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# Abstracts


## Systematic Review of the Literature

**Background:** Firefighters are frequently exposed to potentially traumatic incidents at work and are at risk of developing post-traumatic stress disorder (PTSD). However, research has demonstrated high levels of resilience amongst firefighters and their experiences of coping following trauma is under-explored in the literature. The aim of this paper was to undertake a qualitative synthesis of studies exploring firefighters' experiences of coping following traumatic events, particularly in terms of peer support. The literature was viewed through the lens of the Social Identity Model of Traumatic Identity Change (SIMTIC).

**Method:** Twenty-five relevant qualitative research papers were identified through systematic searching of databases (Medline, PsychINFO, Web of Science, Scopus). The papers were synthesised using a meta-ethnography approach.

**Results:** Meta-ethnography generated eleven third-order concepts, grouped into three overarching themes. The first theme outlined firefighters' subjective experiences of traumatic incidents. The second theme outlined firefighters' experiences of peer support, its facilitators, and barriers. The final theme outlined other ways of coping adopted by firefighters following a traumatic event, including further training and the enlisting of social support and formal support services.

**Discussion:** Peer support amongst firefighters facilitates resilience and post-traumatic growth following traumatic incidents. Barriers to seeking this support include masculine ingroup norms and vulnerability associated with sharing emotions with peers. SIMTIC is a helpful model for considering how the firefighter identity can be both a facilitator and barrier to positive coping following a traumatic event.

**Service Improvement Project**

**Background:** Restrictive practices (RP) are used by healthcare professionals on psychiatric inpatient units to protect the safety of patients, staff, and visitors. The factors relating to its use are poorly understood and no study has yet explored the experiences and views of patients. This project aimed to understand young people's experiences of RP, explore patterns around its use, and make recommendations towards reducing RP.

**Procedure:** Interviews were conducted with 10 current or recent inpatients from the Highfield Adolescent Inpatient Unit (HFU). Interviews were analysed with Thematic Analysis. A retrospective audit analysed data collected over a 12-month period to explore the type, frequency, and duration of RP, as well as patterns, such as patient and staff characteristics.

**Main findings**: Three key themes were identified; i) the nature of restrictive practice, ii) the impact of restrictive practice, and iii) a changing relationship to restrictive practice. Audit data were used to contextualise the findings. Recommendations were made to support RP reduction.

**Conclusion:** The findings highlight the impact of RP use on patients, and the need for idiosyncratic formulation of patients' needs within the inpatient environment.

**Theoretically Driven Research Project**

**Background:** Dissociation has been associated with a wide range of mental health needs and can occur following traumatic experiences. This study aimed to develop understanding of dissociation in adolescents by exploring the utility of a model proposed by Schauer & Elbert (2015), the 'Defence Cascade Model', which proposes that dissociation is an adaptive, evolutionary reaction in response to certain types of traumatic events (i.e., those including fixation, proximity, penetration, and contamination).

**Procedure:** 111 young people aged 11-24 under mental health services completed an online questionnaire exploring experiences of trauma, dissociation, post-traumatic stress, depression, and anxiety. The dissociation levels of those whose trauma involved aspects outlined by the Defence Cascade Model were compared to those whose trauma experience did not include these aspects. These scores were compared against a benchmark group of adolescents in services who had not experienced trauma.

**Main findings:** Results were not in line with the assertion of the Defence Cascade Model that traumas with fixation, proximity, penetration, and contamination lead to dissociation, as there were no significant differences in dissociation between the two trauma groups. PTSD explained a large proportion of variance in dissociation. Exploratory analysis found that age at the onset of the trauma, and time since trauma, were significantly associated with dissociation.

**Conclusion:** This suggests that features of trauma events are not predictive of dissociation. Clinical implications are considered, as well as directions for future research.

**Systematic Review of the Literature**

# Firefighters' experience of peer support following traumatic incidents: A qualitative synthesis

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**Proposed Journal:** Clinical Psychology Review
**Rationale:** *Clinical Psychology Review* publishes substantive reviews of topics germane to clinical psychology. Papers cover diverse issues including psychopathology, psychotherapy, behaviour therapy, cognition and cognitive therapies, behavioural medicine, community mental health, assessment, and child development. Papers should be cutting edge and advance the science and/or practice of clinical psychology. Reviews on other topics, such as psychophysiology, learning therapy, experimental psychopathology, and social psychology often appear if they have a clear relationship to research or practice in clinical psychology.

## Abstract

**Background:** Firefighters are frequently exposed to potentially traumatic incidents at work and are at risk of developing post-traumatic stress disorder (PTSD). However, research has demonstrated high levels of resilience amongst firefighters and their experiences of coping following trauma is under-explored in the literature. The aim of this paper was to undertake a qualitative synthesis of studies exploring firefighters' experiences of coping following traumatic events, particularly in terms of peer support. The literature was viewed through the lens of the Social Identity Model of Traumatic Identity Change (SIMTIC).

**Method:** Twenty-five relevant qualitative research papers were identified through systematic searching of databases (Medline, PsychINFO, Web of Science, Scopus). The papers were synthesised using a meta-ethnography approach.

**Results:** Meta-ethnography generated eleven third-order concepts, grouped into three overarching themes. The first theme outlined firefighters' subjective experiences of traumatic incidents. The second theme outlined firefighters' experiences of peer support, its facilitators, and barriers. The final theme outlined other ways of coping adopted by firefighters following a traumatic event, including further training and the enlisting of social support and formal support services.

**Discussion:** Peer support amongst firefighters facilitates resilience and post-traumatic growth following traumatic incidents. Barriers to seeking this support include masculine ingroup norms and vulnerability associated with sharing emotions with peers. SIMTIC is a helpful model for considering how the firefighter identity can be both a facilitator and barrier to positive coping following a traumatic event.


*Keywords:* qualitative synthesis; firefighters; post-traumatic stress disorder; traumatic events; peer support

## Introduction

Given frequent exposure to potentially traumatic incidents, emergency services personnel are at high risk of developing post-traumatic stress disorder (PTSD; Haslam & Mallon, 2003). In a study of 1300 UK firefighters, 18% met the ICD-11 criteria for complex PTSD and 6% for PTSD (Langtry et al., 2021). Cumulative trauma, multiple types of trauma events and a high number of incidents resulting in fatality are likely factors influencing PTSD rates (Harvey et al., 2016; Langtry et al., 2021). However, exposure to traumatic events does not always lead to post-traumatic stress (PTS; Halligan & Yehuda, 2000). Some studies suggest a high degree of resilience among firefighters. Despite more frequent exposure to traumatic events, incidence of PTSD similar to that of the general population has been reported (Meyer et al., 2012). This may be due to factors influencing how firefighters react to and manage the stress of their employment (Shaffer, 2010). The social structure of the fire service provides a set of expectations and norms regarding membership (Jeannette & Scoboria, 2008). Firefighting is often perceived to be a "macho" profession, with a culture of masculine codes and values, identities based on emotional strength, physical and technical competence, and collective understandings of risk and responsibility (Haslam & Mallon, 2003; Thurnell-Read & Parker, 2008). As a lack of emotions can be considered 'masculine', this may be a barrier to seeking support. The way in which an event interacts with this social identity may influence outcomes following trauma.

Social identity theory (SIT) postulates that sense of self is comprised of personal and social identity. A social identity can be defined as "aspects of an individual's self-image that derive from social categories to which he perceives himself as belonging" (Tajfel, Turner, Austin, & Worchel, 1979, p. 40). The Social Identity Model of Identity Change (SIMIC) postulates that life transitions have potential to impact sense of identity

(Jetten, Haslam, Iyer, & Haslam, 2009). The Social Identity Model of Traumatic Identity Change (SIMTIC) applies this to trauma responses, and considers social identities to be antecedents, mediators and outcomes of trauma experiences (Muldoon et al., 2019). It proposes that:

1) Post-traumatic stress (PTS) is amplified when trauma weakens or undermines valued social identities.
2) The development of positive new social identities can be a source of resilience in the face of trauma.
3) Post-traumatic growth (PTG) can occur when existing identities are reinvigorated, or new identities are formed.

SIMTIC suggests that if the trauma compromises sense of belonging to the social group, this increases PTS risk (Muldoon et al., 2019). This can lead to the destruction of a sense of belonging and the social identities that facilitate effective social support (Muldoon et al., 2019). If trauma strengthens sense of belonging to a valued group, this reduces PTS risk. Social bonds are a key resource for people who experience trauma (Charuvastra & Cloitre, 2008; Cobb, 1976; Cohen & Wills, 1985; Dean & Lin, 1977). Peer support from those who have experienced similar difficulties can provide socially supportive interactions (Borkman, 1990; Ørner, 1995; Pistrang, Barker, & Humphreys, 2008). Research has demonstrated that firefighters prefer talking to friends, family, and colleagues, rather than accessing professional support (Jeannette & Scoboria, 2008; Ørner, King, Bretherton, Stolz, & Ormerod, 2003). However, as summarised by Wild and colleagues (2018), there is evidence that formal and structured peer support interventions, such as trauma risk management (Greenberg et al., 2010), critical incident stress debriefing (van Emmerik et al., 2022), and group-based resilience interventions (Wild, 2016) have no

effect on resilience or rates of mental ill health in emergency service personnel. This suggests that there may be a distinction between such interventions and informal support coming from within the peer group. Peer support may facilitate PTG by increasing sense of connection with colleagues and facilitating the development of a more positive social identity (for example, as an experienced firefighter, a helper, and part of the team). In contrast, trauma may change a felt sense of belonging to the firefighter social group and thereby impact self-esteem and self-efficacy.

SIMTIC specifically addresses the social processes involved in traumatic experiences, making it a fitting framework for exploration into firefighters' coping mechanisms. It has the potential to provide a clear theoretical framework for understanding traumatic identity change, and allows for the consideration of PTS and PTG within a single model. The model has demonstrated versatility across populations, including those who have experienced brain injury (Griffin et al., 2022) and sexual violence (Muldoon et al., 2023). Ongoing EU-funded research, the ‘SIMTIC Project’ (European Commission, 2021), indicates its potential for further development. As it has not yet been applied to firefighters, this presents an opportunity to address a research gap and provide additional insights into the nuances of firefighters’ relationship with peer support. By reviewing existing qualitative papers through the lens of SIMTIC, this review aims to contribute to the deeper understanding of traumatic identity change in the context of firefighting.

**This review**

Following the 9/11 terrorist attacks, most studies conducted were quantitative and focussed on physical health outcomes (Smith, Holmes, & Burkle, 2019). Where PTS is explored in firefighters, the research is mostly quantitative in nature and concerned with prevalence and risk factors (Wagner et al., 2021). Quantitative studies exploring peer

support have produced disparate findings. Although firefighters indicate a preference for peer support, there is evidence that it can be a risk factor for PTSD, in that it may inhibit help-seeking behaviours (Henderson, Van Hasselt, LeDuc, & Couwels, 2016). Consideration of the impact of traumatic events on the firefighter social identity, and social resources available following an incident, may explain these disparate findings. A small number of qualitative studies have explored firefighters' experiences of coping with traumatic events, but this has not yet been qualitatively synthesised. Exploration of firefighters' experiences of coping may increase understanding of the role of peer support. This review will consider how firefighters experience peer support following traumatic events, through the lens of SIMTIC.

**Aims**

- To synthesise qualitative research exploring firefighters' experience of peer support following traumatic incidents.
- To explore firefighters' experience of peer support in terms of the value and the role that it plays.

**Questions**

- What are firefighter's experiences of peer support following traumatic incidents?
- What are firefighters' views and understanding of the value and role of peer support in relation to coping with trauma?
- Is SIMTIC a helpful lens through which to understand firefighters' experiences of peer support?

## Method

This review was pre-registered with PROSPERO in November 2021 (registration number CRD42021285906). The review is reported in line with the eMERGe reporting guidance (France et al., 2019).

## Eligibility Criteria

### *Inclusion criteria:*

- Qualitative and mixed-method studies, involving firefighters who are (or were previously) employed on a full time, part time or volunteer basis
- Investigating firefighter's experiences of coping following traumatic incidents that align with the routine day-to-day work experiences of firefighters, PTSD diagnosis or post-traumatic symptoms, or specifically regarding peer support (including peer support interventions)
- Published in English
- Unpublished dissertations if met above criteria
- Studies published worldwide (no limits on date of publication)

### *Exclusion criteria:*

- Quantitative studies
- Studies involving other emergency services where specific qualitative data for firefighters are not reported
- Papers centred on single-incident, high-profile traumatic events (such as 9/11 or the Grenfell Tower fire)

Single-incident, high profile traumas are excluded to maintain a primary focus on everyday coping strategies of firefighters within the context of the routine, work-related traumas. High profile incidents may involve unique circumstances, heightened media attention, and broader public narratives which may introduce biases; potentially misrepresenting firefighters' day-to-day realities and triggering organisational responses uncommon in routine incidents. This supports the generalisability of findings to the broader spectrum of routine incidents, which contribute to cumulative firefighter stress (Harvey et al., 2016).

**Search Strategy**

Search terms were variations of “firefighter” AND “trauma” AND “peer support” (Appendix A). The search was conducted in April 2023, across Ovid (Medline and PsycINFO), Web of Science (Core Collection), and Scopus. Searches were conducted using both MeSH terms for key phrases for each database and keyword searches. Qualitative filters were not applied to capture all possible relevant articles and to allow for the inclusion of mixed method studies. The ProQuest dissertation database and Google Scholar were searched for unpublished literature. Database searches were supplemented by hand searching authors and journals of interest, reference lists and citations of relevant papers.

A total of 365 items were returned in the search, which were first screened for duplicates using the EndNote duplicate detection function. This was then checked manually by the reviewer. 187 duplicates were removed, resulting in 178 individual records. For flow of information, see Appendix B.

**Screening Process**

Titles and abstracts of the 168 papers were screened by the reviewer against the eligibility criteria. Of these, 34% (38 papers) were also screened by a second reviewer (Cohen's kappa = 0.87). All 16 studies identified through hand searching were screened by the second reviewer to reduce bias. Of the 31 potentially eligible papers identified by screening the titles and abstracts, full texts were screened by the reviewer, with 55% (17 papers) screened by a second reviewer (Cohen’s Kappa = 0.82). This resulted in 25 studies; 15 of which were from the hand search (Abelsson, 2018; Brazil, 2019; Conway, 2021; Dangermond, 2022a; Dangermond, 2022d; Ellis, 2019; Firoozi, 2019; Fullerton, 1992; Herbert, 2013; Isaac & Buchanan, 2021; McCarley Blaney, 2021; McMahon, 2010; Partnoff, 2021; Richardson & James, 2017; Smith, 2017).

**Data Extraction**

Data was extracted from each of the 25 studies using a specially developed tool following guidance by Noyes and Lewin (2011). Contextual information was extracted, including country, aims, theoretical background, sampling approach, participant characteristics, total sample size, data collection and analysis approach. Where reported, the traumatic events experienced by participants in each study was also extracted. In line with the information required for meta-ethnography, the following was extracted verbatim:

- First-order constructs: the understanding of participants in each study, in terms of quotations from participants, usually found in the results section.
- Second-order constructs: interpretations of participants understandings made by the original researcher, in terms of the information provided by the researcher, usually found in the results or discussion sections.

Data extraction was completed by the first author, with around 50% (12 studies) also extracted by a second researcher. There were no significant disparities and agreement was quickly reached.

**Quality Appraisal**

Quality was assessed using the CASP appraisal measure for qualitative evidence (Critical Appraisal Skills Programme, 2018; Appendix C). This is a 10-question measure asking about the aims, design, recruitment, data collection, ethical issues, analysis, and statement of findings. Each area is marked as a 'yes' (high quality) or 'no' (low quality). The CASP measure does not offer an overall score and it does not easily classify into high, medium, and low quality. However, given that it is important to consider quality in qualitative synthesis findings, it was necessary to distinguish studies of higher and lower quality. Therefore, each paper was scored out of 10 according to the total number of questions for which 'yes' was obtained to give an indication of the reporting quality, as in

Parslow et al. (2017). Papers were deemed of 'moderate' quality if they had been marked 'yes' on 7 or more criteria, and 'low' quality if they had been marked 'yes' on 6 or fewer. Papers were rated by the reviewer using the quality tool, with 32% (8 papers) also rated by a second reviewer. There was full agreement on quality ratings (Cohen's kappa = 1).

## Analysis

### Meta-Ethnography Process

Prior to analysis, the reviewer considered how their own biases may affect subsequent conclusions. This was captured in a reflexivity statement (Appendix D). Meta-ethnography was used to analyse the data (Noblit, Hare, & Hare, 1988; Appendix E). This method was chosen as the aim was to produce new overarching interpretations and develop conceptual understandings, rather than aggregate findings. The approach undertaken by the first reviewer is summarised in Table 1.

**Table 1**

*Stages of meta-ethnography analysis as described by Noblit & Hare (1988) and description of the process undertaken*

| Meta-Ethnography Stage | Description of stage | Process undertaken by reviewer |
|---|---|---|
| Reading included studies | Familiarising oneself with included papers. | The reviewer began the analysis process by detailed reading of the full text of each paper. |
| Determining how the studies are related | Creating a list of themes or metaphors, juxtaposing them, and determining how they are related | Studies were compared based on the contextual information collected during data extraction. Papers were synthesised together, as there was no clear divergence which suggested that they should be analysed in groups. |

| | | |
|---|---|---|
| Translation | Inferring meaning from the participant's account of the experience. Translations can either be reciprocal (largely agreeing with each other) or refutational (largely disagreeing with each other). Refutational translation helps to explain differences and to explore and explain exceptions, incongruities, and inconsistencies between papers. Studies can refute one another, or concepts and metaphors within studies can refute one another. | Second-order concepts collected during data extraction were imported into an excel sheet alongside corresponding first-order concepts to preserve context. The reviewer then identified themes across studies where authors were using different words to describe the same phenomenon. Papers were arranged alphabetically due to the number of papers and because there was no reason to translate the papers in a particular order (i.e., the first paper was compared to the second paper, which was then compared to the third and so on until all papers had been translated). Any refutational findings were noted alongside the translations on the excel sheet. |
| Synthesising the translations | Reinterpreting translations to develop overarching concepts (third-order constructs). | The reviewer listed translated themes in a table alongside second-order themes and developed overarching concepts that linked these together. |
| Line of argument synthesis | Developing an overarching argument summarising the dataset, providing a new interpretation, or explanation of a phenomenon. | Third-order constructs were explored by the reviewer and used to generate hypotheses which were refined to create a line of argument synthesis. SIMTIC was used as a |

framework to develop this new interpretative context.

