






## Trauma-afflicted refugees' experiences of participating in physical activity and exercise treatment: a qualitative study based on focus group discussions

Henrik Nilsson <sup>a,b,c</sup>, Fredrik Saboonchi <sup>a,b</sup>, Catharina Gustavsson <sup>a,d</sup>, Andreas Malm <sup>a,b,c</sup>  
and Maria Gottvall <sup>a,e</sup>

<sup>a</sup>Department of Health Sciences, The Swedish Red Cross University College, Huddinge, Sweden; <sup>b</sup>Department of Clinical Neuroscience, Karolinska Institutet, Stockholm, Sweden; <sup>c</sup>The Swedish Red Cross Treatment Center for Persons Affected by War and Torture, Malmö, Sweden; <sup>d</sup>Center for Clinical Research Dalarna, Uppsala University, Falun, Sweden; <sup>e</sup>Department of Women's and Children's Health, Uppsala University, Uppsala, Sweden

### ABSTRACT

**Background:** Refugees with prolonged and repeated experiences of trauma, often in combination with post-migration living difficulties, are subjected to severe levels of stress and stress-related ill health, including post-traumatic stress disorder (PTSD). Physical activity (PA) is well-established as an effective stress reliever. However, the effect of PA and exercise has received scarce attention in the context of PTSD, and particularly in the field of refugees' health.

**Objective:** The objective of this study was to explore the experience of participation in PA and exercise as part of the treatment for trauma-afflicted refugees.

**Method:** An explorative qualitative research design was used. Six focus group discussions were conducted with 33 female and male participants that had experience of group-based PA and exercise treatment. The gathered data was analysed by qualitative content analysis.

**Results:** The analysis resulted in one over-arching theme reflecting the participants overall experience of PA and exercise as a process of building resilience. Participants experienced improvements in both physical and mental health domains. Increased self-awareness and self-confidence were seen as additional important benefits, and the interruption of daily stressors provided a sense of relief and recovery. The treatment group settings were experienced as becoming a vehicle for overcoming social fear and isolation, which also carried an empowering and strength-building impact over to participants' family life and social relationships. Treatment characteristics were experienced as highly supportive and often referred to as the basis of other positive experiences and perceived health benefits.

**Conclusions:** The result of this study outlines a detailed account of trauma-afflicted refugees' experiences and preferences of PA and exercise-based treatment from a broad range of perspectives. These findings provide a starting point for future research in this field and indicate a particular need for both research and intervention development to include the real-life impact of participating in such treatments.

### Las experiencias de refugiados afectados por el trauma al participar en un tratamiento de actividad física y ejercicio: un estudio cualitativo basado en discusiones en grupos focales

**Antecedentes:** Los refugiados que presentar experiencias traumáticas prolongadas y repetidas, a menudo en combinación con dificultades de vida post migratorias, están sometidos a niveles severos de estrés y de mala salud relacionada con el estrés, incluido el trastorno de estrés posttraumático (TEPT). La actividad física (PA por sus siglas en inglés) es una manera bien establecida y efectiva de aliviar el estrés. Sin embargo, el efecto de la PA y el ejercicio ha recibido escasa atención en el contexto del TEPT, particularmente en el campo de la salud de refugiados.

**Objetivo:** el objetivo de este estudio fue explorar la experiencia de participación en PA y ejercicio como parte del tratamiento en refugiados afectados por el trauma.

**Método:** se utilizó un diseño de investigación exploratoria cualitativa. Se condujeron discusiones en 6 grupos focales con 33 participantes femeninos y masculinos que habían experimentado el tratamiento de PA y ejercicio. Los datos recolectados fueron analizados por un análisis de contenido cualitativo.

**Resultados:** Los análisis resultaron en una temática general que reflejaba la experiencia global de los participantes de la PA y el ejercicio como un proceso de construcción de resiliencia. Los participantes experimentaron mejoría en dominios tanto de salud mental como física. El incremento de la auto-conciencia y la confianza en sí mismo fueron vistos como beneficios adicionales importantes, y la interrupción de estresores diarios llevó a un sentimiento de alivio y recuperación. El setting de tratamiento grupal fue experimentado como un vehículo para superar el miedo social y el aislamiento, lo que llevó a un impacto de empoderamiento y construcción de fortaleza en la vida familiar y relaciones sociales de los participantes. Las características del tratamiento fueron experimentadas como de alto nivel

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### PALABRAS CLAVE

Actividad física; ejercicio; refugiado; trauma; trastorno de estrés posttraumático; TEPT; estrés post-migración; psicoterapia; tratamiento grupal; salud mental

### 关键词

体育锻炼; 运动; 难民; 创伤; 创伤后应激障碍; PTSD; 移民后应激; 物理疗法; 团体治疗; 精神健康

### HIGHLIGHTS

- This study provides a unique outline of trauma-afflicted refugees' experiences and preferences of participation in physical activity and exercise-based treatment, pointing to a multitude of pathways toward building resilience.
- In participants' experience, treatment actively aided in both psychological and physical recovery, provided relief from daily problems, increased empowerment and self-confidence, and facilitated social adjustment and relationships.
- Treatment characteristics was highlighted as highly supportive and often connected to other positive experiences and perceived health benefits.

de apoyo y en muchas ocasiones referida como la base de otras experiencias positivas y beneficios de salud percibidos.

**Conclusiones:** El resultado de este estudio destaca un relato detallado de las experiencias y preferencias de refugiados afectados por el trauma en los tratamientos basados en PA y ejercicio desde un rango amplio de perspectivas. Estos hallazgos proveen de un punto de partida para investigación futura en este campo e indica una particular necesidad tanto para investigación como para el desarrollo de intervenciones para incluir el impacto en la vida real de participar en tales tratamientos.

