Traumatic Stress Studies (ESTSS).
Rosenberg et al., 2022	Working with disaster-affected communities to envision healthier futures: a trauma-informed approach to post-disaster recovery planning.
Dugan et al., 2020	Effects of a trauma-informed curriculum on depression, self-efficacy, economic security, and substance use among TANF participants: Evidence from the Building Health and Wealth Network Phase II.
Simons et al., 2021	Understanding the meaning of trauma-informed care for burns health care professionals in a pediatric hospital: A qualitative study using interpretive phenomenological analysis.
Bryson et al., 2017	What are effective strategies for implementing trauma-informed care in youth inpatient psychiatric and residential treatment settings? A realist systematic review.
Gerber et al., 2020	Trauma-informed telehealth in the COVID-19 Era and Beyond.
Sweeney et al., 2018	A paradigm shift: relationships in trauma-informed mental health services.
Murphy et al., 2017	Trauma-informed child welfare systems and children well-being: A longitudinal evaluation of KVC's bridging the way home initiative.
Cutuli et al., 2019	Introduction to the special issue: Trauma-informed care for children and families.
Ghafoori et al., 2019	Predictors of treatment initiation, completion, and selection among youth offered trauma-informed care.
Johnson et al., 2020	The effectiveness of trauma-informed wilderness therapy with adolescents: A pilot study.
Akin et al., 2021	Screening for trauma and behavioral health needs in child welfare: Practice implications for promoting placement stability.

Phojanakong et al., 2020	Trauma-informed financial empowerment programming improves food security among families with young children.
Sanders & Hall, 2018	Trauma-informed care in the newborn intensive care unit: promoting safety, security and connectedness.
Schmid et al., 2020	Effect of trauma-informed care on hair cortisol concentration in youth welfare staff and client physical aggression towards staff: results of a longitudinal study.
Azzopardi et al., 2022	Supporting survivors of child sexual abuse during the COVID-19 pandemic: An ecosystems approach to mobilizing trauma-informed elemental healthcare.
Mistry et al., 2020	Meditating in virtual reality: Proof-of-concept intervention for posttraumatic stress.
Frewen et al., 2020	Proof of concept of an eclectic, integrative therapeutic approach to mental health and well-being through virtual reality technology.