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## Findings

### *Study Characteristics*

Studies were predominantly qualitative in nature, with a small number using mixed methods (Haslam & Mallon, 2003; Isaac & Buchanan, 2021; Miller et al, 2021; Smith, 2017). All studies explored firefighters' experiences of coping following traumatic incidents, though some included a more specific focus, such as exploring humour (Dangermond, 2022a), gender and masculinity (Partnoff, 2021; Sinden et al, 2013), or critical incident stress debriefing (CISD; Jahnke, 2014). One study used a social identity framework (Richardson & James, 2017). Publications spanned seven countries, including the US (n=10), Canada (n=4), the Netherlands (n=4), the UK (n=3), Ireland (n=1), Iran (n=1), and Sweden (n=1). Publication dates ranged from 1992 to 2022. Sample sizes ranged from 4 to 343 (Sinden et al, 2013 and Jahnke et al, 2014 respectively). Of the 25 studies, most involved 'career' or 'full-time' firefighters (who work in the fire services as their primary employment), with two sampling 'non-career' or 'volunteer' firefighters (who often have another job and are alerted while at work or during their free time; Brazil, 2019; McCarley Blaney, 2021), and five studies sampling a combination of the two (Dangermond, 2022a-d; Haslam & Mallon, 2003; Jahnke, 2014). In three studies, firefighters offer an emergency medical service alongside their firefighting responsibilities (Abelsson, 2018; Herbert, 2013; Turcotte, 2018). Most studies used a mixed-gender sample (n=15), but most participants were male. Other studies used all-male (n=6) or all-female (n=1) samples. All studies used interviews or focus groups, except for two, which used online surveys (Miller, 2021; Isaac & Buchanan, 2021). Thematic Analysis was the

most common method of analysis used (n=10; Braun & Clarke, 2006).

Some studies formally collected data regarding types of traumatic events experienced by participants. In others, information about the types of events defined as traumatic was reported by participants and so this was extracted from the first-order interpretations. Seventeen different types of events were identified, including; death or serious injury to children (n=12); road traffic collisions (n=6); fatalities (n=7); death of a colleague in line of duty (n=4); medical calls including cardiopulmonary resuscitation (n=4); incidents involving public scrutiny and attention, such as bystanders filming (n=4); maimed bodies (n=4), shootings and stabbings (n=2); incidents involving people they know (n=3); serious danger to self (n=2); suicides (n=2), serious fires and explosions, accidents, natural disasters, rescue situations, military combat, and terrorism (all n=1). Study characteristics are outlined fully in Table 2.

**Table 2**

*Characteristics of studies included in the review*

| Paper | Country | Aims | Sampling Approach | Participants | Data Collection Method | Data Analysis Method |
|---|---|---|---|---|---|---|
| **Abelsson (2018)** | Sweden | To describe firefighters' experiences of FREC (first response emergency care) | NR | **N = 35**<br>**Age** (*years*): 23-64 (M = 41, median = 42)<br>**Gender:** Male (n=34), female (n=1)<br>**Service:** Swedish Fire Brigade<br>**Length of service** (*years*): 1 - 42 (M=18, median=14)<br>**Other characteristics:** All firefighters worked at the same fire station and were part of the 'emergency medical service' | Group interviews (3 groups of 9 participants, 1 group of 8 participants) | Qualitative content analysis (Krippendorff, 2012) |
| **Brazil (2019)** | Canada | To explore if there is a need for formal training and education programs related to critical incident and posttraumatic stress in the volunteer fire service | Purposive sampling (via social media and firefighter specific social networks) | **N=10**<br>**Age:** NR<br>**Gender:** Male (n=9), Female (n=1)<br>**Service:** Fire departments across three counties of Prince Edward Island<br>**Other characteristics:** Volunteer firefighters | Interviews: Face to face (n=8), virtual (n=2) | Thematic Analysis (Braun & Clarke, 2006) |
| **Conway & Waring (2020)** | United Kingdom | To identify what factors facilitate and hinder firefighter resilience and evaluate current measures | NR | **N = 12**<br>**Age:** NR<br>**Gender:** Male (n=10), Female (n=2)<br>**Service:** 2 fire services; one in the Southeast (SE; n=4) and one in the Northwest (NW; n=8) of England<br>**Length of service in SE** (*average years*): 15.25 (SD=6.60)<br>**Length of service in NW** (*average years*): 21.75 (SD= 6.48)<br>**Other characteristics:** Watch manager (n=7), group | Interviews (semi-structured) | Thematic Analysis (Braun & Clarke, 2006) |

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|---|---|---|---|---|---|---|
| | | | | manager (n=2), firefighter (n=1), crew manager (n=1), station manager (1) | | |
| **Dangermond et al. (2022a)** | The Netherlands | To obtain a better understanding of the role and function of humour, including black humour, within the fire service | Theoretical sampling (Patton 2015), a targeted selection based on considerations from the literature (many or few years of service, career, and non-career) | **N = 72**<br>**Age:** NR<br>**Gender:** Male (n=67), female (n=5)<br>**Service:** Dutch Fire Service<br>**Length of service:** NR ('a range')<br>**Other characteristics:** Career and non-career firefighters | Interviews and participant observations | Iterative process (Patton, 2015). Interview data triangulated with observation data |
| **Dangermond et al. (2022b)** | The Netherlands | To understand the role that informal peer support played for firefighters after they experienced a critical incident | Participants selected utilising findings from open interviews and theoretical sampling (e.g., different years of service, both men and women) | **N = 72**<br>**Age** (*average years*): 43<br>**Gender:** Male (n=62), female (n=5)<br>**Service:** Dutch Fire Service<br>**Length of service** (*average years*): 19<br>**Other characteristics:** ***Rank:*** Crew members, crew commanders, shift leaders. Career firefighters (n=40), non-career firefighters (n=20), both career and non-career firefighters (n=12). Participants across 19 professional fire brigades and 18 volunteer fire brigades | Interviews and participant observations | Thematic Analysis (Braun & Clarke, 2006) |
| **Dangermond et al. (2022c)** | The Netherlands | To explore the differences between noncareer firefighters and career firefighters in terms of experiencing critical incidents and the role of informal care support in | Theoretical sampling (Patton 2015), a targeted selection based on considerations from the literature (various years of service, career, and non-career, | **N = 72**<br>**Age** (*average years*): 43<br>**Gender:** Male (n=67), female (n=5)<br>**Service:** Dutch Fire Service<br>**Length of service** (*average years*): 19<br>**Other characteristics:** Both career and non-career firefighters, | Interviews and participant observations | Thematic Analysis (Braun & Clarke, 2006) |

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| | | processing such incidents | both men and women) | across 19 career stations and 18 volunteer stations.<br>***Education:*** all participants have at least followed secondary vocational education<br>***Relationship status:*** Married (n=66), single or divorced (n=6) | | |
| **Dangermond et al. (2022d)** | The Netherlands | To gain in-depth understanding of firefighters' experiences with critical incidents and their impact on both individual firefighters and their crews | NR | **N = 72**<br>People with many years of fire service, career (professional) and noncareer (volunteer) firefighters, men and women, and people with various cultural backgrounds.<br>**Other characteristics:**<br>Career firefighter (n=40)<br>Non-career firefighter (n=20)<br>Both career and noncareer (n=12) | Interviews and participant observations | Iterative process (Patton, 2015). Interview data triangulated with observation data |
| **Ellis (2019)** | United States of America | To explore the relationship between positive and negative coping mechanisms for firefighters in relation to specific traumatic events. To fill gaps in research by capitalizing on the lived experiences of firefighters of different ages, genders, ranks, education levels, and tenures | Purposive sampling (to cover each rank and tenure range) | **N = 9**<br>**Age:** NR<br>**Gender:** Male (n=7), female (n=2)<br>**Service:** Three fire departments in Texas area<br>**Length of service** (*years*): 5-24<br>**Other characteristics:**<br>***Rank:*** Firefighter (n=2), driver-operator (n=2), company officer (n=2), battalion chief (n=3)<br>***Education:*** Some college, no degree (n=3), associate degree (n=6) | Interviews | Interpretative Phenomenological Analysis (IPA) |
| **Firoozi (2019)** | Iran | To study participants' living experiences and identify their | Purposeful sampling (>1 year of experience) | **N = 28**<br>**Age** (*years*): 26-39<br>**Gender:** NR<br>**Service:** Tehran Fire Department | Interviews (semi-structured) | Glaser approach |

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|---|---|---|---|---|---|---|
| | | patterns of stress and growth | | **Length of service** (*years*): 3-12<br>**Other characteristics:**<br>***Relationship status:*** Married (83%), One or two children (78%)<br>***Education:*** bachelors or masters (85%) | | |
| **Fullerton et al. (1992)** | United States of America | To investigate the psychological responses of firefighters to traumatic stress | Volunteer sampling | **Group 1)**<br>**N = NR** ('8x groups of 4-7 firefighters')<br>**Age** (*years*): 23-55 (M=35)<br>**Gender:** NR<br>**Service:** Sioux City, Iowa<br>**Length of service:** NR<br>**Other characteristics:** All high school graduates, majority married<br><br>**Group 2)**<br>**N = 11**<br>**Age** (*years*): 30-55 (M=35)<br>**Gender:** NR<br>**Service:** Special firefighting unit, New York City, NY<br>**Other characteristics:** Majority high school graduates. All worked on day shift<br>***Ethnicity:*** 90% Caucasian<br>***Relationship status:*** 90% married | Group 1) Debriefing group<br>Group 2) Group semi-structured interviews | NR |
| **Haslam & Mallon (2003)** | United Kingdom | To investigate symptoms cited by fire service personnel and assess potential risk factors for mental health and PTSD | The sample was selected to cover the range of positions in the service | **N = 31**<br>**Age** (*average years*) = 41<br>**Gender:** Male (90%), female (10%)<br>**Service:** Midlands Fire and Rescue Service<br>**Other characteristics:** Firefighters from a number of different stations. All were in, or had been in, active service. Full time | Mixed methods - including individual interviews | Sorting verbatim material into emergent themes (Dey, 1993) |

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| | | | | officers (74%), retained (part time; 26%)<br>***Rank:*** Firefighter (n=11), Station officers (n=8), Sub Officers (n=4), Leading Firefighters (n=4), Fire Control Officers (n=2), Area Divisional Officers (n=2) | | |
| **Herbert (2013)** | Ireland | To gain insight into the working world of the Dublin firefighter and provide a deeper understanding of the nature and meaning of their experience particularly in relation to traumatic incidents | NR | **N = 6**<br>**Age:** NR<br>**Gender:** Male (n=5), female n=1)<br>**Service:** Dublin Fire Brigade<br>**Length of service** (*years*): 3-34<br>**Other characteristics:** All operational firefighters ('dual role') | Interviews | Thematic Analysis (Braun & Clarke, 2006) |
| **Isaac & Buchanan (2021)** | Canada | To ask firefighters reasons for seeking peer (including CISD interventions) or professional mental health supports.<br>To identify firefighters' most taxing occupational stressors and the preferences for what type of intervention they prefer to make recommendations at the operational level | Volunteer sampling (recruitment letter sent to 600 members) | **N = 218**<br>**Age** (*years*): 19-59 and over<br>**Gender:** Male (n=208), female (n=9)<br>**Service:** Vancouver Fire and Rescue Service<br>**Length of service** (years): 0-5 (n=51), 5-10 (n=44), 10-20 (n=69), 20+ (n=52)<br>**Other characteristics:**<br>***Rank:*** probationary firefighter (n=8), firefighter/EMT (n=81), firefighter/paramedic (n=22), driver engineer (n=33), lieutenant (n=32), captain (n=37), battalion chief (n=5).<br>***Relationship status:*** Single (n=23), separated (n=5), divorced (n=6), common law (n=31), married (n=144), | Mixed methods – online survey with 1 open ended question | Thematic Analysis (Braun & Clarke, 2006) |

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| | | | | partner (n=7), other (n=1).<br>***Education:*** high school or equivalent (n=11), some post-secondary (n=81), trade/apprentice certification (n=55), bachelor's degree or equivalent (n=52), some graduate school (n=11), graduate school or higher (n=8) | | |
| **Jahnke et al. (2014)** | United States of America | To examine firefighters' perceptions, experiences and beliefs related to CISD/CISM, as well as other mental health interventions and coping strategies | Volunteer sampling via Fire Chief magazine Additional details of recruitment published elsewhere | **N = 343**<br>**Age** (*average years*): 41.8 (SD 10.6)<br>**Gender:** Male (93.2%), female (6.8%)<br>**Service:** National study across multiple fire services<br>**Length of service** *(average years):* Career 15.6 (*SD = 9.3*), volunteer 16 (*SD = 11.6*), combination, 14.3 (*SD = 11.2*)<br>**Other characteristics:** Career (n=295), volunteer (n=48), combination (n=80). | Focus groups and individual interviews | Thematic Analysis (Braun & Clarke, 2006) |
| **Kling et al (2022)** | United States of America | To define and explore organizational- and worker-level factors of firefighter well-being | Volunteer sampling via recruitment flyers and social media outlets specific to career firefighters | **N = 17**<br>**Age** *(average years)*: 38 (SD 9.8)<br>**Gender:** Male (n=15), female (n=2)<br>**Service:** 4 Florida Career Fire Departments<br>**Length of service:** NR<br>**Other characteristics:**<br>***Race/ethnicity:*** White Non-Hispanic (n=8) Hispanic (n=7)<br>***Rank:*** Firefighter/EMT (n=1), firefighter paramedic (n=7), lieutenant (n=3), captain (n=3), chief (n=1). | Focus groups and individual interviews | Factors that contribute to firefighter wellbeing were organised into appropriate themes |

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| | | | | ***Relationship status:*** Married (n=11), divorced (n=1), never married (n=3) ***Education:*** Some college or technical school (n=7), college graduate (n=7), master's degree or higher (n=1) | | |
| **McCarley Blaney et al. (2021)** | Canada | To explore the core concepts of resilience in the volunteer fire and rescue service and the relationships between and among the core concepts | Purposive sampling | **N = 8** **Age** (*average years*): 48 (from early 20s to mid 60s) **Gender:** Male (n=7), female (n=1) **Service:** Anonymous fire and rescue service **Length of service** (*years*): 4-30 (M = 20) **Other characteristics:** All participants in volunteer fire and rescue service and live within the geographic confines of the FRS. Participants represented 25% of the fire and rescue service. ***Relationship status:*** Married or in a committed relationship (n=7), single (n=1). Engaged in full time work outside the volunteer FRS (n=4). Retired from full time work but take on extra tasks at the FRS (n=2). Involved in volunteer work in addition to the FRS (n=8) | Interviews | Comparative methods (Charmaz, 2014) |
| **McMahon (2010)** | United States of America | To examine coping styles and techniques used by these participants with the principles of positive psychology to | Purposive sampling (Informant provided list of firefighters who were then screened based on | **N = 5** **Age** (*years*): 35-45 **Gender:** Male (100%) **Service:** Fire Department in North Central Texas | Interviews (semi-structured) | Phenomenological data analysis (Creswell, 2007), based on works of Polkinghorn (1991) and Moustakas (1994). |

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| | | help explain present coping and help to devise culturally appropriate and relevant interventions in time of complicated distress<br>To increase knowledge of firefighter culture as this may assist counselling psychologists to appreciate how this population deals with psychological difficulties, appreciate what firefighters value in mental health providers, and reduce barriers to treatment | inclusion criteria) | **Length of service:** 10+ years (n=5)<br>**Other characteristics:**<br>***Rank:*** Line of duty firefighters (n=4), battalion chief and chaplain (n=1)<br>***Ethnicity:*** European-American (n=4), Hispanic (n=1)<br>***Relationship status:*** Married (n=3), divorced/separated (n=2) | | |
| **Miller et al. (2021)** | United States of America | To identify factors impacting burnout, resilience, and quality of life in rural career firefighters | Chief distributed a flyer including a link to the survey. | **N = 16**<br>**Age** (*years*): 21-49 years old (M = 36.7)<br>**Gender:** Male (100%)<br>**Service:** Small, rural fire department in the Midwest<br>**Length of service:** >1 year - 21 years (M = 8.7 years)<br>**Other characteristics:** Career firefighters<br>***Ethnicity:*** Caucasian (n=16)<br>***Relationship status:*** Married (n=15), unmarried (n=1)<br>***Highest educational attainment***: high school/general educational development (GED) equivalency test to a bachelor's degree. Associate/technical degree (43%)<br>***Sexual orientation:*** Heterosexual (n=16)<br>***Generation:*** Gen Z (6%), millennial | Mixed methods - Online survey with open ended questions | Thematic Analysis (Braun & Clarke 2006) |

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| | | | | (63%), Gen Xers (31%) | | |
| **Partnoff (2021)** | United States of America | To explore how socioemotional challenges are addressed by male firefighters in the context of firehouse culture and the overarching culture of masculinity (keeping in mind the intersection of repeated exposure to trauma)<br>To examine how mental health concerns are managed and what barriers exist regarding seeking mental health services<br>To gain insight into the social context of the firehouse and to what extent men develop and utilize protective factors such as social supports and coping strategies | Purposeful sampling (diverse participants, multiple firehouses)<br>Snowball sampling (participants referred other individuals who meet the criteria) | **N = 10**<br>**Age** (years): 28-57 (M= 47, mode = 50)<br>**Gender:** (% male): 100<br>**Service:** Firefighters from Central Valley, California - rural and inner city<br>**Length of service** (*years*): 9-38 (M = 25, mode = 25)<br>**Other characteristics:** Participants with family members in the service either historically or presently (n=4)<br>***Rank:*** firefighter (n=2), engineer (n=3), captain (n=2), battalion chief (n=3)<br>***Ethnicity:*** white or Caucasian (n=8), Hispanic or Latino (n=2)<br>***Education:*** some college (n=6), completion of a college degree (n=3), declined to answer (n=1). | Interviews (virtual) | Data was coded into common themes |
| **Regehr (2009)** | Canada | To better understand the nature of social supports for firefighters | Purposive sampling (wide range of experiences in terms of length of time with the services and types of work experiences encountered) | **N = 10**<br>**Age:** NR<br>**Gender:** NR<br>**Service:** Firefighters in the Greater Toronto Area<br>**Length of service:** NR<br>**Other characteristics:** Participants represented a wide range of experiences in terms of length of time with the services and types of work experiences encountered | Interview (Long interview method; McCracken, 1988) | NR |