### 遭受创伤的难民参与体育锻炼与运动治疗的体验:基于焦点小组讨论的定性研究

**背景:** 长期, 反复遭受常与移民后生存困境联合发生创伤的难民, 经历着严重的应激及应激相关健康不良, 包括创伤后应激障碍 (PTSD)。进行体育锻炼 (PA) 是公认的有效缓解压力的方法。但是, 在创伤后应激障碍的背景下, 尤其是在难民的健康领域, 体育锻炼与运动的效果仍鲜为人知。

**目标:** 本研究旨在探讨参与PA及运动作为对遭受创伤难民治疗的一部分的体验。

**方法:** 使用了探索性定性研究设计。与33位有过团体PA与运动治疗经历的男女参与者进行了六次焦点小组讨论。通过定性内容分析对收集到的数据进行分析。

**结果:** 分析得出的总体主题反映了参与者将PA与运动的整体体验作为培养心理韧性的过程。参与者在躯体和心理健康领域都得到了改善。增强的自我意识和自信心被视为额外的重要好处, 而日常应激源的中断提供了一种缓解和恢复感。治疗组的设定已成为克服社交恐惧感与隔离的工具, 这也给参与者的家庭生活和社会关系带来了赋权和建立力量的影响。体验者认为治疗的特点是具有高度支持性, 且常称其为其他积极体验和可感知健康益处的基础。

**结论:** 本研究的结果概述了遭受创伤难民的详细经历, 也从广泛的视角表达了对PA与运动治疗的偏好。这些发现为该领域的未来研究提供了起点, 并为开发研究和干预措施指明了特定需求, 以涵盖参与此类治疗对现实生活的影响。

## 1. Introduction

Ongoing conflicts and persecution around the world have resulted in the highest number of forcibly displaced people since World War II (UNHCR, 2018). Refugees with prolonged and repeated experiences of trauma, often in combination with post-migration living difficulties, are subjected to severe levels of stress, stress-related ill health and increased risk of lifestyle diseases (Bogic, Njoku, & Priebe, 2015; Fazel, Wheeler, & Danesh, 2005; Lindencrona, Ekblad, & Hauff, 2008; Steel et al., 2009). Post-traumatic stress disorder (PTSD) constitutes a frequently diagnosed disorder in this context (Bogic et al., 2015; Fazel et al., 2005), with highly prevalent comorbidity of both mental and physical distress, chronic pain and somatization, loss of self-regulatory capacities, and disabilities of daily life functioning (El Sount et al., 2019; Gupta, 2013; Lindencrona et al., 2008; van der Kolk, Roth, Pelcovitz, Sunday, & Spinazzola, 2005). People with PTSD are also known to have very low levels of both physical and social activity, previously studied as considerable maintenance factors of both PTSD and associated distress (Leardmann et al., 2011; Liedl & Knaevelsrud, 2008; Vancampfort et al., 2016). The complex array of post-traumatic and post-migratory stress among trauma-afflicted refugees marks an increased need of novel treatment strategies in the healthcare systems to target both mental and physical health, as well as to promote general health behaviour, daily life functioning, and psychosocial adjustment (Drozdek, 2015; El Sount et al., 2019;

Hall, Hoerster, & Yancy, 2015; Lanzara, Scipioni, & Conti, 2019; Silove, Ventevogel, & Rees, 2017).

Physical activity (PA), particularly when performed in social settings, is well-established as an effective stress reliever, and has been associated with improved physical and mental wellbeing, reduced burden of pain and other somatic symptoms, increased cognitive and functional capacity, overall life satisfaction, and decreased risks of lifestyle diseases (Ambrose & Golightly, 2015; Penedo & Dahn, 2005). Interventions with PA and exercise (e.g. aerobic conditioning, muscle strengthening, flexibility training, and movement therapies) are generally considered as important treatment components in stress-related ill health. However, the effectiveness of such interventions has received rather scarce research attention in the context of PTSD (Lawrence, De Silva, & Henley, 2010; Rosenbaum et al., 2015) and particularly in the field of refugees' health (Ley, Rato Barrio, & Koch, 2018). This may appear especially striking given the bodily and physical correlates of trauma-related ill-health in general and PTSD in particular (El Sount et al., 2019; Gupta, 2013; Pacella, Hruska, & Delahanty, 2013; Van der Kolk, 2015).

The first systematic review and meta-analysis regarding the effect of PA on PTSD (Rosenbaum et al., 2015) identified 4 RCT studies and concluded promising results of PA as an adjunctive intervention to decrease PTSD and comorbid depressive

symptoms. These results are also well in line with a more recent review (Oppizzi & Umberger, 2018) on PA and PTSD, which included a wider range of studies besides RCTs. The key results of Oppizzi and Umberger (2018) indicate that PA reduces PTSD symptom severity as well as leads to improvements of several health conditions often accompanying PTSD (e.g. anxiety, depression, pain disorders, sleep disturbances, and cardiovascular diseases). These reviews also point to a current need for more research on issues such as the optimal type and amount of PA, strategies to increase the acceptability of PA and exercise interventions, methods for integrating PA interventions in established PTSD treatment models, and strategies for motivating patients' continuous PA and exercise behaviour after concluded treatment. In addition to symptom reduction, the current literature also underlines the potential wider range of beneficial effects (e.g. psychosocial health and functional capacity) that PA and exercise may carry to patients' overall life situation (Hall et al., 2015; Ley et al., 2018; Oppizzi & Umberger, 2018; Rosenbaum et al., 2015).

The latter may be of special relevance concerning trauma-afflicted refugee populations that often present multiple and complex trauma (Fazel et al., 2005; Nickerson et al., 2016; Steel et al., 2009). Moreover, refugees often face profound challenges associated with psychosocial post-resettlement adversities (Lindencrona et al., 2008; Silove et al., 2017), whereby PTSD symptomology may become imbedded in a wider exile-related context of living conditions ranging from psychological distress to uprooted social structures and transformed family and social roles. Furthermore, refugees as a specific at-risk population, face potential social, language and cultural barriers to access traditional PTSD treatment. In contrast, PA and exercise interventions are predicted to be easier used across cultures, being more accessible, and potentially easier to translate to various settings and backgrounds (Oppizzi & Umberger, 2018).

The sparsity of research on PA and PTSD among refugee populations, especially addressing a broader post-migratory living context, may compound considerable challenges for optimizing the processes and outcomes of treatment. With the notable exception by Ley and colleagues' qualitative exploration of how the effects of PA on PTSD are achieved (Ley et al., 2018), there is a lack of patient experience-based knowledge in refugee populations. Given the increased attention to the patient-centred care paradigm (Rathert, Wyrwich, & Boren, 2013), there is a primacy to expand the understanding of the subjective experiences of trauma-afflicted refugees who receive PA and exercise treatment beyond a narrow symptom focus. As the tenets of patient-centred care include a holistic biopsychosocial perspective, 'patient-as-person', sharing of responsibility and power, and

enabling a therapeutic alliance (Mead & Bower, 2000), there is a pronounced need for knowledge about how PA and exercise-based treatment is perceived from the patients' perspectives (e.g. patients' preferences, perceptions of potential outcomes, and barriers and facilitators to treatment) in a broader approach. Further, such knowledge may substantially contribute to more efficient and context-sensitive design, implementation and evaluation of future PA and exercise interventions within this field.

Thereby, the objective of this study was to explore trauma-afflicted refugees' experiences and preferences of participation in PA and exercise-based treatment from a holistic perspective.

## 2. Methods

### 2.1. Study design

An explorative qualitative research design with focus group discussions (FGD) was used (Liamputtong, 2011). FGDs were selected for data collection since the group process occurring in such discussion groups can help people to explore and clarify opinions in ways that would be less easily accessible in a one-to-one interview, and further, to create interactive conversations, evoke memories, and to enable testing the consistency of statements. The study adheres to the COREQ guidelines for reporting qualitative studies (Tong, Sainsbury, & Craig, 2007), it was approved by the Swedish Ethical Review Board (2016/1815-31/2) and the study design complied with the principles of ethical standards according to The Declaration of Helsinki (National Library of Medicine, 2013).

### 2.2. Study setting and participants

The study took place at the Swedish Red Cross Treatment Centre for Persons Affected by War and Torture (RCC) in Malmö. The RCC provides multimodal treatment (including psychotherapy, physiotherapy, medical treatment, and social counselling) for trauma-afflicted refugees, and the majority of patients are referred to the centre from either primary health care or psychiatric outpatient clinics. Being referred to and accepted for treatment at the RCC implies severe health problems related to traumatic experiences of war, torture and/or forced migration, including complex cases of PTSD, associated physical and mental health problems, and often in combination with post-migration living difficulties. Interventions including PA and exercise are offered to most patients as adjunctive group-based treatment, e.g. warm-water pool training, aerobics classes, yoga, gym training, ball sport activities, Basic Body Awareness Training (Stade, Skammeritz, Hjortkjær, & Carlsson, 2015), and

Tension and Trauma Releasing Exercises (Berceli, Salmon, Bonifas, & Ndefo, 2014). All PA and exercise groups are led by experienced physiotherapists, delivered separately for men and women, and often involve both psychoeducational components and adjusted practical exercises. Group participation is in most cases preceded by both physiotherapeutic and psychological individual assessments.

A purposeful sample of Arabic speaking refugees >18 years old, women and men, with PTSD related to trauma from war, torture, and/or forced migration, and who had participated in one or several options of the PA and exercise-based treatment at the RCC for at least three months, were recruited. Exclusion criteria were: serious suicidal ideation, psychosis, serious cognitive impairments, or current substance abuse, which had been determined by the preceding assessment process at the RCC. The purposive sampling strategy aimed to include variation concerning gender, age, types of PA and exercise treatment, and the duration of such treatment. The final sample size was dictated when theoretical saturation was reached and thereby no new or relevant data seemed to emerge (Liamputtong, 2011). Participants were divided in six focus groups (two groups of women and four groups of men) with four to six individuals per group. Women and men were divided into separate groups based on clinical experience where both genders had expressed feelings of being more comfortable this way.

### **2.3. Procedure and data collection**

The FGDs were conducted between December 2016 and May 2017. Eligible participants received oral and written information about the study in connection to PA/exercise treatment sessions at the RCC and were invited to register their interest to participate. Before the start of each FGD, participants also received a brief repetition about the study, including a more detailed description of the FGD procedure, measures for confidentiality, opportunity to ask questions, and provided written consent to participate. The FGDs were undertaken in a group meeting room at the RCC, which was a familiar place for all participants, and considered important for participants' comfort. Each FGD lasted between 90–120 minutes.

A moderator led the FGDs and an observer assisted. The observer carefully overviewed participants' comfort, took notes, and assisted in summarizing the discussions immediately after each FGD was concluded. The first author, a physiotherapist experienced in working with the target group, moderated all the FGDs, and the third author, a male psychologist also experienced in working with the target group, observed in the four FGDs of men. In the two FGDs of women, a female physiotherapist assisted as the observer. Both moderator and observers had extensive clinical experience of working at the RCC, which was believed to facilitate the discussions and to

gain trust, allowing the participants to share their experiences. The fact that both moderator and observers worked at the RCC was clearly acknowledged in all FGDs. Participants were encouraged to speak openly about both positive and negative experiences and ensured that whatever opinions they expressed it would not affect their treatment at the RCC. All FGDs were held in Arabic, facilitated by an experienced Arabic-speaking interpreter employed at the RCC, who had also received training in FGD methodology before the start of the study. Considering the possible difficulties of moderating a FGD in another language than the participants' (Kapborg & Berterö, 2002), informal member checks (Liamputtong, 2011) took place at specific intervals, to see that both the moderator and the observer had understood the discussion correctly and to provide an opportunity for participants to elaborate on their answers.

The FGDs were also facilitated by a semi-structured question guide, including the following content areas: overall experiences of participation in PA and exercise treatment at the RCC, positive or negative effects from any perspective, barriers and facilitators of participation, use of new skills or knowledge in daily life, and thoughts about the future regarding PA and exercise. The guide was not used as a strict manual, but rather as a conceptual framework aimed to direct or diversify the discussions when needed. The moderator used open questions and probes such as 'can you tell me more about that', and participants were also encouraged to discuss freely about anything in mind as an attempt to not miss out on any relevant topics not being included in the question guide. The FGD procedure and question guide were also pre-tested in a pilot FGD. The pilot FGD indicated the procedure to be highly viable, and the participants showed great willingness to share their experiences. All FGDs except the pilot FGD were audio-recorded and transcribed verbatim in Swedish. The interpreter checked the transcripts for correctness.