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| **Richardson & James (2017)** | United States of America | To uncover occupational identity tensions present within and sustained by the occupational discourse of firefighters as they discussed how they encountered and coped with traumatic experiences | NR | **N = 27**<br>**Age** (*years*): 22-55 (M = 40.6)<br>**Gender**: Male (100%)<br>**Service:** Youngstown Fire Department, rural Texas<br>**Length of service** (*average years*): 15.7<br>**Other characteristics:**<br>***Ethnicity:*** Caucasian (n=27)<br>***Rank (individual interviews):*** Fire chief (n=1), assistant chief (n=2), lieutenant or battalion chief (n=7), firefighter (n=13)<br>***Rank (group interview):*** battalion chief (n=1), crew member (n=3) | Individual interviews (n=23). One group interview (n=4). | Constant comparative approach: we did not identify a particular theoretical framework to guide the analysis (Glaser & Strauss, 1967) |
| **Sinden et al. (2013)** | Canada | To understand how a male-dominant, physically demanding work environment impacts female work health and job satisfaction through exploration of the positive and negative experiences of female firefighters | Recruitment letter forwarded to all 5 female firefighters employed in this municipality (response rate = 80%) | **N = 4**<br>**Age** (*average years*) = 35.2<br>**Gender:** Female (100%)<br>**Service:** Firefighting service in Southwestern Ontario<br>**Length of Service** (*average years*): = 3.7<br>**Other characteristics:** All participants had a college education | Interviews (semi-structured, telephone) | Thematic Analysis (Braun & Clarke 2006) |
| **Smith (2017)** | United States of America | To increase understanding of the experiences of firefighters after work-related crisis, including the coping strategies and social support that they utilise | Snowball sampling (firefighters recruited by fellow firefighters). Participants were then selected (to ensure diversity across demographic domains and traumatic events). | **N = 10**<br>**Age** (*years*): 20-66<br>**Gender**: Male (100%)<br>**Service:** NR<br>**Length of service** (*years*): 4-49 (M = 18.3)<br>**Other characteristics:** All were active career firefighters, exposed to at least one work-related crisis within the past year, with at least a moderate level | Mixed methods - Interviews (semi-structured) | Phenomenological data analysis (Creswell, 2007) |

| | | | | | | |
|---|---|---|---|---|---|---|
| | | | (19 firefighters were contacted, 10 agreed to participate) | of distress and moderate level of surprise as measured by questionnaire.<br>***Ethnicity:*** Hispanic (n=1, 10%), Caucasian (n=9, 90%)<br>***Rank:*** Firefighter/paramedic (n=3, 30%), lieutenant (n=2, 20%), fire service counselling unit team leader (n=1, 10%), Captain (n=1, 10%)<br>***Relationship status:*** Single and not dating (n=1, 10%), single and in a relationship (n=1, 10%), single and dating (n=3, 30%), married (n=5, 50%).<br>***Number of calls per shift (average):*** 1-14<br>***Hours worked per shift (average):*** 8-24 hours (Mode = 24) | | |
| **Turcotte (2018)** | United States of America | To understand how firefighters and emergency medical personnel cope with repeated exposure to trauma | Volunteer sampling (55 invited to participate, 6 accepted) | **N = 6**<br>**Age:** 18-24 (n=2, 33%), 25-35(n=2, 33%), 35-44 (n=2, 33%), 45-53(n=1, 17%)<br>**Gender:** Male (n=5), female (n=1)<br>**Service:** Firehouse in the Hudson River valley of New York State<br>**Length of service:** NR<br>**Other characteristics:**<br>***Ethnicity:*** Caucasian (n=5, 83%), Latino (n=1, 17%) | Interviews (semi-structured) | Phenomenological data analysis (Creswell, 2007) |
| **Young et al. (2014)** | United Kingdom | To identify the occupational stressors faced by firefighters<br>To establish the specific coping styles that are utilised to | Volunteer sampling | **N = 22**<br>**Age:** NR<br>**Gender** (% male): 100<br>**Service:** Fire and rescue service in the Northeast of England<br>**Length of service** (*years*): 3-31 (mean = 11.9) | Focus groups (3) | Organisation and interpretation of unstructured data (Cote, Salmena, Baria, and Russel, 1993). |

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| | successfully manage these demands | **Other characteristics:** All full-time personnel ***Rank:*** Firefighter (n=16), crew manager (n=6) |

### *Quality*

In terms of overall quality, 21 papers were rated as 'moderate' quality, and 4 papers were rated as 'low' quality. Table 3 outlines the number of papers meeting each of the CASP criteria.

**Table 3**

*Number of papers meeting each criterion of the CASP quality measure*

| | Criteria | Papers meeting criteria | |
|---|---|---|---|
| | | **n** | **%** |
| 1 | Clear Aims | 25 | 100 |
| 2 | Methodology | 25 | 100 |
| 3 | Research design | 24 | 96 |
| 4 | Recruitment | 15 | 60 |
| 5 | Data collection | 25 | 100 |
| 6 | Relationship / bias | 13 | 52 |
| 7 | Ethical issues | 16 | 64 |
| 8 | Data analysis | 20 | 80 |
| 9 | Findings | 25 | 100 |
| 10 | Valuable research | 25 | 100 |

All papers sufficiently reported their aims, methodology and method of data collection. Reporting of findings was good, although level of detail varied, particularly of first-order concepts. All papers were deemed to make valuable contributions to research with potential implications for healthcare or fire and rescue services. An area of low quality was recruitment, with many papers reporting limited details of how participants were recruited (Herbert, 2013; Conway, 2021; Fullerton, 1992; Haslam & Mallon, 2013; Richardson & James, 2017, Turcotte, 2017; Abelsson, 2018; Dangermond, 2022d). Papers would have benefitted from including details of potential participants contacted, compared to the final sample (as in Isaac & Buchanan, 2021 and Sinden, 2013; Turcotte, 2018). Fourty-eight percent (12 papers) did not consider researcher bias or include a reflexivity statement, and 36% (9 papers) did not consider potential ethical issues and how they were dealt with. For full quality ratings for each paper, see Appendix F. Papers were not excluded from analysis following quality rating, as low scores may be due to a lack of reporting of relevant information. Excluding these papers would lead to the loss of information. Instead, the impact of lower quality studies was considered in the synthesis (Long, French, & Brooks, 2020).

**Meta-ethnographic synthesis**

Studies were overall largely reciprocal and congruent. However, there were some opposing concepts between studies. Opposing concepts involved the helpfulness or unhelpfulness of different types of support, including peer support. There were no differences in translated concepts in studies of low quality compared to those with high quality.

Eleven third-order concepts emerged, grouped into three superordinate concepts: firefighters' experiences of traumatic incidents, peer support, and other forms of coping. Third-order concepts and their original authors' themes are presented in Appendix G.

Below, third-order constructs are presented in bold, with participant quotations from primary studies illustrated in italics.

### *1) Firefighters' subjective experiences of traumatic incidents*

Papers explored firefighter's experiences of traumatic incidents at work. Papers (4 moderate-quality, 1 low-quality) described incidents as more traumatising for firefighters when involving **fear of the unknown** and a lack of preparedness. This was particularly the case for volunteer firefighters, due to the sudden nature of going to potentially traumatic calls (Dangermond, 2022c).

> *"The thought of when I'm going there and I'm not quite sure of what I'm getting into and I think that, you know, maybe my assumptions going into it are going to be wrong and I'll have to adapt to something that I'm not comfortable with or won't be able to, that's stressful." – Brazil (2019)*

Papers (8 moderate quality, 2 low quality) described how incidents where firefighters **identified with the victim** are experienced as traumatic**.** Incidents where firefighters identified with the victims or the dead triggered an emotional response, either due to them being a similar age to themselves or reminding them of their own family members or children:

> *"I picked up the body of a two-year-old girl. I had a two-year-old at the time. A feeling ran through my body. What bothered me most is that it was a mirror image of my family." – Fullerton (1992)*

Four moderate quality papers described that cumulative exposure to traumatic events led to **emotional detachment** or desensitisation. Firefighters described how the job "*hardened"* them (Isaac & Buchanan, 2021; Herbert 2013), that they "*became colder*" (Herbert, 2013). Mental avoidance, including 'thought blocking' and distraction, may be a coping mechanism to alleviate the cognitive demands of challenging situations (Young, 2014). Partnoff (2021) described that, whilst this has a short-term benefit as a coping

strategy during incidents, the long-term effects of avoidance contribute to post-traumatic symptoms:

> *"I was of...the old-school EMS/Fire mindset of, hey, if something bothers you, just bury it back, keep on going. Because when you're on scene, when...you have a job to do and you're not idle, things don't bother you because you're focused on what you got to do as part of the team to get that thing done right now. It's not until afterwards things maybe bother you, but the thought was always, hey, bury your head, and keep on going, and [it'll] get better." – Partnoff (2021)*

Papers (6 moderate quality, 2 low quality) also described how **incidents that challenge the firefighter identity as a 'helper'** can be experienced as more traumatic for firefighters. Turcotte (2017) describes how participants viewed themselves as 'helpers' rather than 'heroes' - *"I went into firefighting because I want to help people, keep my community safe, and give back to my neighbours".* Pressure from the media and public adds to this sense of identity due to high expectations (Herbert, 2013). When a firefighter can 'help', this results in joy and satisfaction (Abelsson, 2018). However, when futile or helpless situations occur, this can lead to helplessness and guilt (Richardson & James, 2017; Fullerton, 1992).

> *"If you don't take it personal I'm worried about you. I mean that's, that's part of the culture ... of being a fireman. You're there to help. And if what you're doing is not helping, it affects you." – Richardson & James (2017)*

Although none of the papers exclusively recruited participants who met the diagnostic threshold for PTSD, 8 papers (7 moderate quality, 1 low quality) identified a range of **post-traumatic stress** symptoms experienced by firefighters following traumatic incidents. These included insomnia, mental avoidance, flashbacks (Haslam & Mallon, 2003), fear (Firoozi, 2019) and memories triggered by reminders of the traumatic event (Brazil, 2019):

> *"The smell of burning pork was very much like human beings burning ... sometimes I flashback to that event of that motor cyclist burning" – Haslam & Mallon (2003)*

### *2) Peer support*

When describing how firefighters cope following traumatic experiences**,** 17 papers (14 moderate quality, 3 low quality), **explored informal peer support**. Being able to talk to colleagues after an incident was described mostly as a helpful and beneficial process (Herbert, 2013). Colleagues would engage in a 'debriefing' process after incidents (Jahnke, 2014). This was described as taking place informally and in a range of shared spaces, including on the way back to the fire station (Jahnke, 2014), over a hot drink (McMahon, 2010; Dangermond 2022b), in the showers (Dangermond, 2022b), and around the dinner table (Conway, 2021):

> *"9 out of 10 times it's going to be someone on your shift that you talk to...I never bring anything up. I just go over there, and take a cup of coffee to them and just sit there and drink a cup of coffee and say, "Man, this coffee is great, isn't it?"...And if they want to talk about the incident, they may say, "Did you see that girl?" "I know man, it tripped me out. I've never seen anything like that." It lets them know somebody is paying attention to their pain. If I could do just that and make them know that I'm there in case they want to talk." – McMahon (2010)*

Studies explored the circumstances in which peer support is experienced as useful. It was described how informal peer support can allow firefighters to get a 'complete picture' of the incident (Dangermond, 2022b; Abelsson, 2018). Drawing upon shared experiences of the traumatic event fosters resilience and closer relationships amongst colleagues (Conway, 2021). This is made possible due to other firefighters understanding each other better than outsiders (Dangermond, 2022b). Papers commonly referred to how other firefighters "*get it*" (Isaac & Buchanan 2021), as "*they've been there*" (Smith, 2017). Janke (2014) describes that these informal discussions take place soon after an incident, and mean that formal support, such as CISD, is not needed. They describe facilitating peer support by training firefighters as 'peer counsellors' to provide intervention and change social norms around help-seeking. This was preferred by participants as an alternative to

formal support.

Regehr (2009), reported mixed findings as to whether participants found informal peer support helpful or not. However, this paper did not specify their method of analysis and so it is unclear whether this ambiguity was a theme amongst their participants. Barriers to peer support included difficulty in opening up to peers. Technology has also had an impact, with some recruits preferring to spend time on electronic devices rather than in collective conversations (Herbert, 2013). Peer support is further enhanced by a sense of 'brotherhood' (Partnoff, 2021), 'teamwork' (Herbert, 2013), 'camaraderie', and 'belonging' (Brazil, 2019). This facilitates a culture of shared responsibility and shared coping. It was noted how firefighters not only experience the incidents together (McMahon, 2010), they also spend long periods of time together on shift (Dangermond, 2022c). Firefighters of higher ranks propagate this sense of teamwork through mentorship and modelling (Partnoff, 2021). Fullerton (1992), argues that team identity has benefit during incidents, as working with colleagues facilitates staying on task and remembering training.

> *"When push comes to shove you know that everyone has your back...when you go to a call everybody's there to help everybody else out... it's just, it's camaraderie like you know, like if I, if my car broke down here right now there's probably 15 people that if I phoned they'd be in here in two seconds to come and get me" - Brazil (2019)*

**Humour** was its own theme in five moderate quality papers (Turcotte, 2017; Dangermond 2022a; Partnoff 2021) but featured to some extent in many papers in the review. General use of humour ("*having a laugh*"; Firoozi, 2019) was described as a process that helps to facilitate relationships and group cohesion. More specifically, dark humour is described as a coping strategy and a form of peer support (Conway, 2021). Dark humour is a 'cultural norm' within the fire service (Partnoff, 2021) and is not intended for outsiders (Dangermond, 2022a) as to outsiders it can sound 'disrespectful, and

'insensitive' (Turcotte, 2017). It can occur both on the way to an incident and soon after and is a process through which thoughts and feelings can be brought 'out into the open' as soon as possible (Young, 2014). Three papers explored how dark humour can be thought of as a socially acceptable way of indirectly allowing emotions to be discussed in the 'macho' environment (Dangermond, 2022a; Partnoff, 2021); allowing firefighters to express and normalise feelings that would be inappropriate elsewhere (Young, 2014).

> *"If you add a humorous touch to it, you do manage to say things that could not to be discussed otherwise. You go through some very intense moments" – Dangermond (2022a)*

**Help seeking as showing vulnerability** was described as a significant barrier to peer support by nine moderate quality papers. Richardson & James (2017) described that, although peer support is a helpful process, there is a tension in expressing difficulties directly. Help-seeking was negatively influenced by the 'macho' image of the fire service (Brazil, 2019; Sinden, 2013; Ellis, 2019). As communicating distress or seeking support is stigmatised and associated with vulnerability, this is a barrier to seeking support from colleagues (Dangermond, 2022b; Isaac & Buchanan, 2021; Smith, 2017). Two papers described how this culture may be changing, as help seeking becomes more normalised between firefighters. McCarley Blaney (2021) described change in fire service culture, from "*brotherhood*" to "*family*". Richardson & James (2017) explored how 'traditional' culture is being replaced by an 'emerging' culture, whereby seeking support is less stigmatised:

> *"It's a men's club. Traditionally, you know, just tough firefighters. I think that that attitude 'I'm tough and can handle it' or whatever. Been pretty much the attitude or the ... culture I guess you might call it. You internalize it and deal with it as best you can."..."So, we're just now ... trying to address (dealing with trauma) as a department, and ... to build resiliency and to ... recognize some of the signs and symptoms of that." - Richardson & James (2017)*

### *3) Other forms of coping*

Other forms of coping explored in the review included training, formal support, and social support. Ten papers (9 moderate quality, 1 low quality) described how, following a traumatic incident, firefighters emphasised the **importance of training and exposure.** Engaging in formal training, learning of new skills, and physical training is a form of "exposure" to difficult incidents, and a way to demonstrate 'strength, endurance, and preparedness' (Herbert, 2013; Fullerton, 1992; Haslam & Mallon, 2013; Partnoff, 2021). In contrast, a lack of training reduces confidence in being able to respond to different types of situations (Miller, 2021). Firefighters can use training following traumatic incidents as a way of learning from the event and re-instating their sense of being able to help (Herbert, 2013; Fullerton 1992; Smith 2016).

> *"I just wanted the next one to be so much better and make so much more impact even if it was just a simple call. Just try to make an impact on their life. Just go back and study overdoses. Go back and study the reason behind suicide... So, I mean, every time after the call I wanted to go back and just get better." – Smith (2017)*

Similarly, six papers explored how exposure to actual traumatic incidents can have 'positive impacts', particularly when an event is appraised as leading to increased experience (Smith, 2016; Dangermond, 2022c; Herbert, 2013; Young, 2014), as an opportunity to learn from incidents, and to become better equipped - "*formulating how to do it better next time round*" (Herbert, 2013,), and *"taking the job more seriously"* (Smith, 2017). Exposure can therefore build resilience (McCarley Blaney, 2021). However, cumulative exposure can have negative outcomes if the incidents occur soon after one another within a certain time frame:

> *"Because you're a professional and have already gone through so much, you experience the work differently. I notice that you stay calmer or relativize things*

> *more easily, you are less rattled in the engine, because you have more baggage" Dangermond (2022c)*

Another form of coping explored in 12 papers (10 moderate quality, 2 low quality) was **formal support**, including 'defusion' (debriefing taking place soon after an incident to identify any emotional distress), advisory services (Conway, 2021), formal debriefs (Turcotte, 2017; Brazil, 2019), CISD (McMahon, 2021), immediate supervisors and management (Regehr, 2009), and counselling (Conway, 2021; Turcotte, 2017; Smith, 2017; Herbert, 2013). A small number of papers described positive perceptions of formal support services. Participants in McMahon (2021) found critical incident stress management (CISM) to be helpful due to increased trust and being able to share in a "*safe place*" where it is "*not going to be spread*". Turcotte (2017) described formal support as helpful for providing problem solving and stress management skills, and that this had been most helpful with therapists that were once part of, or had family connections to, the fire and rescue service. Participants in Smith (2017) described positive benefits from therapy, but negative views on CISD.

> *"I went and had that session with the counsellor and that was a good talk. We talked about the call and everything... If you get it out, it's not built up and pent up inside of you." – Smith (2017)*

Other papers described mostly negative experiences of formal support. Some participants in Smith (2017), had found therapy helpful, but others described a lack of trust in professionals. One critique, in line with the theme of the helpfulness of support from the ingroup, was that external supporters would need to know the job for support to be accepted (Isaac & Buchanan, 2021; Turcotte, 2017).

> *"Here was the difference for me, he was at one time part of the emergency services community, so he knew and understood exactly what was going on when I described the situation to him" – Turcotte (2017)*

Trust was described as an important factor in accepting external support, as participants in Conway (2021) described not feeling comfortable in contacting human

resources (HR) to request support due to historical strike action. Therefore, those external to the ingroup either could not be trusted or could not understand the stressors faced by firefighters. It was generally agreed that firefighters would therefore prefer informal peer rather than formal support from external sources (Brazil, 2019):

> *"Talking in our own group with everybody that was involved…helps a lot of guys I think, um, they don't know that they're venting I guess, when they're doing it in front of the same guys that were there. I think that's where a lot of people would rather deal with it instead of having somebody come in and talk to them one on one or anything like that." – Brazil (2019)*

**Social support** from friends and family was another form of coping described in 10 papers (8 moderate quality, 2 low quality). Smith (2017) described the helpfulness of a range of external supports such as their friends and children. Participants in Haslam & Mallon (2003), mostly preferred to seek support from family, either because they could "*talk to them about anything*", or because they did not want colleagues to know how they felt. Other papers reported mixed experiences. Participants in Richardson & James (2017) would occasionally seek support from family but mostly tried not to do so. In Turcotte (2017), support from family was sometimes possible but other times not. Reasons for this including not wanting to place stress onto family (Richardson & James, 2017). Informal coping strategies, such as humour, are also not possible with external social supports, as it is not deemed acceptable to outsiders (Dangermond, 2022a). Additionally, shift work can be a barrier to social support from family (Regehr, 2009).

*"Somebody who's just a civilian who doesn't understand the dynamics of the firehouse… they think they can understand it just by someone describing it to them but unless you've lived it you really don't know" – Turcotte (2017)*

**Line of Argument Synthesis**

This line of argument synthesis will explore these concepts through the lens of SIMTIC. Studies identified a range of factors relating to firefighter social identity, including masculinity, role as a 'helper', team working and camaraderie.