### **2.4. Analysis**

Data were analysed by qualitative content analysis, including steps of coding and categorizing the data in relation to the research questions (Hsieh & Shannon, 2005; Liamputtong, 2011). Immediately after each FGD, the moderator and the observer discussed the content of the FGD and wrote memos. The transcripts of the recorded FGDs were read through several times in order to become familiar with the data and to obtain an overall understanding of its content. Randomly selected parts of the transcribed FGDs were also transcribed in Arabic, then re-translated into Swedish to make sure that the true meaning of the discussions had been captured and to avoid lost information due to the group interaction and simultaneous interpretation during the FGDs. The analysis of the FGDs started before the last



**Table 1.** Example of the analytical process.

Meaning unit from FGD transcript	Code	Sub-category	Category	Theme
"The day and night after exercising I feel tired in a different way, in a good way."	Feeling relaxed	Alleviating and coping with physical and mental distress	Physical and mental health	Building resilience through relief and recovery
"I am more relaxed, and it is easier to fall asleep, and I don't wake up as many times as usual."	Improved sleep			

FGD was conducted, to make sure that theoretical saturation was reached.

Open coding of the data was done by manually working through the transcripts. First, coding and preliminary categorization was done separately by two of the authors (first and last author) to ensure inter-coder reliability. Then, the coding was discussed between the two authors. The discussions highlighted agreement on all major codes and categories, but also implied several codes to be refined and sometimes combined due to similar meaning. All codes were then further sorted into sub-categories within each main category (see Table 1 for example of the analytical process). Finally, all original transcripts were re-examined to ensure that no relevant data had been missed. At this stage, all authors read the transcripts of the FGDs, discussed and agreed on the final categories, as well as concluded an over-arching theme.

### 3. Results

#### 3.1. Sample characteristics

The total sample consisted of 33 participants, 10 women and 23 men, all Arabic speaking and originating from Iraq, Syria, Lebanon, Jordan, or Palestine. According to the inclusion criteria, all participants were suffering from PTSD related to traumatic experiences of war, torture and/or forced migration. Most participants had participated in more than one type of PA and exercise group as part of their treatment at the RCC (see Table 2 for more detailed characteristics of the sample). Approximately 50

patients were informed about the study and invited to register their interest to participate. Most of the patients who declined participation did so because they could not make it to the scheduled times of the FGDs. Two women and one man were scheduled to the FGDs but cancelled for personal reasons.

#### 3.2. Results of qualitative content analysis

The qualitative content analysis resulted in one over-arching theme: *Building resilience through relief and recovery*, including four categories: I. *Physical and mental health*, II. *Empowerment*, III. *Relationships and social adjustment*, and IV. *Treatment characteristics*. Further, each category contains two to three sub-categories (presented in Figure 1).

Below, each of the four categories and their sub-categories are described.

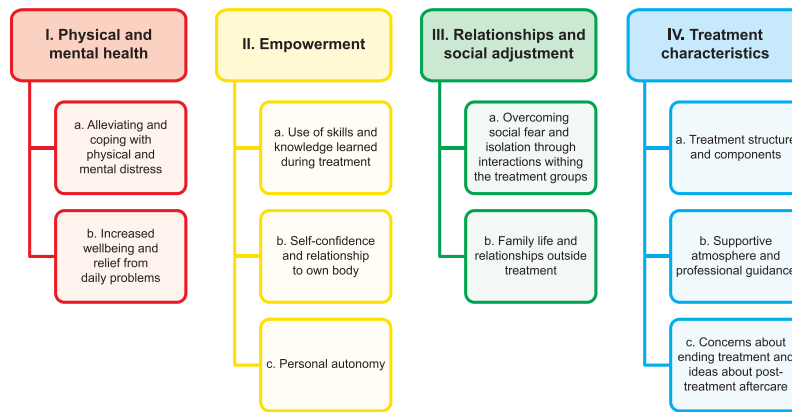
##### (I) Physical and mental health

This category consists of the two sub-categories *Alleviating and coping with physical and mental distress* and *Increased wellbeing and relief from daily problems*. Descriptions included under this category are participants' views of both physical and mental health issues, e.g. described as initial barriers of participation in the PA treatment, the process of overcoming such barriers, and experiences of reduced symptoms and increased wellbeing as an effect of the treatment. Further, participation in the PA treatment was also described as a vital relief from the

**Table 2.** Characteristics of the sample.

	Total sample (n = 33)	Women (n = 10)	Men (n = 23)
Age, mean (range)	45 (22–67)	44 (22–58)	45 (23–67)
Time in PA/exercise treatment at the RCC			
3–6 months	9	4	5
6–12 months	13	3	10
More than 12 months	11	3	8
Type of PA/exercise treatment at the RCC			
Aerobics and mixed PA group training	19	6	13
Yoga and body awareness training	15	8	7
Warm-water pool training	19	5	14
Ball sport activities	12	1	11
Additional gym training (individual or group)	11	3	8
Individual physiotherapeutic assessment	31	10	21
Other contacts at the RCC			
Psychologist	27	9	18
Medical doctor	12	4	8
Social worker	15	3	12

## Building resilience through relief and recovery



**Figure 1.** Theme, categories, and sub-categories developed through the analysis.

complexity of health problems or otherwise stressful life situations.

### ***(Ia) Alleviating and coping with physical and mental distress***

Participants in all FGDs talked about reduced symptoms of both physical and mental distress, and specifically mentioned decreased depression and mood swings, feeling less irritable or easily startled, less fatigue, decreased sleeping problems, reduced symptoms of pain, headaches and muscular hypertension, and reduced fear or anxiety in relation to pain and other bodily symptoms. Some participants also mentioned a decreased need of medication as a positive result related to the PA treatment. Further, many participants mentioned that they felt more resilient or vigorous, had increased their overall stress tolerance and felt less sensitive to daily life stressors, as a result of both becoming more physically active in general and sometimes connected to more specific components of the treatment.

*“The exercising has helped to reduce a lot of problems for me, and not only physical, but also psychological, the overall health. We all have both psychological and physical problems, and these exercises won’t make all the problems go away, but it makes it easier. And when you feel better, physically, it is also much easier to get over some of the psychological issues.”* (Participant #17; FGD 3, man, 43 years)

Most participants experienced their health problems as initial barriers, however, some participants reported that their health problems motivated them to start the PA treatment, that they felt that they had to do something about their problems. Successfully overcoming initial barriers, as well as starting to notice some positive effects, was also further described as becoming important facilitators to continue in treatment.

*“I was about to leave after 5 minutes the first time, I couldn’t breathe. I thought I was going to die [laugh]. But they [points at group leader and other participants] were there to support me. They talked to me and they explained why I felt this way, so I continued. And I tried more and more, and I became better and better. So that was the most important thing for me, the experience of becoming better, by exercising. That you feel better, both in your body and your mind.”* (Participant #4; FGD 1, man, 37 years)

### ***(Ib) Increased wellbeing and relief from daily problems***

Besides decreased problems and breaking negative health patterns, participants also talked about increased wellbeing and ‘chains of positive reactions’, i.e. improvement in one area leading to improvement in another. Particularly improvements in sleep and relaxation were frequently discussed as important factors of both general wellbeing, functional capacity, and in making other problems feel less troublesome. Other examples of improved wellbeing were described as feeling stronger, happier, having more energy and being able to focus and concentrate. Improved wellbeing was also further elaborated as fundamental for better functioning in school, work, and family life. Though, participants often added that these positive experiences weren’t necessarily seen as any long-term health effects, they still emphasized their importance for a sense of recovery or for bringing hope about the future.

*“Before, there were often periods when it got worse and worse for me. Now, with this exercising, it is getting better and better instead. When I’ve been in the pool, for example, especially those days I feel better. And then I also sleep better, and I get more energy [...]. And to get through school, we also need to exercise, to reduce our memory problems, and to keep us active and concentrated.”* (Participant #24; FGD 5, woman, 44 years)

Furthermore, participation in the PA treatment was often seen as a vital relief or interruption from daily problems, worrying, or otherwise stressful life situations. Some participants explained that this was the only time of the week that they felt normal, were laughing and having fun, having positive interactions with other people, and being reminded of life or interests before trauma and forced migration.

*“The sports make us forget. I think about winning, and I laugh with my friends. It’s the same as when we were young. We are grown up now, and we have all been through hell, but here we found that we can still play and talk, and even laugh, and we actually have a good time when we are here. There is nothing that can make us forget what has happened to us, or make our problems go away, but at least we have this.”* (Participant #20; FGD 4, man, 37 years)

*“The most important thing is that you get out of your normal routines. You forget about everything else, your problems, and you are just there, present, and it becomes like a new day, you start a new day. Sometimes this feeling lasts for just an hour, but it is an hour of your life that counts.”* (Participant #16; FGD 3, man, 46 years)

## **(II) Empowerment**

Experiences of new skills and knowledge, gained from both practical and psychoeducational parts of the treatment, were frequently discussed in all focus groups. Participants had increased their daily life activity and used exercises learned during treatment at home. The increase in activity, body control, and other factors related to the PA treatment had also led to improved self-esteem, self-awareness, and self-confidence. This category also includes positive experiences regarding personal autonomy and voluntary participation in the treatment.

### **(IIa) Use of skills and knowledge learned during treatment**

Theoretical knowledge was often discussed as an important first step in understanding one’s symptoms and reactions, and further, to increase one’s motivation to initiate treatment and to become more physically active in general. Participants also highlighted their new understanding regarding body and mind relationships to have reduced their fear of pain or other stress-related physical reactions, which had previously acted as barriers to almost any bodily movement or exercise. Some participants talked about increased general daily life activity as a positive change, while others gave more specific examples of using new exercises or other self-regulatory techniques as either a routine or when particularly needed. Additionally, participants also talked about increased independence regarding

exercising outside the treatment, such as being able to go to a local gym or participating in other public exercise or PA contexts.

*“Now, when I feel distressed or suffocated, I do my exercises, or I go out and walk. I can’t do anything else, but this helps a little. Before, I couldn’t do anything, and I got afraid, sometimes almost petrified, and it just got worse and worse. I only enjoyed moving when I felt good, but now I also do it when I feel tired or tense, it’s like discharging the negative energy inside of me.”* (Participant #29; FGD 6, woman, 22 years)

### **(IIb) Self-confidence and relationship to own body**

Participants frequently talked about increased self-esteem and self-confidence related to bodily movement and positive body experiences, and further, to have regained a sense of control and trust in one’s own body. This was also expressed as something necessary for continuous self-care and increased daily life functioning. Several participants described how they had previously felt disconnected from their own bodies or having felt almost any bodily sensation as being connected to negative thoughts or emotions, thereby highlighting their experiences or discovery of any positive physical sensations as indication of important progress. Moreover, participants also emphasized the importance of finding motivation and capability to change one’s situation or condition by active methods.

*“I didn’t believe in this at all in the beginning, I didn’t dare, and I thought it was only going to cause more problems. But when I actually tried, I felt that it was the best I could do for myself. I got my body back, and through that, my confidence, and energy, so that I wanted to do things again, to move forward. But it was hard in the beginning, hard to take that first step.”* (Participant #23; FGD 4, man, 50 years)

Self-confidence was also often connected to improved physical condition, mental and physical functioning, learning new exercises or activities, increasing one’s ability to participate, and to improved social interactions. Some participants talked about positive social experiences leading to improved self-confidence, while others expressed experiences of opposite pathways, e.g. improved self-esteem and self-confidence being the basis for increased social interactions. Participants also talked about boosted self-confidence and positive memories by being able to perform activities similar to what they had enjoyed in their past.

*“I have changed through this treatment of exercising. I feel stronger, more confident, and I have even started to like myself again. And because of that, I have also started to enjoy talking to others. Before, because of everything that has happened to me, I didn’t trust in anyone, not even myself. Now it’s different, I see things in a different way, and it’s about trust, both*

*in myself and in others.*" (Participant #31; FGD 6, woman, 32 years)

### **(IIc) Personal autonomy**

Many participants talked about personal autonomy as an additionally important aspect of their PA treatment experiences and often mentioned positive experiences regarding voluntary participation, e.g. being allowed to follow one's own capability even if in a group, and possibilities to try out and choose between different PA treatment alternatives due to personal needs and comfort. Most female participants also highlighted that the PA treatment was something they did for themselves, for their own health and wellbeing, their own time, and by their own choice. This subject was also further debated in comparison to most other parts of their daily lives, such as home- and family responsibilities, or stressful obligations towards the society, school or authorities.