Firefighters reported a range of post-traumatic stress symptoms following traumatic incidents, including hyperarousal, re-experiencing symptoms, and emotional detachment. Post-traumatic stress may be influenced by the extent to which the incident challenges or undermines valued identities. Incidents which firefighters experienced as most traumatic (i.e., unpreparedness, futility, inability to 'help') may challenge or undermine the positive sense of identity associated with being a firefighter. Incidents involving children may relate to firefighters' own personal, family identities, triggering emotional responses that are in contrast with their professional identity as a 'helper'.

Peer support is described as a helpful form of coping after post-traumatic events, as firefighters can access timely support from the ingroup, with whom they have a shared identity and sense of collective experience. In seeking peer support, firefighters can understand their unique experiences. Humour is a medium through which emotions can be explored in a way that is acceptable within group norms, as well as strengthening group cohesion, reinvigorating the firefighter identity as part of the ingroup. However, the firefighter identity can also be a barrier to accessing peer support, as expressing emotions and help seeking is seen as a form of vulnerability and not in line with group norms. It may be that this prevents post-traumatic growth, as it reduces opportunity to create positive new identities or invigorate old ones.

Other forms of coping were explored such as social support and formal support, which were perceived as mixed in terms of their helpfulness. Papers identified a preference for ingroup support and highlighted that this provided a shared sense of coping which is not possible in external settings. In contrast, training and exposure to incidents fostered post-traumatic growth by increasing firefighters' sense of 'helpfulness' and readiness following exposure to incidents. Thus, PTG and resilience can be fostered by accessing support systems which reinvigorate the firefighter identity.

## Discussion

This review synthesised 25 qualitative studies of firefighters' experiences of coping following traumatic incidents. Firefighters experienced a range of traumatic incidents such as fatalities, including child fatalities, road traffic collisions, and suicides. PTS was described by firefighters, and included difficulties such as flashbacks, insomnia, and re-experiencing symptoms. This is an expected finding given that a survey study of 212 fire and rescue service staff found that 85% firefighters experienced stress, low mood and poor mental health whilst in post (Mind, 2016). To explore firefighter's experience of coping following traumatic incidents, particularly in relation to peer support, qualitative findings were analysed through the lens of the SIMTIC model.

From a social identity perspective, the firefighter 'crew' or 'fire service' can be considered as a social group. Firefighters' sense of ingroup identity was notable across the papers. Training, daily rituals, and wearing of uniforms develops emergency workers' schemata that they are apart from the general population, and exist to protect others (Ørner, 1995). In line with SIT, firefighters described a sense of belonging to the fire service or their group of colleagues. This strong sense of ingroup membership ('brotherhood') and supportive atmosphere ('camaraderie') is protective as it facilitates shared coping and peer support. Individual firefighters within this group behave in ways consistent with the group's norms. Firefighter identity in the reviewed papers was associated with being a 'helper', someone who can solve problems, and with masculine norms such as emotion suppression.

SIMTIC describes how PTS risk following a traumatic incident can be related to the degree to which the incident itself targets the person's group membership, undermines a shared social identity or compromises sense of belonging to the social group (Muldoon et al., 2019). In line with SIMTIC, the group experience of a traumatic event appeared to

have the potential to strengthen sense of belonging to this group. Firefighters and other emergency personnel may be unique in their experiencing of traumatic incidents together as a group and working together in close proximity, which allows for prompt informal support, immediately after an incident and in shared spaces. As in SIMTIC, this process of strengthening belonging to the group appeared to be related to increased sense of learning and moving forwards from the event. Strong identification with firefighters as a group may also have benefits for the peer support environment, as firefighters have a unique understanding of each other's experiences. It was found that social identities within the fire service provide psychological resources, positively affecting outcomes following traumatic events. In line with the peer support literature (Borkman, 1990; Ørner, 1995; Pistrang et al., 2008), peer support from within the fire service can be a socially supportive interaction, as firefighters possess experiential knowledge, which external forms of support may lack. PTG can therefore be thought of as being facilitated by peer support by reinvigorating the positive identities associated with being a firefighter.

However, the social identity of being a firefighter and its associated group norms may also limit individual firefighters' ability to seek peer support. Firefighters associated the sharing of thoughts and feelings with a sense of vulnerability. Post-traumatic stress may lead to negative outcomes if the individual or other ingroup members no longer view them as prototypical of the group. Vulnerability is viewed as being in contrast with a social identity of being a 'helper' rather than helped and being emotionally unaffected by incidents.

Masculinity and its associated norms were also an important identity factor, as most participants in this review were males. When seeking support is in contrast with ingroup norms, firefighters are less likely to find peer support helpful, and stigma can influence help-seeking behaviour (Auth et al., 2022). Despite this, it emerged that dark

humour is a supportive peer interaction that allows firefighters to seek support from colleagues indirectly in a way that conforms with group norms. Research has not yet explored in detail the thoughts and feelings associated with this barrier to peer support. It may be that shame, related to a fear of ostracization from the social group, is an emotion underlying this. In line with the finding that higher levels of group identification with the fire service is associated with maladaptive coping strategies and PTSD (Robison, Greco, Huntsman, & Li, 2021), it may be that identification with the firefighter social identity increases risk of post-traumatic stress as it reduces opportunity to access peer support. It may also be that a firefighters' sense of relating to the ingroup affects perceived ability or need to access support from other sources. The extent to which firefighters could access social support external to the fire service and formal support services was mixed. Social identity theory posits that, once groups form, intergroup bonds are strengthened by comparison with outgroups from which they differ (Tajfel et al., 1979). A common concept in the studies was that firefighter colleagues 'could understand' the distress following an incident, whereas outsiders could not. Studies which found social and formal support to be helpful emphasised the importance of the person understanding the role of the firefighter.

In terms of the development of new social identities, training and learning was a problem-focussed way in which firefighters coped with traumatic events. Although PTS symptoms, such as emotional detachment, were associated with increased exposure to traumatic incidents in the papers, increased exposure was also viewed as an opportunity for development and growth. It could be postulated that this facilitates PTG through the development of a new, positive identity, from a 'rookie' firefighter, to a 'firefighter with experience'.

To conclude, this review highlights potential benefits of informal peer support for resilience and PTG in firefighters. SIMTIC is overall a useful model from which to

consider how the helpfulness of peer support depends upon differing interpretations of the firefighter identity, as well as the extent to which positive identities are formed or reinvigorated. The synthesis suggests that changes in felt sense of belonging to the firefighter social group can both increase a firefighters' ability to access peer support, whilst also having potential to be a significant barrier. This may explain disparate findings in the firefighter literature as to the helpfulness of support from peers.

**Limitations**

This meta-ethnography is affected by the primary studies. Studies were generally of moderate quality and areas of low quality were mostly around the limited reporting of ethical considerations and potential researcher bias. Papers were included from grey literature which is limited as it is not peer reviewed. Studies varied based on country and date of publication but there was good consistency within results. There was no obvious impact of country or date of publication. The synthesis is limited by the information made available by reporting; although first-order interpretations were extracted, these are selected by original authors and therefore cannot be fully separated from the author's interpretation. Also, the reviewer made the decision to translate studies in alphabetical order rather than based on an 'index' study, which may have impacted the analysis. Although the process of meta ethnography translation outlined by Noblit & Hare allows scope for variation in approaches across published literature (Atkins et al., 2008). As the analysis process was completed by a single reviewer it is prone to bias. To minimise bias, second reviewers were used at the screening, data extraction and quality appraisal stages, and a reflexivity statement was written prior to starting analysis.

Limitations of the SIMTIC model should also be discussed. It provides valuable insights into the social processes involved in traumatic experiences. It has potential for generalisability, and has been applied to the experiences of brain injury (Griffin et al.,

2022) and sexual violence (Muldoon et al., 2023). However, it remains untested across a range of diverse groups and cultural contexts. This review is one attempt to look at SIMTIC in firefighters. The EU-funded SIMTIC Project will further examine the model (European Commission, 2021). It is recommended that future research explore the model's applicability to other populations, including emergency services, to enhance empirical evidence and validation. Another limitation is that SIMTIC focusses on social processes, whereas identity change following trauma may involve a variety of factors and individual differences, such as personal values and coping styles. The integration of SIMTIC alongside other models, such as the cognitive behavioural model of PTSD (Ehlers & Clark, 2000), could allow for the consideration of specific identity-related meanings or appraisals which contribute to identity change. Currently, SIMTIC lacks specificity as to the nuances that underlie the peer support process. Understanding the specific mechanisms may allow for consideration of how peer support can be facilitated or accelerated.

**Recommendations**

Informal peer support from within the ingroup is important to firefighters and fosters identification, connection and belonging. External support services and formal peer support interventions may therefore not be able to meet this need. Fire services should therefore consider the benefit of facilitating informal support between firefighters rather than from external agencies or structured interventions. Further exploration is needed as to the factors which make informal, peer-based support particularly effective, and which of these vital aspects may be missing in structured peer support interventions. Given the finding that firefighter identity can be both a barrier and a facilitator of peer support, further research could explore factors which lead to negative aspects of the firefighter identity, and ways in which more positive identities can be fostered. It is recommended that qualitative research in this area consider researcher bias, as firefighters' reporting of

their experiences may be impacted by the nature of the researcher as an ingroup or outgroup member. It was noted in the literature how fire service culture is evolving and changing (Richardson & James), particularly in terms of the increasing recruitment of women (Brazil, 2019). Social identities can change and evolve over time, and so future research could explore areas of change and stagnation as increasing numbers of women enter the profession.

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**Service Improvement Project**

# Restrictive Practice on an Adolescent Inpatient Unit

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**Proposed journal:** Journal of Adolescence

**Rationale:** The *Journal of Adolescence* is an international, broad based, cross-disciplinary journal that addresses issues of professional and academic importance concerning development between puberty and the attainment of adult status within society. Our focus is specifically on adolescent *development:* change over time or negotiating age specific issues and life transitions. The aim of the journal is to encourage research and foster good practice through publishing empirical studies, integrative reviews and theoretical and methodological advances. The *Journal of Adolescence* is essential reading for adolescent researchers, social workers, psychiatrists, psychologists, and youth workers in practice, and for university and college faculty in the fields of psychology, sociology, education, criminal justice, and social work.

## Abstract

**Background:** Restrictive practices (RP) are used by healthcare professionals on psychiatric inpatient units to protect the safety of patients, staff, and visitors. The factors relating to its use are poorly understood and no study has yet explored the experiences and views of patients. This project aimed to understand young people's experiences of RP, explore patterns around its use, and make recommendations towards reducing RP.

**Procedure:** Interviews were conducted with 10 current or recent inpatients from the Highfield Adolescent Inpatient Unit (HFU). Interviews were analysed with Thematic Analysis. A retrospective audit analysed data collected over a 12-month period to explore the type, frequency, and duration of RP, as well as patterns, such as patient and staff characteristics.

**Main findings**: Three key themes were identified; i) the nature of restrictive practice, ii) the impact of restrictive practice, and iii) a changing relationship to restrictive practice. Audit data were used to contextualise the findings. Recommendations were made to support RP reduction.

**Conclusion:** The findings highlight the impact of RP use on patients, and the need for idiosyncratic formulation of patients' needs within the inpatient environment.


*Keywords***:** adolescents; inpatient; restrictive practice; restraint; seclusion; segregation

## Introduction

Inpatient mental health settings contend with unique challenges in relation to patient safety (Thibaut et al., 2019). Adolescents admitted to child and adolescent mental health service (CAMHS) hospitals often have acute, severe, and/or enduring mental health needs and can exhibit behaviours that pose a risk of violence towards themselves, fellow patients, staff, and property (Panagiotou, Mafreda, Moustikiadis, & Prezerakos, 2019). Risks faced by inpatients as a direct result of psychological distress include deliberate self-injury, suicide attempts, malnutrition, and health complications due to medication side effects, repetitive behaviours, and self-neglect. Suicides occur among CAMHS inpatients and appear to be rising; there were 19 deaths in the three years preceding March 2022 (Eley, 2022; NHS England, 2022; NHS Orkney, 2022) compared to ten in the four years preceding 2017 (Frith, 2017b), although methodological differences complicate direct comparison. Inquests have highlighted preventable patient deaths by suicide (Niche Health and Social Care Consulting, 2013). It is a requirement of services to prevent and manage this risk (World Health Organisation, 2014).

Restrictive practice (RP) refers to deliberate acts to restrict a patient's movement, liberty, or freedom, to take immediate control of a dangerous situation when there is possibility of harm if no action is taken (Department of Health, 2015). RP used in the inpatient environment include manual restraint (a hands-on method used by trained healthcare professionals to safely immobilise the service user), chemical restraint (rapid tranquilisation using intra-muscular injection), nasogastric tube (NGT) feeding (enteral nutrition for medically unstable patients with poor oral or nutritional intake), seclusion (the supervised containment of a patient, away from other patients), and long-term segregation (LTS; preventing a patient from mixing with other patients on the unit on a sustained basis; Department of Health, 2014).

Whilst RP is intended to maintain patients' safety, there are associated risks. RP can cause iatrogenic harm when over-used (Department of Health, 2014, 2015). It can be distressing for staff and patients involved (Power, Baker, & Jackson, 2020; Wilson, Rouse, Rae, & Kar Ray, 2017). Adolescents have reported shame, discomfort and anger around the use of RP (Vishnivetsky et al., 2013). Staff members consider risk assessment, availability of staff, and availability of alternatives (Butterworth, Wood, & Rowe, 2022) in decision making and, when used, RP negatively impacts staff wellbeing and is associated with staff distress (Mooney & Kanyeredzi, 2021). Environmental and staffing factors may be related to the use of restraint (Nielson, Bray, Carter, & Kiernan, 2020), which should be viewed within the context of increasing issues around staffing (Tulloch et al., 2008) and young people being admitted far away from home, or treated on adult wards (Frith, 2017a, 2017b). Given the risks of RP, the Mental Health Act Code of Practice (2015) calls for reduction in its use. It is recommended that child and adolescent services seek to reduce risk and improve foresight by exploring why patients behave in ways that pose a risk and the factors that underlie the behaviour and its triggers (Department of Education & Department of Health and Social Care, 2019).

Thus, inpatient units face a central dilemma; how to prevent harm from suicide and self-injury, while reducing the use of RP. Yet, there is an absence of evidence-based alternatives to RP (Baker et al., 2022; Griffiths, Dawber, McDougall, Midgley, & Baker, 2022) and little is known about young people's first-hand experience of it (Nielson et al., 2020).

**Service Context**

The Highfield Adolescent Unit (HFU) is a National Health Service (NHS) mental health provision providing a Tier 4 specialist inpatient service for children and adolescents aged 11-18 with acute mental health needs. HFU has 18 beds with male and female

corridors, and a two-bed high-dependency unit (HDU) for patients who need a low stimulus environment or LTS. HFU has a multi-disciplinary team trained in a range of therapeutic interventions, as recommended by the Quality Network for Inpatient CAMHS (Royal College of Psychiatrists, 2021). In addition, to maintain the safety of patients, staff, and visitors, RP such as restraint, seclusion, and LTS are used. Patients are observed every 30 minutes as standard ('level one'), every 15 minutes ('level two'), on a 1:1 basis (within eyesight 'level three' or within reach 'level four'), or on a 2:1 basis. NGT feeding may require restraint of the patient.

Anecdotally, clinicians reported noticing that a high number of incidents involve a small number of patients. RP reduction initiatives, such as positive engagement workers, person-centred care planning ("all about me" plans), training around sensory strategies, and activities during unstructured times, have been implemented on the unit. The service wanted to understand better the use of RP on the unit; its frequency, duration, for whom it is used, and how young people experience it, with the aim of addressing the central dilemma in inpatient care; preventing harm in the least restrictive manner.

**Project Scoping**

The service identified a need to explore current practices and levels of restriction, enhance staff awareness of patients' experiences of RP, and highlight any areas of good practice and required improvements. The questions to be addressed were as follows:

- What are patients' experiences of RP?
- When and how often is RP used on the unit? For whom is RP used the most?
- Based on this feedback, what changes and improvements in practice can the service make?

# Methods

## Phase 1: Qualitative Phase

The aim of this phase was to explore any patterns or themes in the patients' experiences of RP, as well as any implications of its use. Approval was obtained from the Oxford Health Foundation Trust Clinical Audit team (see Appendix H). The inclusion criteria were young people who; i) were current or former inpatients at HFU (no timescale was specified); ii) experienced any type of RP whilst on HFU; and iii) were under inpatient or community child and adolescent mental health services (CAMHS) at the time. Participants were purposively sampled. Patients were identified by HFU staff and then approached either by a healthcare assistant (for current inpatients) or their community CAMHS care-coordinator (for former inpatients). Eligible patients were provided with information sheets and invited to take part. Participants aged 16 or over provided informed consent and those under 16 provided assent, once parent/guardian/carer consent had been obtained.

The priority for recruitment was on producing rich and in-depth insights rather than aiming for a large sample size. In line with a constructivist and reflexive epistemological stance, recruitment concluded when the depth of insight, or 'information power' (Malterud et al., 2016), within interview data was deemed sufficient, at which point ten participants had completed interviews. This is in line with similar qualitative studies exploring RP in the NHS (Wilson et al., 2017). Participant demographics at the time of the interview are outlined in Table 1.

**Table 1**

*Demographic characteristics of interview participants*

| Demographic Characteristic | | |
|---|---|---|
| Age (*years*) | | |
| Range | 14.6 – 17.8 | |
| Mean | 16.2 | |
| | n | % |
| Admission status | | |
| Current inpatient | 5 | 50.0 |
| Former inpatient | 5 | 50.0 |
| Gender | | |
| Male | 1 | 10.0 |
| Female | 8 | 80.0 |
| Non-binary | 1 | 10.0 |
| Ethnicity | | |
| White British | 10 | 100.0 |
| Types of restrictive practice experienced | | |
| Restraint | 8 | 80.0 |
| Seclusion | 4 | 40.0 |
| Long-Term Segregation | 4 | 40.0 |
| NGT Feeding | 5 | 50.0 |

9 out of 10 participants were on the unit at some point during the audit period, with one admission taking place the year prior. Participants had experienced restraint (80%),

rapid tranquilisation (50%), NG tube feeding (50%), LTS (40%) and seclusion (30%). One participant had experienced level three observations only (see Table 2).