*"A while ago, I didn't have anything that could be called a life, and I even stopped taking the important medicines that I had. I didn't have anything to live for. But now, since I have started here, I've thought, 'No – I have to do something new, I have to learn this, I have to do something for myself'. So this feeling, that I want to, that this is my time, that I want to do something nice for myself, it means a lot to me."* (Participant #33; FGD 6, woman, 29 years)

### **(III) Relationships and social adjustment**

Participants in all focus groups talked about social fear and isolation as one of their major problems, e.g. being afraid or feeling discomfort in social contexts, not being able to trust in other people, feeling isolated from the society, having no or few social relationships, or even feeling left out in one's own family. However, many of these problems were also addressed as being partially overcome through the group treatment and the perceived sense of social support and coherence, and also further resulting in improved relationships with friends and family.

#### **(IIIa) Overcoming social fear and isolation through interactions within the treatment groups**

Participants often talked about social isolation and fear or discomfort of being around other people with similar backgrounds as an initial barrier to start PA treatment. However, most participants also expressed that this concern often turned out to not be as big of a problem as expected, and quite the contrary, the social context around the treatment was often further discussed as becoming one of the most important facilitators to continue. Other positive

experiences were expressed as feeling motivated by other participants, learning from each other, working towards a common goal, feeling normal among people with similar problems, and seeing other participants as role models. Some participants even highlighted their social experiences as the overall most important benefit of their treatment participation, e.g. feeling changed in one's social abilities, being able to trust in others, or to have found new friends and relationships within the treatment groups.

*"First, we didn't even say hi to each other, but through the sports we got to know each other. And after that, there was another feeling between us, and for me [pausing] as if something happened. It was this that kind of opened up everything for me, the doors to the future, so that it even felt possible to continue to live."* (Participant #3; FGD 1, man, 32 years)

*"It is not easy to acclimatise here, to meet a new person once or twice, for me personally, I couldn't do it. But here, in the group, it felt different. We came close to each other, without any pressure, we just exercised together, and the rest just came automatically."* (Participant #26; FGD 5, woman, 56 years)

#### **(IIIb) Family life and relationships outside treatment**

Participants also talked about social adjustment and increased social functioning outside the treatment, and they often referred to positive social experiences through the PA treatment groups as a pathway to increased social engagement in their daily lives. Some participants talked about better functioning and less problems in official contexts (e.g. in contact with authorities, school, internships, and work), while others talked more about improved relationships with friends and family. Some participants further described their treatment participation in terms of a 'social awakening', i.e. finding motivation and energy to change one's situation of social seclusion, or seeing new possibilities of social interactions and relationships both within and outside the treatment groups.

*"For me, being part of these exercise groups has led to both physical and psychological wellbeing, but also a social change. It has made us feel more comfortable, so that it also feels easier to become a part of this new society, and it has opened many doors to good relationships with those around us."* (Participant #8; FGD 2, man, 67 years)

Experiences of increased social functioning and improved relationships outside treatment was also further explained by feeling less sensitive or easily startled, being more tolerant towards daily life stressors, and feeling more relaxed and confident around



people in general. Some participants also shared experiences of their own improvement being noticed by and beneficial to others. Some examples included being seen as a better spouse or parent for being less agitated, having a more positive attitude, or being able to help out and contribute more in the daily family life.

*“When you go to these activities, everything changes. But also after, when you go home, your behavior and your attitude are changed, because you feel good. So even in that area it becomes better. How others look at you, and how you treat others around you, your family. So I am saying that everything becomes different, and for me, this was a necessary change. These activities really help us, a lot, and in many different ways.”* (Participant #11; FGD 2, man, 51 years)

#### **(IV) Treatment characteristics**

This category refers to participants' experiences of the overall treatment structure, including different types of PA and exercise, the physiotherapists' guidance, and the surrounding atmosphere, and was often talked about as the basis of other positive experiences and health benefits. Overall, participants were satisfied with the treatment, however, there were also concerns about the future regarding continuous need of treatment or ideas about post-treatment aftercare.

##### **(IVa) Treatment structure and components**

There were various opinions regarding what parts of the treatment structure and what types of PA and exercise that were most enjoyable or essential for one's health improvement. Some participants expressed a preference for calm or relaxed activities (e.g. body awareness training, yoga, or tension releasing exercises), often motivated by feeling a primary need for bodily rest and relaxation, or because those activities had felt more comfortable to start with, particularly after being inactive for a long time. In contrast, other participants were in favour of more activating alternatives (e.g. dancing, strength training, or ball sport activities), explained by feeling a need to gain more energy or because they had found such activities more engaging or motivating. However, most preferences involved a mixture of both relaxation and activation, and many enjoyed the opportunity to try out different types of PA and exercises. Further, specific types of exercises were also discussed as being particularly helpful for specific types of problems or being more or less easy to use at home.

Another important part of the treatment structure for the participants was the ability to accommodate to one's own capability and development,

and to not feel any pressure or obligations. Participants often highlighted the importance of adjusted activities and exercises, both in terms of the overall structure and methods being well organized and adapted for the group, and also on individual basis, e.g. adjustments of exercises due to physical restraints or other personal needs. Other than that, participants were generally satisfied with sessions at different times of the day, as well as the length of sessions (varying between 1 and 2 hours), although some wished for more sessions per week.

*“The most important thing is that everyone can follow one's own ability, that they adjust the exercise to fit each individual, and that everything is optional. And because of that we are also capable of more. If there had been more pressure, it would be much more difficult for us, both to come here and to feel any joy in exercising.”* (Participant #25; FGD 5, woman, 48 years)

Inclusion of psychoeducational components of the PA and exercise treatment programmes was generally appreciated, related to both increased knowledge and self-awareness, and also seen as an important motivator to start out. However, some participants expressed more ambiguous opinions regarding the value of such theoretical information, particularly if not also being provided with the opportunity to try out and experience the effects oneself. There were also different preferences in regard to having such psychoeducational components as separate sessions or as integrated in practical exercise sessions.

*“Information is important, it makes you want to try, to want to change something. And that is important. But then, you must find the courage, because if you don't come here and try, you'll never understand or experience it for real.”* (Participant #24; FGD 5, woman, 44 years)

Additional facilitating factors regarding the treatment structure were sharing the same language as other participants, having an interpreter in place, and having most forms of activities in groups rather than individually, although participants also expressed appreciation of individual contact with a physiotherapist before being introduced to a group activity. In both FGDs of women, there was also a consensus about many benefits of having separate PA and exercise groups for women and men, often expressed as being able to relax and feeling more comfortable this way.