**Table 2**

*Clinical profile of RP experienced by each interview participant*

| Participant | Types of restrictive practice experienced |
|---|---|
| 1 | Restraint |
| | Seclusion |
| | LTS |
| | Rapid tranquilisation |
| | NG tube feeding |
| 2 | NG tube feeding |
| 3 | Restraint |
| | NG tube feeding |
| 4 | Level three observations |
| 5 | Restraint |
| | Rapid tranquilisation |
| 6 | Restraint |
| 7 | Restraint |
| | LTS |
| | Rapid tranquilisation |
| 8 | Restraint |
| | Seclusion |
| | LTS |
| | Rapid tranquilisation |
| | NG tube feeding |
| 9 | Restraint |
| | Seclusion |
| | Rapid tranquilisation |
| | NG tube feeding |
| 10 | Restraint |
| | Seclusion |
| | LTS |

A focus group of seven inpatients at another adolescent unit supported with the development of the information sheets and interview schedule (see Appendix I). Individual semi-structured interviews were then held from April to May 2022 and took place on the unit (for current inpatients), virtually, or at a community base (for former inpatients). Patients were asked questions about their general views of RP as it is used on HFU, as well as their own experiences of RP (see Appendix J). Questions about specific experiences were asked at the clinical judgement of the trainee, to minimise potential for distress. Interviews were 50 minutes long on average and were recorded with an encrypted Trust-issued electronic device. Recordings were hand-transcribed, and all participant identifiable information was redacted before analysis. Data were organised using qualitative data analysis software, NVivo 12 (Lumivero, 2017), and analysed using Reflexive Thematic Analysis (See Appendix K; Braun & Clarke, 2021; Braun et al., 2023). An external supervisor reviewed two interview transcripts chosen at random and the thematic framework developed by the trainee. Any differences in interpretation were discussed and a final framework was agreed upon.

**Phase 2: Audit Phase**

The aim of this phase was to further understand the type, frequency, and duration of restriction, as well as any patterns occurring in the data. Variables of interest were decided upon by the researcher and HFU clinical psychologist, based upon clinical experience and available literature. These were then refined following consultation with stakeholders such as the HFU leadership team, the Trust's Positive Engagement and Caring Environments (PEACE) lead, and the Trust's audit team, who advised on the availability of data on Trust systems.

A retrospective audit was completed using data collected routinely by the unit over a 12-month period *(1st April 2021 – 31st March 2022)*. Data was collected by the trainee using:

- Trust Online Business Intelligence (TOBI) – interactive data-visualisation software, aggregating Trust-wide data from incident reporting systems. TOBI applications used included '*Quality and Safety'* (to obtain data on RP incidence, type, frequency, and IDs of patients involved) and '*Patient Activity and Demand'* (to explore admissions data and patterns in staffing levels).
- Carenotes - web-based electronic patient record software, used to access patient diagnosis from the 'patient information' tab.

## Findings

### Context

During the 12-month audit period, patients with eating disorders accounted for the most bed days (47.9%), followed by anxiety disorders (13.8%), autism (12.5%), mood disorders (10.7%), personality disorders (3.5%), ADHD (3.5%), and psychosis (1.5%). In the 12-month audit period, 786 incidents were logged in total (see Table 3).

**Table 3**

*All incidents recorded during the audit period, per incident type (including incidents where RP was not used)*

| Incident type | Number of incidents | % of total incidents |
|---|---|---|
| Self-harm | 549 | 69.85 |
| Violence (physical, non-physical and property damage) | 78 | 9.92 |
| Health (incl. patient refusing treatment and NGT feed) | 130 | 16.54 |
| Absent without Leave (incl. attempts to abscond) | 29 | 3.69 |
| Total | 786 | 100 |

**Restrictive practice audit**

A total of 453 incidents of RP were recorded, most of which involved restraint (see Table 4).

**Table 4**

*Number of incidents of restrictive practice, per type*

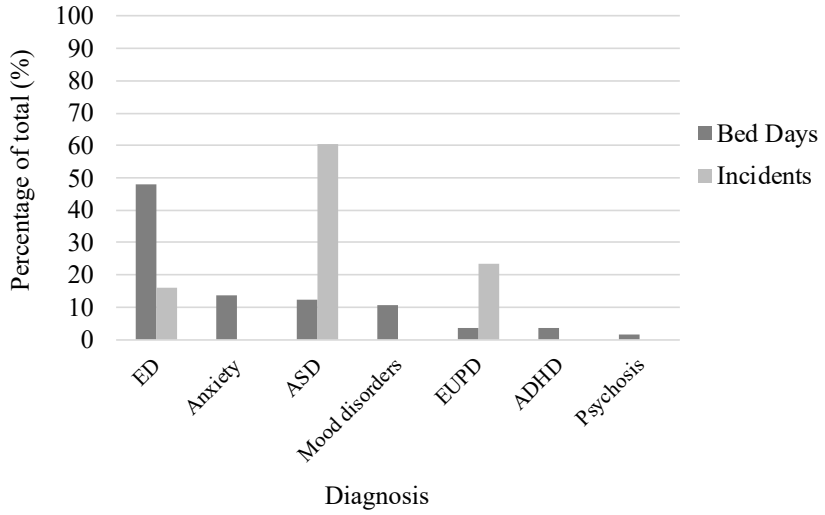
| Restrictive practice incident type | Number of incidents | % of RP incidents |
|---|---|---|
| Physical Restraint | 356 | 78.6 |
| Seclusion | 23 | 5.1 |
| Long Term Segregation | 8 | 1.8 |
| Rapid Tranquilisation | 66 | 14.6 |
| Total | 453 | 100 |

Overall RP incidents peaked in March 2022 due to an increase in incidents of restraint and RT. Incidents of LTS remained stable throughout the year, and seclusion incidents remained stable except for a peak in May 2021 (Appendix L, Figure A). Staff factors were explored using visual inspection of any patterns in the data (vacancy rate, agency spend, staff turnover) but no observable fluctuations were noted that coincided with peaks in RP (Appendix L, Figure B). There was no observable difference in incidence between weekdays and weekends for any of the RP types (Appendix L, Figures C-E).

Most incidents of RP involved patients for whom their primary diagnosis was listed on Carenotes as Autism Spectrum Disorder (ASD; 60.39%). This is of note, given the context that patients with ASD accounted for 12.5% of bed days (see Figure 1).

**Figure 1**

*Percentage of total available bed days and total restrictive practice incidents, per diagnosis*

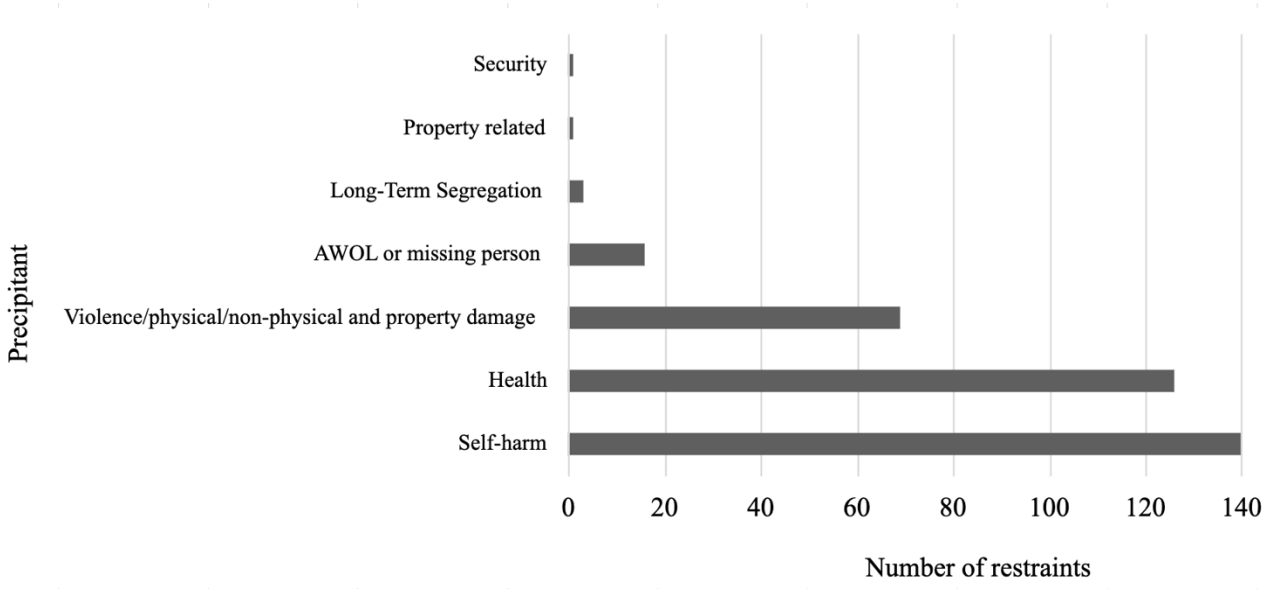


***Restraint***

A total of 356 incidents of physical restraint occurred; most commonly precipitated by self-harm (39.33%; see Figure 2). Restraints mostly occurred during unstructured time (outside of 9:00-17:00). Two peaks in restraint were noted between the hours of 10:00-10:59 and 19:00-19:59, which is attributable to planned NG feeding during periods of higher staffing.

**Figure 2**

*Number of restraints per precipitant*

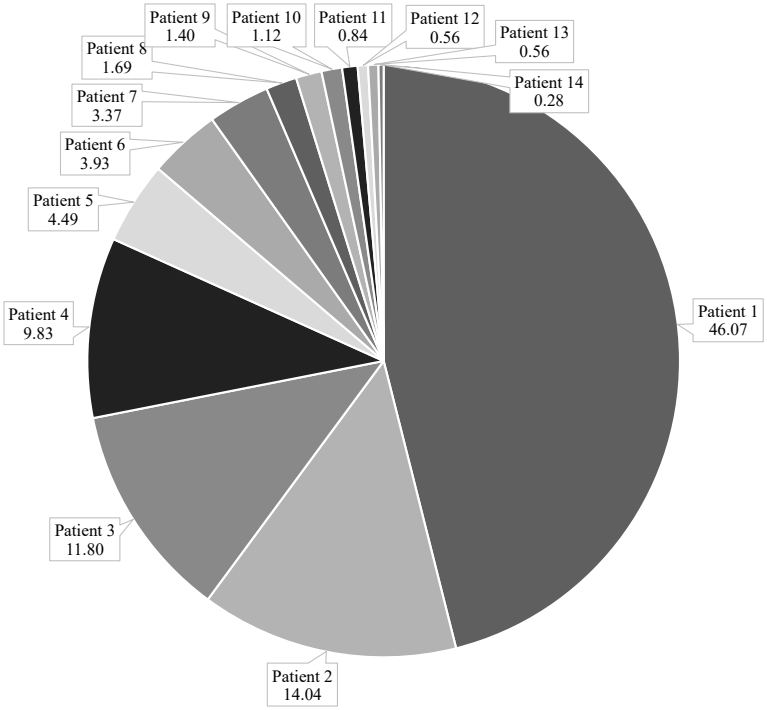



Further visual inspection of the peak in restraint in March 2022 identified a notable increase in self-harm as a precipitator, relative to other precipitants (see Appendix L, Figure F). This specifically related to ligatures as opposed to other types of self-harm (including striking self or surroundings, resisting NGT feed and cutting).

Fourteen patients were involved in restraint incidents, with a small number of patients involved in a large proportion of restraints (see Figure 3).

**Figure 3**

*Proportion (%) of restraint incidents accounted for by each of the fourteen patients involved in restraint*

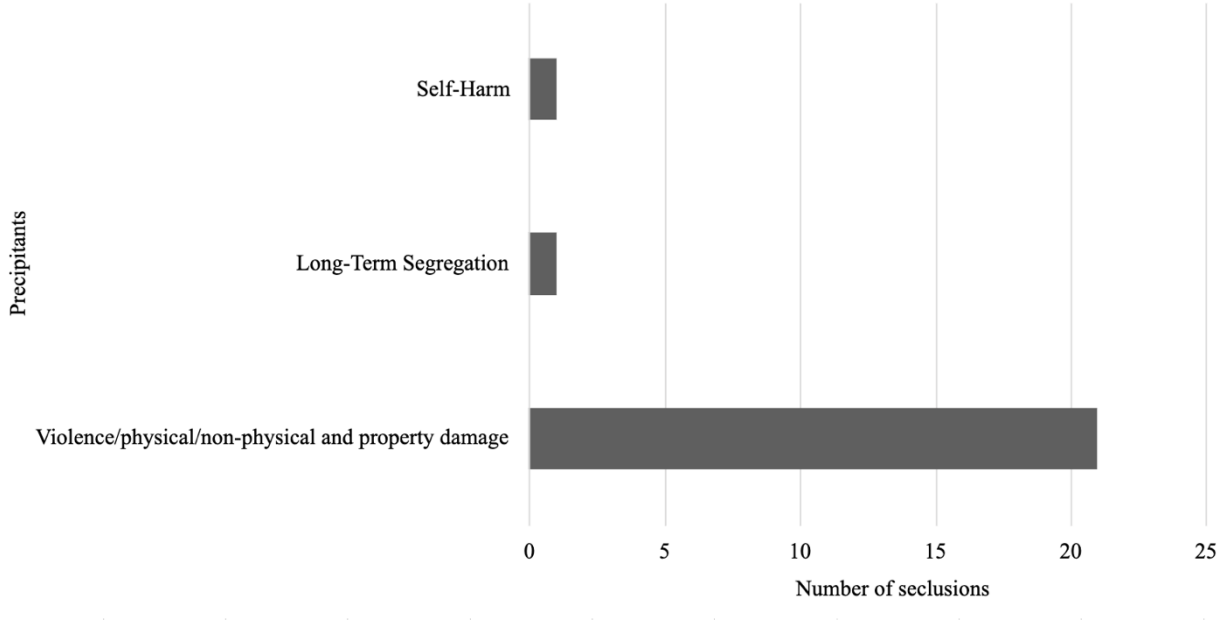


### *Seclusion and Long-Term Segregation (LTS)*

Of the 23 incidents of seclusion, most were precipitated by violence and property damage (91.30%; see Figure 4).

**Figure 4**

*Number of seclusions per precipitant.*




The duration of seclusion ranged between 2 hours and 25 hours (M = 12, Mdn = 14). Incidents of seclusion remained stable, except for a notable peak in May 2021 due to the admission of a patient involved in frequent incidents. Seclusions mostly occurred in unstructured times (65.22% occurred outside of 9:00-17:00). Three patients were involved in the 23 incidents of seclusion, with one of these patients accounting for 88% of all seclusions.

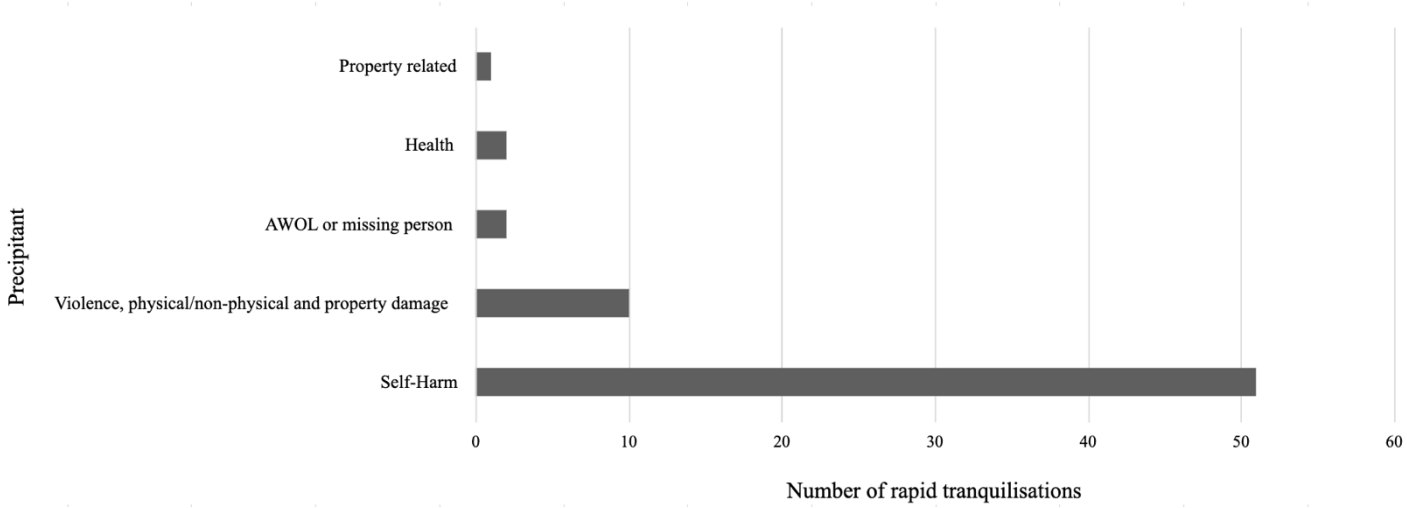
In terms of LTS, eight patients had an admission to the HDU during this period, with stays ranging from four to 145 days (M = 46). Visual inspection identified that admissions to the HDU remained relatively stable throughout the year (Appendix L, Figure G).

### *Rapid Tranquilisation (RT)*

There were 66 incidents of RT, involving six patients. Most incidents were precipitated by self-harm (see Figure 5).

**Figure 5**

*Number of incidents of rapid tranquilisation, per precipitant.*



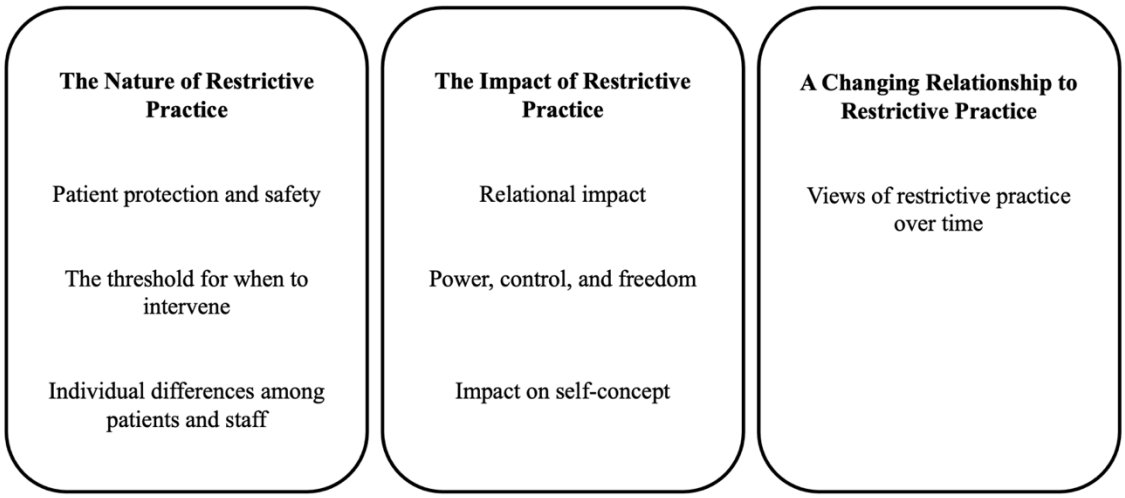

Visual inspection identified a peak in the number of RTs in February 2022 (16 incidents) and March 2022 (33 incidents; see Appendix L, Figure H). Most incidents of RT (50 incidents, 75.76%) occurred during unstructured time (outside of 9:00-17:00).

## Qualitative Findings

Qualitative analysis identified seven lower order themes, grouped into three higher order themes (see Figure 6). Participant quotations illustrating the themes identified are outlined below.

**Figure 6**

*Qualitative themes*




### *The Nature of Restrictive Practice*

Patients described how RP is an effective way to ensure **patient protection and safety**, either by physically stopping the patient from harming and/or by de-escalating the patients' distress. Examples included incidents of self-harm, violent behaviour, or the use of NG feeding for medical reasons.

> *"Because you're physically unable to engage in whatever you're doing, it makes you aware of what's going on in your head… you're physically not able to do anything so then it becomes less like "you have to be doing this now" and it feels more like "how do I get out of this situation?'. But because of the holds, actually, it makes it easier to, like, de-escalate yourself."* – PPT 06 [restraint]

Participants generally described how HFU has a high **threshold** for the use of RP compared to their perceptions of other units, and that this depended upon the type of incident and the staff members involved. Self-harm incidents were generally described as being less likely to result in RP than harm towards others. Patients expressed that they were uncertain about the threshold, describing it as "*random*", "*confusing*" and "*bizarre*". Patients did not always agree with the decision taken by staff; describing situations where staff would use a less restrictive option, such as verbal de-escalation, when the patient believed RP might have been helpful.

> *"Let's say someone was put on Level 3's for self-harm and started self-harming on level 3, they wouldn't like get restrained, they wouldn't get put in holds, have any of that. They would just sit there and say 'stop it' because it doesn't change any of the behaviour. They only go that far if you're like actually in danger and so it just kinda confuses me on what the point is"* – PPT 09

Some participants recognised the risk of RP in terms the risk of escalation in their behaviour:

> *"Going to a restricted area makes things slightly harder for me to come back out to a less restrictive area. I get used to having, like, more restrictions. Then when I go out somewhere which has a lot of, like risks, then it makes it harder to control."* – PPT 07 [LTS]

Others equated RP with care, and expressed a desire for RP for reasons other than immediate safety, such as validation or consistency with other patients:

> *"[Staff] not engaging is not helpful and makes you feel kind of neglected and not cared about. It's like they only care about you if you're like in immediate danger."*- PPT 01

Patients described how RP use was dependent on **individual differences among patients and staff**. Patients described a perception that agency staff were more likely to use restraint than permanent staff, perhaps due to culture on other wards or having less knowledge of the patients and their care plans.

> *"I feel like agency staff probably restrain a lot more than regular staff do because they go to all sorts of hospitals where they may restrain for little things… so they'll pull the alarm for a lot of stuff"* – PPT 10 [restraint]

Patients described how those with high levels of risk, including self-harm and danger to others, were more likely to be involved in RP. Patients described a perception that, once RP had been used for a particular patient, it was more likely to occur again. One described how individual patient factors and patient preference were considered when care planning, but this brings the risk of an overly rigid response:

> *"If they think that restrictive practice is like needed and works, they'll put it in the care plan. Say, for instance, after 20 minutes of this, then they restrain... or, like, IM. But…things change and it's not always the same situation. So sometimes the same thing shouldn't be used for the situation."* - PPT 01

***The Impact of Restrictive Practice***

Patients described the impact of RP on their **relationship with staff**; feeling angry and fearful towards staff or thinking that staff were annoyed with them for having an incident. Patients described an impact on relationship with staff post-incident, with fewer or less therapeutic interactions alongside a loss of "*trust*", feeling "*alone*", and "*neglected*".

> *"It changes staff's interactions with you, like, especially after. They almost don't want to talk to you if you were engaged in something. And, like, I get it because it's positive [reinforcement]. But some staff members, they'll almost treat you like you've done something wrong."* - PPT 01

Others described a positive impact on relationship with staff, such as feeling supported and safe. Staff talking to patients during restraints, meaningful interactions during close observations, and staying with the patient post-incident debrief, contributed to a feeling of safety in relation to the RP. Some patients described how this enhanced their perceived ability to seek support post-incident.

> *"It was almost like I knew the staff a bit better and like I could talk to them more…about my feelings afterwards. Because if I'm upset then I can talk about my feelings, so if they stayed with me afterwards, I'd be able to, like, open up and talk to them. So then I knew them a bit better."* - PPT 07 [restraint and IM]

RP was described by patients as impacting their sense of **power, control, and freedom**. A lack of privacy and restriction of movement was described, as well as patients' sense of powerlessness in relation to staff due to age, gender, and inpatient status.

> *"It's just like if a grown man is saying 'I'm going to stop moving until you do these very specific things so I know you're following exactly what I'm saying, then I'll let you go'… it's like some kind of power trip going on."* - PPT09 [restraint]

This has an additional negative motivational impact, bringing about a sense of helplessness and a loss of voice in relation to the patient's treatment plan and progress:

> *"It really, like, crushed my motivation to get better. Because beforehand I sort of thought, like, 'I'm choosing to get better'…and then, when they sectioned me, I felt like, 'I'm not doing this myself anymore, they're forcing me to do it'".* - PPT03 [section and subsequent NG feeding]

Patients described the **impact of RP on their self-concept**. Patients described negative impacts such as feeling angry, disappointed, or frustrated towards themselves. Some patients described feeling that they deserved it, or feelings of guilt due to the impact on fellow patients.

> *"[RP makes you feel like you are] such a bad person that you deserve to get kept up at night. You deserve to be annoyed, observed, to be angry, trapped inside myself."* - PPT 04 [within eyesight observations]

Conversely, if RP was not used, some patients described how this could be invalidating, creating the self-concept that they were not 'unwell enough':

> *"[Witnessing RP has] definitely made me think that the patients who are getting restrained and PIT [alarms] pulled, what are they doing? Why am I not bad enough?"* - PPT 09 [restraint]

***A Changing Relationship to Restrictive Practice***

Patients described the way that their appraisal of incidents of RP **changed over time**. Patients described a change in perspective after time had passed, with a developing sense that the RP was justified and necessary in the situation. Recovery, debriefs, and discussions with staff and other patients facilitated a change in appraisal:

> *"I didn't think it was necessary at the time. But I guess that's because I didn't really care, in a way, about myself. But obviously, looking back, it was obviously needed. I wasn't thinking right."* - PPT 01 [NGT feeding]

## Discussion

This project explored the use of RP on a CAMHS inpatient unit using audit data and patient interviews. Regarding staffing and unit factors, findings highlighted a narrative amongst patients that some agency staff are more likely to be involved in RP than permanent staff. However, the audit did not find an observable association between RP use and agency staff spend or staffing levels. Notable peaks in RP were due to the admission of an individual patient involved in a large proportion of RP incidents. However, as the

audit looked at total agency spend (rather than the number of incidents involving different staff types), it is not possible to determine whether agency staff are more likely to be involved in restraint, or, if they are, what the cause of this is. Factors such as time and workload pressures and burnout were not explored in this audit and may be associated with RP use. In high stress situations, the ability to remember details of a patient's needs, or mentalise the patient's position may be impacted, with RP feeling like the only path available (Power et al., 2020).

Peak times for incidents of restraint were due to unit factors (planned NGT feeds under restraint) and incidents were relatively stable across the days of the week, suggesting that environmental factors such as structure have a relatively low contribution. Previous RP reduction initiatives implemented by HFU, such as providing activities and therapeutic structure, may be effective. However, it was found that, when incidents do occur, they tend to occur outside of structured hours.

In terms of patient factors, patients with primary diagnoses of ASD, EUPD and ED were involved in RP. Patients with ASD accounted for the largest proportion of incidents, which is notable considering their relatively small number of bed days in comparison to ED patients, for example. A small number of patients accounted for most incidents of RP. Interview participants recognised that, once RP was used for a particular patient, it was more likely to be used again. This may be explained by mental health severity, as research demonstrates that comorbidity, complexity, and psychosocial functioning are associated with RP use (Nielson, 2021). Risk may be synergistic, in that, once RP has been used, there are changes in the relationships and dynamics that compound the risk, and further incidents that require RP follow in a vicious cycle. Exploring the impact of patient factors such as co-morbidities, pre-existing risk factors, and intrapsychic factors is an avenue for future research.

In terms of patients' views of RP, patients largely demonstrated a sense that, whilst a negative experience, RP is used for safety and risk management and is necessary at times. Patients discussed the impact on beliefs about themselves, their sense of power, and their relationship to the staff. Similar to the adult literature, interviews highlighted fear and loss of trust (Ling, Cleverley, & Perivolaris, 2015). Unlike a small number of qualitative studies of young people in residential care, a theme of catharsis and containment during restraint did not emerge (Steckley, 2011, 2018). It may be that attachment difficulties account for catharsis and containment following restraint, which may be more common in residential settings than inpatient wards, and future research could explore this within both populations. Also, it may be that the approach at HFU means that RP is experienced as aversive rather than containing. Given negative self-appraisals and relational impact described, the repeated use of RP for an individual may cause iatrogenic harm, particularly in an adolescent context where important developmental tasks occur, such as the development of identity, independence from caregivers, and emotional self-regulation strategies (Havighurst, 1948; Silvers, 2022).

Patients described that, because they did not understand the reasons behind the use of RP, it felt unpredictable and confusing. This highlights an aspect of inpatient care that is potentially unavoidable. Variations in threshold may be due to staff availability, confidence, or burnout. There may also be aspects of risk assessment that are clear to staff but not shared with patients. Patients may want to know what actions might lead to restraint to provide predictability, but this information would dangerously instruct patients about what self-harm behaviours confer greater risk. In addition, providing a consistent approach in the use of RP would overlook individual factors, which is not in line with person-centred care plans recommended by NICE (National Institute for Health and Care Excellence, 2022). It may not allow for sufficient flexibility to adapt to changing ward

factors (meeting combined and competing needs of multiple patients), staff factors (training, rapport), and may discourage positive risk taking. An individualised approach is therefore recommended.

Notably, some patients reported negative experiences when staff have chosen a *less* restrictive approach. This raises questions around whether RP is ever preferable for a patient due to individual factors. Person-centred approaches should not be lost in the heuristic of 'least' restrictive. For example, seclusion or IM might be less distressing than prolonged restraint for an individual with sensory difficulties or history of interpersonal trauma. With a thorough multidisciplinary assessment and formulation, HFU staff may care plan RP that is more acceptable and less distressing to the young person.

Several young people reported understanding but disagreeing with the unit's 'non-reinforcing' approach. This is where staff will withdraw engagement with the patient following dangerous behaviours once the immediate risk has been assessed and/or managed to reduce any positive reinforcement. This approach is rooted in learning theory (Skinner, 1974) and forms the basis of Dialectical Behaviour Therapy (Linehan, Bohus, & Lynch, 2007) but requires future research on its application in an adolescent inpatient context.

Some patients also equated RP with being validated or cared about by staff, highlighting potential intrapsychic factors impacting how RP is appraised. For patients with an extreme ambivalent attachment style, distress and risky behaviour may be an interpersonal strategy to signal an attachment need to a caregiver and secure proximity (Farnfield & Stokowy, 2014). If this attachment need cannot be adequately met in an inpatient context, the young person may continue to have an unmet attachment need, alongside the negative impact of RP. Once started, the withdrawal of restriction might be experienced as rejection or invalidation, leading to distress and behaviours that lead to the

reinstatement of RP. Further research is needed into intrapsychic characteristics, such as ambivalent attachment, as RP may be particularly contraindicated for this group.

Patients' accounts of changing relationships to RP over time suggests that it is possible to re-appraise incidents of RP and facilitate relational repair. Patients' experiences of debriefs was mixed and in accordance with research showing that debriefs can be inconsistent or unclear in terms of their function, what they consist of, when they should be delivered, and by whom (Sutton, Webster, & Wilson, 2014). Although not explored in this audit, timing may be important. Discussing the experience whilst the person is still in an emotionally aroused ('crisis') phase of an incident may escalate their behaviour, whereas too long a delay may leave patients feeling isolated (Kaplan & Wheeler, 1983; Sutton et al., 2014). Some participants preferred practical or sensory-based strategies instead of debriefs. Where possible, patients should be given choice as to the type of debrief they would prefer. From an attachment perspective, this may reduce the relational impact of the RP use (Bowlby, 1977). Rupture repair can be fostered by emphasising validation and empowerment (Aspland, Llewelyn, Hardy, Barkham, & Stiles, 2008).

**Recommendations**

Service improvement recommendations were developed by the trainee and supervisors. Findings were presented by the trainee to service leads and clinical staff. Recommendations were refined following this meeting (see Table 5).

**Table 5**

*Recommendations for service improvement and future research*

| | |
|---|---|
| **Addressing staff & unit factors** | |
| **Audit** | Complete an in-depth audit to explore the influence of staff and unit factors on RP:<br>o Proportion of RP incidents involving different staff types (permanent vs agency)<br>o Information provided to staff at induction<br>o HFU staff members' level of training and understanding of relevant policy |
| **Addressing patient factors** | |
| **Reporting** | Ensure accurate reporting of ethnicity and non-binary gender to allow for further exploration in future audits. |
| **Formulation** | When formulating a patient's needs, consider the impact of neurodevelopmental conditions (such as ASD) and associated difficulties (such as sensory needs). Consider sensory profiles and sensory modulation strategies, as these have been found to reduce RP in adult settings (Andersen, Kolmos, Andersen, Sippel & Stenager, 2017).<br><br>For patients involved in a large number of RP incidents:<br>o develop a collaborative understanding of their relationship to RP, along with precipitants and potential maintenance factors, within a person-centred formulation.<br>o consider with the young person how their needs and goals can be met in the least restrictive way, whilst ensuring that care plans remain person centred.<br>o with comprehensive multidisciplinary assessment, formulation and risk planning, a '*more'* restrictive intervention may be care planned to reduce the distress caused to a patient. For example, prone restraint may be a preferred intervention for a patient with history of sexual assault, due to potential for re-traumatisation. |

| **Improving the patient experience** | |
|---|---|
| **Formulation** | Continue to work towards reducing RP use as much as possible. Highlight the potential impact of negative experiences (such as distress) within the broader formulation and share with patients where possible and appropriate.<br><br>Allow for compassionate communication around staff decisions which patients do not agree with. Patients expressed a desire to be given more information about the thresholds for RP use, but this might not be possible due to risk considerations. Instead, supportive conversations can be fostered during debriefs. Explore and formulate the patient's feelings, what RP use means to them (appraisals and any connections to historical experiences) and how RP could be avoided in the future. Proactive and person-centred approaches such as positive behaviour support (PBS) can be used as a framework for these discussions. |
| **Staff approach** | Review the 'non-reinforcement' approach, including:<br>o How it is applied at HFU<br>o If it is being applied appropriately and consistently, in line with behavioural theory<br>o How it is being explained to young people<br>o If there are ways to deliver this approach in a way that is not experienced as punitive by the young people<br>o Whether staff feel adequately skilled to offer alternative coping strategies<br>Given that non-reinforcement approaches in adolescent inpatient units is an under researched area, review this policy as new understanding emerges. |
| **Ward environment** | Continue with good practice of taking peers away from the incident for positive distraction. Be aware of the potential distress caused by witnessing RP and offer trauma-focussed intervention where clinically indicated. |

| | |
|---|---|
| **Post-incident support** | Continue with good practice of offering debriefs. Consider a review of the debrief process, including:<br>o When and how often debriefs are used<br>o How to best support patients' understanding of their function<br>o The optimal timing of debriefs (in relation to the formulation and any known pattern of escalation in the patient's behaviour)<br>o The feasibility of offering practical, sensory-based strategies as an alternative to debriefs<br>Creating a culture of consistent and supportive debriefs may improve patients' experiences of debriefs, reduce barriers to attendance and foster relational healing.<br><br>Continue to review policy regarding post-incident support. Interview findings suggest that post-incident support can promote perceived safety and relational healing, but there is the potential for this to be positively reinforcing. Review this policy as new understanding emerges in the research. |
| **Future Research** | |
| | Future research should explore:<br>The influence of staff and unit factors (e.g., level of restraint training, staff attitudes and predominant therapeutic modality) on RP.<br>The intrapsychic and intrapersonal factors common to patients who experience high frequency or severity of RP, compared to patients who do not.<br>The impact of staff approaches (such as non-reinforcement approaches) in adolescent inpatient settings, to inform policy and procedure. |

## Limitations

As it is not possible to evidence instances wherein significant risks have been prevented (not taken place), it is not possible to comment on whether HFU is striking the right balance between reducing RP and preventing harm. The data is not easily

generalisable to other time points or other units, as it reflects only a snapshot of RP within the context of HFU at the time.

A limitation of the audit data is that it relied on staff report. Policies and supervision are in place to ensure that incidents are recorded. However, data quality issues were identified. Ethnicity data was poorly recorded, and there were a small number of minor discrepancies in reporting between Ulysses and Carenotes. For example, one seclusion incident was logged on Ulysses but not Carenotes and is therefore not included in 'seclusion duration' data on TOBI. Diagnostic information was obtained from Carenotes, which relies on clinicians updating diagnosis in the 'patient information' tab accurately and in a timely manner. Future research should use a more robust approach of looking at diagnosis.

A limitation of the qualitative data is that participants experienced a wide range of RP types, with some having experienced more RP than others. This may mean that this is not a homogenous group. It may have been useful to include only those with the highest rates of incidents but due to a small pool of potential participants, this was not possible. Most interview participants were on the unit at the time of the audit, with the exception of one, whose admission occurred the year prior. Sampling only from patients on the unit at the time of the audit may have allowed for more meaningful integration of audit and interview data. Another limitation is that all participants were White British. This may reflect the demographic of patients admitted to HFU, but limits the generalisability of the findings to other inpatient units with differing proportions of ethnic minority populations. Ethnicity is an important consideration given evidence highlighting the over-use of restrictive practice for patients of ethnic minorities (Payne-Gill, 2021; Care Quality Commission, 2011).

The interview schedule was created with patient and clinician stakeholders to remain balanced (e.g., exploring any instances of RP being experienced as helpful or positive), but some questions may have benefitted from more neutral phrasing to reduce bias. The use of supplementary questions in the interview schedule based on clinical judgement allowed for ethical conduct by ensuring consent before discussing details of specific events. However, this may have introduced variability in the data. Supplementary questions may have been omitted for participants most negatively impacted by RP, potentially leading to a loss of valuable insight.

To minimise researcher bias during qualitative analysis, interviews were completed prior to the audit. A reflexive stance was taken, and an external supervisor reviewed two transcripts at random to support with the development of the thematic framework.

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**Theoretically Driven Research Project**

# The Impact of Trauma on Dissociative Experiences in Adolescents

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**Proposed journal:** The Journal of Trauma & Dissociation

**Rationale:** The *Journal of Trauma & Dissociation* is the official scientific journal of the International Society for the Study of Trauma and Dissociation. The Journal of Trauma & Dissociation, dedicated to publishing peer-reviewed scientific literature on dissociation and trauma, seeks manuscripts on theory, basic science research, clinical treatment and research related to interpersonal trauma and/or dissociation in children and adults. The Journal welcomes contributions from a variety of different approaches including anthropological, cross-cultural, epidemiological, neurobiological, psychological, psychometric, psychotherapeutic, and social viewpoints.

## Abstract

**Background:** Dissociation has been associated with a wide range of mental health needs and can occur following traumatic experiences. This study aimed to develop understanding of dissociation in adolescents by exploring the utility of a model proposed by Schauer & Elbert (2015), the 'Defence Cascade Model', which proposes that dissociation is an adaptive, evolutionary reaction in response to certain types of traumatic events (i.e., those including fixation, proximity, penetration, and contamination).