*“I said no to it completely at first. I didn't want to. But then they asked me again, and when I came here and saw that it was in Arabic, that it was only women, and that everyone was nice, then I wanted to continue. I changed my mind.”* (Participant #31; FGD 6, woman, 32 years)

Additionally, many participants compared their experiences from PA treatment with other types of

treatment, and psychotherapy in particular. The combination was often appraised as beneficial and participants shared many examples of both motivational aspects and health benefits from one kind of treatment being further improved by the other. However, participants also talked about increased distress or other difficulties associated with psychotherapy, and comparatively saw the PA treatment as easier or more comfortable to start with.

#### **(IVb) Supportive atmosphere and professional guidance**

Participants often referred to a positive atmosphere related to the PA and exercise groups as an important facilitator to both start and continue in the treatment. Some participants highlighted the social context and the support from other group participants, while others talked more about the overall atmosphere connected to the treatment as a place, e.g. feeling safe at the location, trusting the clinical experience and knowledge, and feeling respected and truly cared for by all personnel.

*“Your treatment and attitude toward us is the most important, the personnel, that you are nice and smile. Things like that have a big impact. And that it is well prepared. That we feel that you understand us and always have good intentions toward us. So all that makes us feel happier and motivated, that it feels meaningful, and that we want to come back again.”*  
(Participant #12; FGD 3, man, 63 years)

The importance of the physiotherapist was also further discussed as a highly determinant factor to start and continue in the PA treatment. Important characteristics included the physiotherapist being perceptive and supportive, motivating, giving personal advice and adjusting the exercises, having knowledge about individual problems, being professional and trustworthy, and sometimes just being there to comfort or to handle any sudden reactions that could occur while exercising. Some participants also accentuated that the positive behavioural change regarding PA and exercise, despite discomfort or other setbacks, would not have been possible without the regular support and guidance from the physiotherapist.

*“After all we have been through, prison, executions, abuse, torture [...] so if you want to build and start something new, you must begin through the body. To move. To get energy. Fundamental energy and to find some sort of joy to go on. We know this, but still we can't. The effect of the old problems makes us lose motivation, unfortunately. It's like a nightmare that follows you every day. So that's why we need you. It's necessary, your support, your knowledge, someone who guides us, who encourages us, to just feel a glimpse of hope again.”* (Participant #19; FGD 4, man, 38 years)

#### **(IVc) Concerns about ending treatment and ideas about post-treatment aftercare**

When asked about the future and the potential use of new skills and knowledge and thoughts about continuing PA and exercise, most participants instead expressed concerns about being cut off from treatment too early. Many considered themselves to need more time in treatment before feeling confident to continue on their own, without the support from a physiotherapist or other group participants. Further elaboration of these worries presented concerns about losing one's improvements in both mental and physical health, as well as the social context connected to the treatment groups.

*“For me, I am so afraid that this will end. I don't even want to think about it. I am afraid that this opportunity, this energy and atmosphere that we experience here, will end. And especially now, when I have finally come this far, when I have finally dared, and when I have finally started to experience good things again.”*  
(Participant #27; FGD 5, woman, 52 years)

Participants also expressed many thoughts and ideas about optional aftercare (i.e. for RCC patients to attend after their regular treatment had ended), and it was often suggested that the Red Cross should start up new groups or activities that could be led by volunteers or even former treatment participants. However, they also wished to continue with the same group, and preferably with at least some connection to their former physiotherapist.

*“So even if you [physiotherapists] can't continue forever or can't be there every time, so that this opportunity, this good, can still continue in some way. And preferably here, within the Red Cross, for example if a volunteer can continue to lead the group [...] and perhaps you can just come to visit us sometimes.”*  
(Participant #11; FGD 2, man, 51 years)

## **4. Discussion**

Despite promising results of PA and exercise-based treatment among people with PTSD (Oppizzi & Umberger, 2018; Rosenbaum et al., 2015), there is a sparsity of empirical investigations targeting patient experiences within this field. This is particularly pronounced concerning the case of trauma-afflicted refugees who receive such treatments. In the present study the aim was to explore the experiences of a group of refugees who had received PA and exercise-based treatment because of exposure to war and torture-related trauma, PTSD, and associated physical and mental health problems. These experiences covered a broad range of preferences, perceptions of outcomes, as well as barriers and facilitators to treatment participation. In addition, our results indicate that the participants experienced a wide range of

beneficial effects that were not limited to mere symptom reduction, but also involved important life domains such as family and social relations, daily life functioning, self-confidence, and empowerment. Acquiring a broader knowledge based on patient perspectives in this population may facilitate patient-centred and context-sensitive care, and thus, contribute to better design and implementation of future strategies for health promotion in this field (Mollica, 2019).

Our results indicate that participants perceived PA and exercise-based treatment to alleviate both mental and physical distress. The perceived reduction of distress concerned both PTSD-related symptoms and distress associated with high levels of stress in general (e.g. anxiety, mood swings, fatigue, pain, headaches, and sleeping problems). Another important finding was the experience of a temporary respite or relief from otherwise debilitating and stressful life situations. The reported experiences of alleviated mental and physical distress is in line with recent work on PA and PTSD (Oppizzi & Umberger, 2018; Rosenbaum et al., 2015), which point to the potential of PA and exercise to reduce the severity of PTSD-related symptomatology as well as preliminary results of beneficial effects regarding a broader range of positive health outcomes. Moreover, the perception of relief or well-being during exercise has also previously been deemed as an important health outcome in itself, contributing to quality of life (Faulkner, Hefferon, & Mutrie, 2015). According to our results, the impact of PA on distress is tangible and appraised as important by the participants. Such a benign appraisal of PA and exercise may also enhance the self-regulatory processes that are essential for adherence to the treatment, as well as motivation and persistence (Leventhal & Ian, 2012), required for increased PA as an important health promotion in the field of refugees' health.