**Procedure:** 111 young people aged 11-24 under mental health services completed an online questionnaire exploring experiences of trauma, dissociation, post-traumatic stress, depression, and anxiety. The dissociation levels of those whose trauma involved aspects outlined by the Defence Cascade Model were compared to those whose trauma experience did not include these aspects. These scores were compared against a benchmark group of adolescents in services who had not experienced trauma.

**Main findings:** Results were not in line with the assertion of the Defence Cascade Model that traumas with fixation, proximity, penetration, and contamination lead to dissociation, as there were no significant differences in dissociation between the two trauma groups. PTSD explained a large proportion of variance in dissociation. Exploratory analysis found that age at the onset of the trauma, and time since trauma, were significantly associated with dissociation.

**Conclusion:** This suggests that features of trauma events are not predictive of dissociation. Clinical implications are considered, as well as directions for future research.


*Keywords:* Adolescents; trauma; dissociation

## Introduction

Dissociation is the disruption of the normal integration of consciousness, memory, identity, emotion, perception, body perception, motor control and behaviour (American Psychiatric Association, 2013). Dissociation is transdiagnostic and cuts across a variety of disorders (Lynn et al., 2019) including psychosis, anxiety, depression, and post-traumatic stress (Černis, Evans, Ehlers, & Freeman, 2021). It is also present in the general population (Maaranen et al., 2005). Dissociation can occur during and after traumatic events, and is a predictor of PTSD severity (Murray, Ehlers, & Mayou, 2002). Understanding is largely based on research with adult samples, which may not be applicable to different age groups, given the impact of developmental milestones on emotion regulation and coping (Brown, Becker-Weidman, & Saxe, 2014).

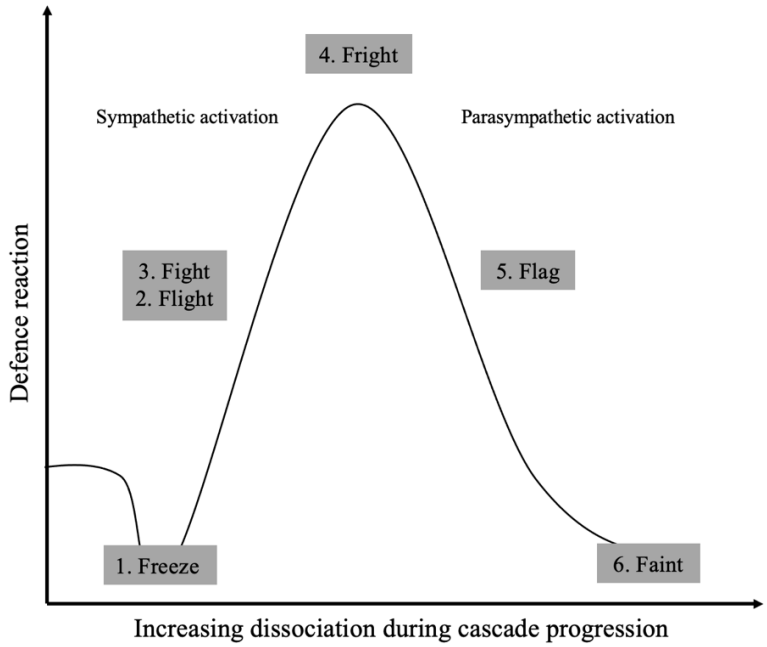
Adolescents are more likely to present with the dissociative subtype of PTSD compared to adults (Ross, Armour, Kerig, Kidwell, & Kilshaw, 2020). Prevalence of dissociation is high amongst adolescents in inpatient settings (23-45%; Putnam, 1997) and those involved in the justice system (Bennett, Modrowski, Kerig, & Chaplo, 2015). It may be that dissociation is a developmentally appropriate response to complex or severe life events, or because young people respond with dissociation when an event exceeds their capacity to respond in an organised fashion (Ross et al., 2020). Identifying dissociation in this age group is important as it can interfere with the construction of sense of self and has been linked to deliberate self-harm (Armstrong, Putnam, Carlson, Libero, & Smith, 1997; Černis, Chan, & Cooper, 2019). Dissociation in adolescents is associated with trauma, particularly interpersonal trauma (Sanders & Giolas, 1991). Research has found that the severity of trauma is highly correlated and predictive of dissociation (Ogawa, Sroufe, Weinfield, Carlson, & Egeland, 1997). Given this link, research has explored the role and adaptive value of dissociation during the trauma event itself.

## Defence Cascade Model

Research posits that dissociation is an automatic evolutionary response, and has a survival advantage, in that it shuts down the emotional, cognitive, sensory and behavioural responses that might otherwise compromise survival in a life-threatening situation (O'Malley, 2018). In their Defence Cascade Model, Schauer and Elbert (2015) describe a cascade (*freeze, fight, flight, fright, flag, faint*) of defence thought to optimise survival depending on the imminence and the nature of the threat (Figure 1). The cascade involves a sympathetic response ('uproar', including fight and flight) and a parasympathetic response ('shutdown' including flag and faint). Where uproar provides peak arousal and the alarm response, shutdown is characterised by the cessation of fleeing, fighting, and the numbing of pain, anger, and fear. This provides a survival advantage by inhibiting reactions that might be ineffectual or indeed worsen injury.

**Figure 1**

*An illustration of the Defence Cascade, based on Schauer & Elbert (2015)*



Not all individuals pass through each stage in this order, and the trauma event itself may determine when shutdown is used as a survival mechanism. Features of the trauma event that impact the likelihood of dissociation include:

- Imminence of threat/aggressor and total helplessness
- Direct body contact with the perpetrator
- Fixation (restraint/constraint)
- Skin contact
- Danger of skin penetration from sharp objects (e.g., teeth or a knife)
- Rapid arousal peak (startle) due to unexpected and sudden proximity of threat or aggressor
- Presence of fresh blood, mutilated bodies
- Being contaminated or in contact with infectious material (e.g., sperm, urine, or faeces)
- Anal, vaginal, or oral penetration of the victim
- Severe pain being inflicted on the victim

There may also be individual traits that influence the likelihood of a shutdown reaction. Since dissociation is elicited by extreme fear and helplessness, the model suggests that those who are younger and less likely to be in a position of power (i.e., children) will show this type of reaction with higher likelihood and frequency compared to adults. Therefore, the ‘defence’ displayed during a traumatic event (peri-traumatic response) is influenced by what is happening during the event and individual characteristics. This has implications for the post-traumatic response, as comparable dissociation is present following the event when the trauma memory is reactivated. The model classifies patients with PTSD into two types:

1) Uproar PTSD (non-dissociative response): Patients who experienced sympathetic activation (only) in response to the stressor. This group shows few signs of (shutdown) dissociation or passive avoidance during exposure.
2) Shut-down PTSD (dissociative response): Patients who experience parasympathetic dominance during the trauma and show a corresponding replay of physiological responding when reminded by a cue.

Research supporting the assertion that there are two physiologically distinct responses has shown that dissociative states are associated with activation in prefrontal and limbic structures (Lanius et al., 2002) and lower heart rate, when compared to non-dissociative responding (Koopman et al., 2004).

***Type of Traumatic Event***

Some studies support the premise that the trauma response is influenced by the type of trauma. One study involving people with PTSD following war and torture compared those whose trauma contained rape with those whose trauma did not (Gola et al., 2012). In response to trauma-related material, the group who experienced rape had higher salivary cortisol responses and, anecdotally, more 'shutdown behavioural patterns' compared to those who did not experience rape. Nearness of the perpetrator may therefore modulate peritraumatic physiologic responses, and thus cortisol responses to trauma reminders. This physiologically distinctive dissociative response may be adaptive during traumas involving close contact, entrapment and penetration; preventing a reaction that may lead to further damage (Schauer & Elbert, 2015).

Consistent with the model, research has found an association between child sexual abuse (CSA; which may include penetration, contamination and skin to skin contact) and dissociation (Lev-Wiesel & Zohar, 2014). Compared to other types of childhood traumas, adults who experienced sexual and physical abuse have the highest levels of dissociation

(Vonderlin et al., 2018), and children with PTSD following interpersonal trauma are likely to develop dissociation (Hagan, Gentry, Ippen, & Lieberman, 2018). CSA involving penetration is more likely to be associated with 'tonic immobility' (an involuntary defence response during trauma) compared to abuse not involving penetration (Heidt, Marx, & Forsyth, 2005). A similar link has been demonstrated between physical abuse and dissociation in studies of pre-school children (Hulette et al., 2008) and adolescents in a forensic setting (Carrion & Steiner, 2000). However, not all findings support the model. Carrion & Steiner (2000) found no association between dissociation and historical sexual abuse. Another study with pre-school children found that those who underwent severe physical abuse used dissociation as a coping mechanism, whereas those who experienced sexual abuse displayed greater post-traumatic arousal symptoms (Hulette et al., 2008), in line with the aforementioned 'uproar' PTSD. Given these inconsistent findings, the relevant features of the trauma that lead to dissociation after the trauma event may not have been captured in sufficient detail in previous studies, for example, whether the sexual abuse involved penetration. No study has yet explored whether specific factors outlined by the model (fixation, proximity, penetration, and contamination) predict dissociation, nor whether the model has utility when understanding dissociation in adolescents. Understanding the circumstances which place adolescents at risk of dissociation may support better recognition and treatment.

### *Appraisals*

The Defence Cascade Model proposes that defence reactions are organised based on an individual's appraisal of threat in relation to their own ability to counteract it. In line with research emphasising the role of appraisals (Lazarus & Folkman, 1984; Ehlers & Clark, 2000; Johnson & Kenkel, 1991), this study sought to further explore threat-related appraisals and their relationship with dissociation.

**The current study**

This study will explore the link between trauma and dissociation in a clinical adolescent population. It will test the assertion by the Defence Cascade Model that specific features of the traumatic event itself is related to dissociation. As the model is based on research with adults, it will be tested whether this is applicable to adolescents, given their different developmental context. Given that dissociation is transdiagnostic (Černis et al., 2021), yet previous studies focussed only on PTSD, this study will be open to adolescents across mental health settings to include those who have dissociative post-traumatic symptoms without a formal diagnosis of PTSD.

This study will utilise measures to assess participants' current dissociation levels, despite the Defence Cascade Model primarily focussing trauma processes. This decision stems from recruiting participants with diverse trauma types and varying timeframes since the trauma. While the Peritraumatic Dissociation Experience Questionnaire (PDEQ; Marmar, Weiss & Metzler, 1997) is available, it can be unreliable over extended periods, particularly months or years post-trauma (Thompson-Hollands et al, 2021). This approach aligns with the Defence Cascade Model, which suggests that individuals who dissociate during a trauma event are likely to display similar dissociative responses afterward. Research has identified a conditioned, stress-induced vasovagal response when confronted with trauma reminders (Bolles & Fanselow, 1980; Moscarello & Penzo, 2022), even decades after the initial trauma (Van der Kolk, Greenberg, Orr & Pitman, 1989; van Der Kolk 2013). Therefore, using measures of current levels of dissociation was considered appropriate to capture 'shut-down'-type responses.

A potential confound is the severity of the traumatic event. Trauma severity is difficult to measure objectively (Rubin & Feeling, 2013). Using categories of trauma type (e.g., penetrating vs non-penetrating assault) is not possible due to these elements being

part of the research focus. Asking clinicians to rate severity may impact validity and introduces subjectivity and ethical considerations. This study will therefore use frequency and duration as markers of the severity of the traumatic event, as in Ruggiero, McLeer, and Dixon (2000), to ensure that the relevant features of the trauma are measured rather than severity.

Additionally, this study will also explore participants' appraisals. The Trauma Appraisal Questionnaire (TAQ; DePrince et al., 2010), was deemed not suitable due to its 54-item length and its inclusion of appraisals that are not central to the Defence Cascade Model, such as interpersonal appraisals (alienation and betrayal), and those made after the trauma (self-blame). The model is concerned specifically with threat-related appraisals, such as inability to escape, helplessness, powerlessness, perceived survivability, startle, fear, and perceived contamination. The current study asked about these aspects in order to explore the impact of perceived life threat, over and above the event's actual or 'objective' life threat (e.g., feeling dirty even though the situation did not involve contamination of bodily fluids).

## Aims

This research aims to explore whether assumptions made by the Defence Cascade Model are evidenced in an adolescent clinical population by exploring the relationship between features of the traumatic event and subsequent dissociation in adolescents.

**Research Question 1:** Do adolescents whose trauma involves aspects outlined in the Defence Cascade Model (fixation, proximity, penetration, and contamination) have higher levels of dissociation than those whose trauma does not involve these aspects?

**Research Question 2:** Are threat-related appraisals (inescapability, helplessness, powerlessness, fear, startle, contamination, survivability) predictive of dissociation?

**Hypothesis 1:** Participants whose trauma involved these aspects (Group A) will have higher levels of dissociation than those whose trauma does not involve these aspects (Group B), and a 'benchmarking' group of adolescents without trauma (Group C), after controlling for trauma severity. There will be no difference in levels of dissociation between Group B and Group C.

**Hypothesis 2:** Threat-related appraisals will be predictive of dissociation.

## Methods

### Participants

The study recruited adolescents (11-24 years) currently under (or on the waiting list for) NHS mental health or physical health services across Oxford Health (OHFT), Berkshire Healthcare (BHFT) and Buckinghamshire Healthcare (BHT) NHS Trusts. Recruiting teams included community and inpatient CAMHS, crisis and outreach, adult mental health, eating disorders, early intervention in psychosis, burns and plastics, looked after children's services, and specialist services for trauma and sexual harm. Purposive and volunteer sampling was used. Clinicians were encouraged to consider eligible young people on their caseloads to invite them to take part. Advertisements were placed in clinic waiting areas and handed out to patients on Trust sites following clinics and groups (see Appendix N).

#### *Inclusion criteria:*

- Aged 11-24 years old (i.e., before their 25$^{th}$ birthday)
- Currently being supported by (or on the waiting list for) the involved services

#### *Exclusion criteria:*

- Unable to consent for themselves (per their healthcare professional)

- Unable to understand English (due to the questionnaires being in English)
- Diagnosis of moderate or severe learning disability (due to a lack of equivalent validated, accessible measures)

**Consent**

Participants were first approached by a healthcare professional known to them and provided with the advertisement. Patients who expressed an interest were then sent a web address (URL) directly or provided verbal consent for the researcher to contact them to do so. Patients then accessed the URL, which displayed the participant information sheet (Appendix O). Participants were required to initial the consent checkboxes before Qualtrics presented the questionnaires. Parental consent was not sought for participants of any age. Only patients whose health professionals deem them able to consent for themselves were invited to participate.

**Measures**

Measures used in the study are summarised in Table 1.

**Table 1**

*Measures (for full versions see Appendix P)*

| Measure | Description |
|---|---|
| Demographic Questions | Participants were required to enter their age, gender, any current mental health diagnoses, and any current service involvement. |
| Trauma Screener | A bespoke measure used to create groups for analysis based on the criteria listed in the Defence Cascade Model. Participants indicate if they have experienced or witnessed a traumatic event. Those who state that they have not experienced or witnessed a traumatic event are not presented the rest of |

| | |
|---|---|
| | the screener and proceed to the next questionnaire. Those who have are then presented with a checklist and asked to select what their trauma involved from a list of features (e.g., "*I was injured...*", "*The situation involved bodily fluid", "I was held down…").* Participants are asked the frequency and duration of the trauma, age of onset, and any cognitive appraisals at the time (e.g., "*I felt contaminated or dirty", "I thought I would not survive"* – rated on a five-point Likert scale from 0 'strongly disagree' to 5 'strongly agree'). The screener was constructed with feedback from experts by experience o– the language used. |
| Child Revised Impact of Event Scale (CRIES-8; P. Smith, Perrin, Dyregrov, & Yule, 2003)* | A validated 8-item self-report measure of PTSD in children and adolescents (8 years and above). Participants rate themselves on items from 0 ('not at all') to 5 ('often'). Higher scores indicate increasing PTSD symptoms. As the CRIES-8 performs equally well in terms of reliability and validity (Smith et al., 2003), this was used instead of the longer version (CRIES-13). |
| Impact of Event Scale Revised (IES-R; Horowitz, Wilner, & Alvarez, 1979)** | A validated 22-item self-report measure of PTSD in adults (18 years and above) Participants rate themselves on items from 0 ('not at all') to 4 ('extremely'). It has good validity and test-retest reliability (Horowitz et al., 1979). |
| Adolescent Dissociative Experiences Scale (A-DES; Armstrong et al., 1997)* | A validated 30-item self-report scale measuring dissociation in children and adolescents (11 to 18 years). A-DES is marked on an 11-point scale ranging from 0 (never) to 10 (always). The total A-DES score is the mean of all item scores (from 0 to 10). The measure is designed to reflect the continuous nature of dissociation, with higher scores indicating greater dissociation. It has good scale reliability and validity (Armstrong et al., 1997). |
| Dissociative Experiences Scale (DES-II; Carlson & Putnam, 2000)** | A validated 28-item self-report measure of dissociation in adults (18 years and above). DES-II is marked on an 11-point scale ranging from 0% (never) |

| | |
|---|---|
| | to 100% (always). The total DES score is the average score for all items (maximum score of 100). |
| Revised Child Anxiety and Depression Scale (RCADS-25; Ebesutani et al., 2012) | A validated self-report questionnaire measuring anxiety and depression in children and adolescents (8 to 18 years). The short, 25-item version was used instead of the original 47-item version (Chorpita, Yim, Moffitt, Umemoto, & Francis, 2000) as it reduces participant burden whilst still providing a good measure of anxiety and depression (Ebesutani et al., 2012). Though originally developed for children and adolescents, both long and short forms have been validated for use with adults (18 to 67 years), showing good reliability and validity (McKenzie, Murray, Freeston, Whelan, & Rodgers, 2019). |

*Note: *Participants <18 years only **Participants ≥18 years only*

**Procedure**

All study materials were presented by Qualtrics, an online survey platform. Two separate links displayed age-appropriate measures for participants <18 and ≥18 years. Participants were given the option to either complete the questionnaire independently, or with support from the researcher. Once the information sheet had been read and consent was provided, the participants completed the questionnaires. The debriefing page was then presented by Qualtrics, which signposted support (Appendix Q).

**Young Person Involvement**

A focus group of six young people in a non-clinical, educational setting and a previous CAMHS service user consulted on participant-facing materials to ensure readability and appropriateness of language. They deemed the final study materials to be acceptable.

### Governance

This study was sponsored by OHFT. Ethical approval was obtained through NHS Ethics Health Research Authority (see Appendix R). Approval was granted by the Oxfordshire County Council ethics board and research departments in each participant identification centre (PIC). Data exported from Qualtrics was securely stored on the OHFT cloud storage system and fully anonymised before analysis.