Furthermore, our findings reflect participants' experiences of empowerment through increased knowledge, self-awareness, self-confidence, and feelings of personal autonomy. As a result, participants also felt that they could increase their daily life activity, use new coping strategies, and experience improvements in both cognitive and physical functioning. Participants who were highly affected by social or family obligations and concerns, additionally highlighted that by doing something for one's own health, by choice, and in one's own time, they felt a greater sense of personal value and empowerment. Previous research on health promotion has suggested that health-related empowerment should be considered a central goal rather than a means (Tengland, 2007). In this context, and particularly given the prominence of avoidance, low sense of control, and inactivity associated with PTSD, our results point to a potentially important outcome of PA and exercise among this population.

Another substantial part of the participants' overall experience concerned social relations and interactions. Although the social context of the treatment was sometimes perceived as an initial barrier for participation, it was most frequently experienced as providing social support, and as such, also further perceived as an important beneficial outcome that helped in overcoming social fear and isolation, increased social functioning, and improved relationships both within and outside the treatment group. Social ties have in general been associated with greater mental health and well-being (Kawachi & Berkman, 2001). In the population of refugees who risk upheaved social relationships and networks as a result of forced migration, as well as trauma-related impact on social interactions (e.g. avoidance and negative influence on social network orientation) (Clapp & Gayle Beck, 2009), these results indicate additional promising implications of PA and exercise treatment in group settings.

Treatment characteristics, including preferences of group-based versus individual activities, the overall treatment structure, and specific components, were generally experienced as highly supportive, and were often referred to as the basis of all other perceived benefits. The results also revealed a particular emphasis on the importance of feeling safe and secure at the treatment location, viability of choice between different options of activities or exercises, and having an experienced physiotherapist at place to guide, comfort, motivate, explain and tailor exercises to individual needs. Additionally, our results suggest that inclusion of both psycho-educational components and practical exercises increases the understanding of PA's potential real-life impact as well as mind-body connection and self-awareness, contributing to motivation for participating in the treatment. Previous research regarding PA and other mental health issues points to e.g. lack of motivation, fatigue, low self-efficacy, fear-avoidance beliefs, and low social support, as considerable barriers to engage in PA and exercise (Ussher, Stanbury, Cheeseman, & Faulkner, 2007). Our results indicate similar difficulties and initial barriers, although, experiences of facilitators and perceptions of overcoming such barriers appeared predominant in the participants' narratives of this study. The perceived processes of overcoming such barriers, as well as the low strain level of exercises which gradually increased, may also have led to important aspects of mastery-experiences and improved self-efficacy (Bandura, 1997).

#### **4.1. Strengths and limitations**

To increase trustworthiness in this study, the COREQ guidelines (Tong et al., 2007) as well as the quality criteria for qualitative studies, as outlined by Lincoln and Guba (Lincoln & Guba, 1985), were considered; credibility, dependability, confirmability, and transferability. The analysis process was systematic and

rigorous, the data transcripts were thoroughly analysed by two researchers independently, the process and results were discussed within the research group and with external researchers, and the results have been presented supported with illuminating quotes. The interpreter listened to the recorded FGDs to check the accuracy of the transcripts and to correct misinterpretations. However, the use of an interpreter during the FGDs may have impacted the discussions and may be seen as a limitation (Kapborg & Berterö, 2002).

Further, the majority of the participants were men, which may also be seen as a limitation in regard to transferability of the results. Although the overrepresentation of men among participants mirrors the male/female distribution among patients at the study setting's treatment centre, it imposes limitations regarding the role of sex and gender in this context. Further gender-informed studies, such as studies including only women participants, are desirable in order to address this limitation.

It is also important to have in mind that the participants of this study were all participating in PA and exercise groups, which could explain the general satisfaction with the group treatment. The experiences of patients unwilling to participate in these treatment groups are not reflected in this study. Moreover, several eligible patients declined participation without stating any particular reason, and a possible explanation for this may be that patients who felt that the PA treatment had helped them were more inclined to participate. Another possible limitation is that the FGDs were not based on a single specific intervention. This lack of specificity may limit the evaluations of the results in regard to specific interventions.

A strength of the study is that the first author who was the moderator of all FGDs, is also a physiotherapist at the RCC, implicating several advantages in the proceeding analytical process, facilitating the discussions, and increasing the participants comfort. However, there is in such cases also a risk for responses reflecting social desirability. The fact that both the moderator and observers worked at the RCC may have restricted the willingness to speak freely for some participants. As an attempt to address this possible limitation, the relationships between moderator/observers and participants were clearly acknowledged in all focus group and participant were assured that they could speak openly about both positive and negative experiences and that it would not affect their treatment at the RCC.

As with all qualitative studies, the results are not assumed to be generalizable. However, the authors believe that the results of this study may to some extent be transferable to other groups of trauma-afflicted refugees participating in PA and exercise as part of their treatment, and thus, to provide a better understanding of the experiences and preferences of such health promotive interventions.

## 5. Conclusions

Our results outline a detailed account of trauma-afflicted refugees' experiences of PA and exercise-based treatment, pointing to a multitude of pathways towards building resilience. Aligned with the tenets of patient-centred care, our findings indicate that the focus of research in this field may need to move beyond a narrow symptom focus and include the real-life impact of participating in such treatments. The issues of social ties and relations, empowerment, and the process of recovery; particularly the opportunity of providing relief through interruption of stressful life conditions, appear to be perceived as important aspects connected to the treatment. Further, these issues also appear to be perceived as a highly interactive process, and altogether, as a strong motivational force to increase meaningfulness and a sense of coherence.

In all, our results suggest that systematic examinations of such broader outcomes should be included in future studies, and that design and implementation of future interventions should pay special attention to treatment characteristics that facilitates participation and provides opportunities for continuing PA and exercise past the conclusion of active treatment. In regard to the latter, facilitating community-based initiatives that enable and promote PA and exercise appears to be a feasible option for post-treatment care and health promotion. Civil society initiatives, advocacy, as well as policy considerations for coordinating specialist care with community-based health promotion programmes may be of great value in this regard.

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## ORCID

Henrik Nilsson  <http://orcid.org/0000-0003-4842-1683>

Fredrik Saboonchi  <http://orcid.org/0000-0001-5376-5048>



Catharina Gustavsson  <http://orcid.org/0000-0002-8709-4446>

Andreas Malm  <http://orcid.org/0000-0002-9836-5336>

Maria Gottvall  <http://orcid.org/0000-0002-5837-8263>

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