### Ethical issues and Risk

Participants were made aware of study aims and procedure and gave full informed consent before taking part. Participants were informed that, if they were completing the survey online, their responses would be anonymous, and that any disclosures could not be acted upon. Participants were informed that they could withdraw consent at any point. Those completing the survey with researcher support were informed that information may be shared in the case of risk disclosures, in line with Trust safeguarding policy and procedure. Participants were given the opportunity to debrief with a professional at the end of the study and the debrief page signposted to support. Information included reporting procedures and emergency contact numbers for immediate assistance.

## Analysis

### Groups

For analysis, participants were categorised into three groups based on their response to the trauma screener (for flowchart see Appendix S):

- *Trauma Group A:* participants who reported having experienced a traumatic event which happened directly to them and involved at least one of the ‘Trauma A’ aspects (e.g., injury, fixation, proximity, penetration, and contamination).

- *Trauma Group B:* participants who reported having experienced a traumatic event (directly or indirectly) that did not involve any of the 'Trauma A' aspects. They may have indicated that they experienced one or more of the 'Trauma B' aspects (e.g., *"I was there at the time of an accident", "I witnessed someone get hurt"*).
- *Control group:* Participants who did not report having experienced a traumatic event.

Analysis was completed with SPSS (v.29). The data were visually inspected for outliers. No outliers were identified and no data points were removed. Due to the use of two different questionnaires of dissociation (DES-II and A-DES) and PTSD (IES-R and CRIES-8), these two variables were converted into standardised z-scores for use in subsequent analysis. Visual inspection of z-score histograms identified a small amount of difference in distributions of z-scores between A-DES and DES-II, but this difference was deemed sufficiently small by the researchers and so standardised (z-scores) were used in subsequent analysis (see Appendix U).

## Results

Out of 141 initial respondents, 111 provided complete responses for subsequent analysis, resulting in a 78% completion rate. A power analysis, using G*Power (v.3.1.9.7) indicated that 128 participants were required for sufficient power (0.8) with a medium effect size (F = 0.25; see Appendix T). Sufficient sample size for statistical power was not reached. Sufficient participants were obtained for trauma groups A and B, with a shortfall in the control group.

Examples of traumatic events reported by participants in Trauma Group A included sexual assault, physical abuse, and psychiatric hospital experiences (including use of restraint). Examples reported by Trauma Group B included witnessing death or domestic

violence, experiences of road traffic accidents, severe bullying, and removal from parents. For participant demographics, see Table 2.

**Table 2**

*Participant Demographics*

| Characteristic | Group A | Group B | Control group | Full sample |
|---|---|---|---|---|
| **Age (n, %)** | | | | |
| Under 18s | 34 (68) | 12 (34.3) | 14 (40) | 60 (54.0) |
| Over 18s | 16 (32) | 23 (65.7) | 12 (34.3) | 51 (45.9) |
| Years (mean, SD)* | 17.54 (2.5) | 19.80 (3.4) | 18.70 (3.6) | 18.51 (3.2) |
| Range (years) | 14-24 | 14-24 | 13-24 | 13-24 |
| **Gender (n, %)** | | | | |
| Female | 38 (76) | 24 (68.6) | 21 (80.8) | 83 (74.8) |
| Male | 6 (12) | 10 (28.6) | 3 (11.5) | 19 (17.1) |
| Non-binary | 6 (12) | 1 (2.9) | 2 (7.7) | 9 (8.1) |
| **Diagnosis (n, %)** | | | | |
| Anxiety | 34 (68) | 18 (51.4) | 16 (61.5) | 68 (61.3) |
| Depression | 28 (56) | 14 (40) | 19 (73.0) | 51 (45.9) |
| PTSD* | 17 (34) | 3 (8.6) | 0 (0) | 20 (18.0) |
| Personality Disorder | 2 (4) | 5 (14.3) | 2 (7.7) | 19 (17.1) |
| Psychosis | 3 (6) | 3 (8.6) | 0 (0) | 6 (5.4) |
| Bipolar | 1 (2) | 2 (5.7) | 0 (0) | 3 (2.7) |
| Anorexia | 8 (16) | 3 (8.6) | 2 (7.7) | 11 (9.9) |
| Misophonia | 0 (0) | 0 (0) | 1 (3.8) | 1 (0.9) |
| ADHD | 2 (4) | 2 (5.7) | 1 (3.8) | 5 (4.5) |
| OCD | 1 (2) | 6 (17.1) | 1 (3.8) | 8 (7.2) |
| ASD | 7 (14) | 1 (2.8) | 2 (7.7) | 10 (9.0) |
| **Service** | | | | |
| Community | 37 (74) | 22 (62.9) | 14 (53.8) | 73 (65.8) |
| Psychiatric inpatient | 7 (14) | 3 (8.6) | 3 (11.5) | 13 (11.7) |
| Looked after service | 3 (6) | 1 (2.8) | 0 (0) | 1 (0.9) |
| None / missing data | 5 (10) | 10 (28.6) | 9 (34.6) | 24 (21.6) |

*Note: N = 111 (Group A: n=50, Group B: n=35, Group C: n=26)*

**Indicates significant difference between groups with Chi squared test (p>0.05).*

## Age

A one-way ANOVA found a significant difference between the groups in terms of age ($F(2) = 5.52$, $p = .005$), with a medium effect size ($\eta^2 = 0.09$). The assumption of homogeneity of variance was violated, as indicated by a significant Levene's test ($p = .003$). To address this violation, non-parametric tests were used for group comparisons.

Post hoc multiple comparisons using Dunnett's T3 demonstrated that participants in Trauma Group B (M = 19.8 years) were significantly older than participants in Trauma Group A (M = 17.54 years; MD = 2.23, p = .001). No other statistically significant differences were observed between the groups (all $p > .05$).

**Anxiety and Depression**

The internal consistency (Cronbach's alpha) of the RCADS-25 depression and anxiety scales, as reported by Ebesutani et al. (2012), is 0.80 and 0.91, respectively. In the current sample, the internal consistency for the RCADS depression and anxiety scales was 0.90 and 0.89, respectively, indicating acceptable internal consistency.

A one-way ANOVA compared the anxiety scores of all three groups and found a significant difference ($F(2) = 6.04$, $p = .003$) with a medium effect size ($\eta^2 = 0.09$). The assumption of homogeneity was met, as indicated by a non-significant Levene's test ($p > .05$). Post hoc multiple comparisons using Fisher's LSD test found significantly higher anxiety levels in Trauma Group A (M = 26.6, SD = 9.45) compared to the control group (M = 19.0, SD = 7.7, $p < .001$). No other statistically significant differences were observed between the groups (all $p > .05$).

A one-way ANOVA compared the depression scores of all three groups and found a significant difference ($F(2) = 9.34$, $p < .001$) with a large effect size ($\eta^2 = 0.15$). The assumption of homogeneity of variance was violated, as indicated by a significant Levene's test ($p = .012$). To address this violation, non-parametric tests were used for group comparisons. Post hoc multiple comparisons using Dunnett's T3 found significantly higher depression levels in Trauma Group A (M = 21.7, SD = 5.70) compared to the control group (M = 15, SD = 5.70, $p < .001$). No other statistically significant differences were observed between the groups (all $p > .05$).

**Trauma Frequency and Duration**

Mann-Whitney U tests were conducted to compare the frequency and duration of trauma between Trauma Group A and Trauma Group B. No statistically significant differences emerged between the two groups in the frequency or duration of their trauma (both $p > .05$).

**PTSD**

A one-way ANOVA found a significant difference between the groups in terms of PTSD ($F(2) = 17.88$, $p < .001$), with a large effect size ($\eta^2 = 0.25$). The assumption of homogeneity of variance was violated, as indicated by a significant Levene's test ($p < .001$). To address this violation, non-parametric tests were used for group comparisons. Post hoc multiple comparisons using Dunnett's T3 demonstrated that participants in both Trauma Group A ($M = 0.35$) and Trauma Group B ($M = 0.15$) had significantly higher PTSD scores than the control group ($M = -0.88$), with a mean difference of 1.23 and 1.03, respectively (both $p < .001$). No other statistically significant differences were observed between the groups (all $p > .05$).

**Dissociation**

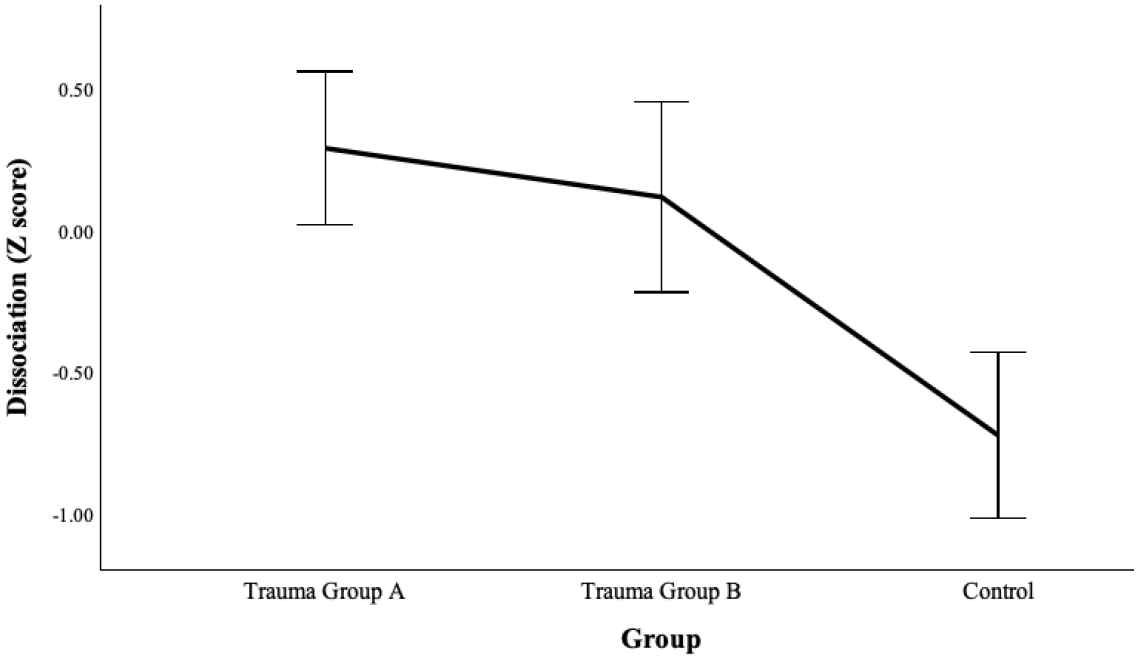
The reported internal consistency of the DES and A-DES is 0.95 (Kennedy et al., 2004) and 0.93 (Armstrong et al., 1997), respectively. In the current sample, the internal consistency (Cronbach's alpha) for the DES and A-DES were both 0.97, indicating acceptable internal consistency.

A one-way ANOVA found a significant difference between the groups in terms of dissociation ($F(2)=10.96$, $p < .001$) with a large effect size ($\eta^2 = 0.17$). A non-significant Levene's test indicated homogeneity of variances ($p = .171$), so parametric tests were used for group comparisons. Post-hoc multiple comparisons using Fisher's LSD demonstrated

that participants in Trauma Group A (M = 0.29) had significantly higher dissociation scores than the control group (M = -0.72; MD = 1.02, p < .001). Participants in Trauma Group B (M = 0.12) also had significantly higher dissociation scores than the control group (MD = 0.84, p < .001; see Figure 2). No statistically significant group difference was found between the two trauma groups (p > .05).

**Figure 2**

*Mean dissociation (z scores) of each group*




Note: Error bars indicate 95% CI.

**Exploratory Analysis**

Exploratory analysis looked at trauma groups only (N = 85). A hierarchical multiple regression analysis was conducted to assess the extent to which shared variance in dissociation could be explained by the included variables. The first model looked at the impact of potential confounding variables: 'years since trauma', 'age at trauma' and PTSD. This model accounted for a moderate amount (34.7%) of the variance in dissociation (R = 0.59, p < .001). The explanatory variable 'group' was added as a second model, which did not add any additional variance (R = 0.59, $\Delta R^2 = 0$). A third model added 'appraisals' and

found that this accounted for a small amount of additional variance beyond what was explained by the variables in model one, to a total of 37.1% ($R = 0.61$, $\Delta R^2 = 0.024$), but this was not statistically significant. This further supports the conclusion that the type of trauma ('group') is not a significant predictor of dissociation. As PTSD explains a large proportion of the variability, once PTSD is accounted for, the variables of interest offered no additional explanatory power. Correlation coefficients across combinations of all variables included in the regression model were explored (see Table 3). PTSD was found to be significantly correlated with both dissociation and appraisals, but not to 'years since trauma' or 'age at trauma'. Given the association with appraisals, individual appraisals were explored further.

**Table 3**

*Correlation coefficient matrix of included variables (N = 85)*

| Variable | | 1 | 2 | 3 | 4 | 5 | 6 |
|---|---|---|---|---|---|---|---|
| 1. Age at trauma | Correlation | - | -.85** | .02 | .20 | -.29** | -.07 |
| | Sig. (2-tailed) | - | <0.001 | .88 | .06 | .01 | .54 |
| 2. Years since trauma | Correlation | -.85** | - | -.02 | -.02 | .30** | .01 |
| | Sig. (2-tailed) | <0.001 | - | .88 | .88 | .01 | .90 |
| 3. PTSD | Correlation | .02 | -.02 | - | -.12 | .50** | .50** |
| | Sig. (2-tailed) | .88 | .88 | - | .26 | <0.001 | <0.001 |
| 4. Group | Correlation | .20 | -.02 | -.12 | - | -.09 | -.13 |
| | Sig. (2-tailed) | .06 | .88 | .26 | - | .42 | .22 |
| 5. Dissociation | Correlation | -.29** | .30** | .50** | -.09 | - | .39** |
| | Sig. (2-tailed) | .01 | .01 | <0.001 | .42 | - | <0.001 |
| 6. Appraisals (total) | Correlation | -0.7 | .01 | .50** | -.13 | .39** | - |
| | Sig. (2-tailed) | .54 | .90 | <0.001 | .22 | <0.001 | - |

A second hierarchical multiple regression analysis was conducted. Again, the first model (confounds only) accounted for a moderate amount (34.7%) of the variance with no significant increase in the second model with the addition of 'group'. A third model included each appraisal independently to look at their individual share of variance. This model accounted for a small but non-significant amount of additional variance, to a total of 40.5% of the variance ($R = 0.64$, $\Delta R^2 = 0.058$). None of the appraisals added any

significant amount of variance individually (all $p > 0.05$). Examination of correlation coefficients highlighted some appraisals as relatively stronger predictors than others. Also, some appraisals demonstrated a positive relationship with dissociation while others demonstrated a negative relationship. The appraisals of feeling *powerless* ($r = 0.09$), a *sudden startle* ($r = 0.09$), and thinking one would not *survive* ($r = 0.06$) were associated with greater dissociation. Of particular note was the appraisal of feeling *dirty*, which demonstrated a relatively stronger positive association with dissociation compared to other appraisals, approaching statistical significance ($r = 0.12$, $p = .07$). Conversely, *inescapability* ($r = -0.09$) and feeling *scared* ($r = -0.04$) were negatively associated with dissociation. The appraisal of *helplessness* had a negligible coefficient ($r = -0.002$), suggesting a weak association.

Additional exploratory analysis examined peri-traumatic dissociation by calculating a sum score for each participant, representing the number of peri-traumatic symptoms reported (0 to 4). Due to the non-normal distribution of this data, confirmed by a significant Shapiro-Wilk test ($p < .05$), non-parametric tests were used for analysis. A Spearman's Rho correlation found a moderate positive correlation between current dissociation (as measured by DES-II/A-DES) and peri-traumatic dissociation (Spearman's Rho = 0.47, $p < .001$). To assess group differences, an independent samples Mann-Whitney U test found no statistically significant difference in peri-traumatic dissociation between Trauma Group A (mean rank = 46.9) and Trauma Group B (mean rank = 37.5, $U = 682.5$, $p = 0.08$).

## Discussion

This study explored the impact of different traumatic experiences on dissociation in adolescents. Specifically, it sought to ascertain the applicability of the Defence Cascade Model to the adolescent population. The first hypothesis posited that individuals subjected

to traumas involving features outlined in the model (fixation, proximity, penetration, and contamination; Group A) would have higher levels of dissociation compared to those whose traumas lacked these characteristics (Group B). The two groups were found to be equal in terms of their trauma severity and levels of PTSD, but there was no statistically significant difference between them in terms of dissociation. The significant relationship found between peri-traumatic dissociation and current dissociation supports the idea of a conditioned dissociative response which is replayed following trauma. No significant differences in peri-traumatic dissociation were found between the trauma groups, further supporting the finding that features of trauma do not influence dissociation, either during or after the event. Hypothesis one was therefore rejected. These findings challenge the theoretical framework of the Defence Cascade Model, and raise questions about its relevance in conceptualising dissociation in adolescents.

The second hypothesis posited that threat-related appraisals during the trauma event would be predictive of dissociation. Threat-related appraisals did not add any significant proportion of variance in dissociation over and above covariates. Hypothesis 2 was therefore rejected. There is extensive evidence linking appraisals to PTSD symptomatology and modifying these appraisals can be effective in its treatment (DePrince et al., 2010; Mitchell, Brennan, Curran, Hanna, & Dyer, 2017; Ehlers & Wild, 2022). This null finding may be due to the appraisals in this study being centred around perceived threat. Findings highlighted that some appraisals may be more related to dissociation than others. In particular, "*I felt dirty or contaminated*" had a stronger positive relationship with dissociation relative to the other appraisals, highlighting that perceived sense of contamination may be related to dissociation. As appraisals were reported retrospectively, the null finding may also be due to appraisals being prone to change and subject to memory biases over time (Ehlers & Clark, 2000).

The finding that younger age at onset of the trauma was related to subsequent dissociation is in line with consensus in the literature that people who experience trauma at a younger age are more prone to dissociative responding (Chu et al., 1999). The Defence Cascade Model highlights size and strength relative to the perpetrator as a factor that influences perceived sense of inability to escape and levels of fear, thus triggering a dissociative response. However, this study found no impact of appraisals such as perceived sense of inability to escape and levels of fear. It may therefore be that other appraisals or psychological processes not captured in this study, such as betrayal by a caregiver (Freyd, 1996; Lawson & Akay-Sullivan, 2020), moderates the relationship between younger age and dissociation. Developmental factors, such as stage of cognitive development and coping ability, may also mean that dissociation is utilised as a coping mechanism by younger children (Heidt et al., 2005; Hulette et al., 2008).

Additionally, a longer time since the traumatic event was associated with greater levels of dissociation. In line with a continuum model of dissociation, adolescence may be a transition point where there is divergence between normal and pathological dissociation (Armstrong et al., 1997), and dissociation may become more pathological when unrecognised. This is of clinical relevance, as research has found that those who continue to have persistent dissociation four weeks after a single-event trauma are more prone to developing chronic PTSD (Murray et al., 2002). Another potential explanation is the impact of cumulative trauma, as research indicates that dissociation is more prevalent in adolescents with multiple traumas (Ross et al., 2020; Hagan et al., 2018; Martin et al., 2013). However, the current study involved adolescents in various stages of their journey through services and data on cumulative trauma (i.e. of multiple types) was not gathered.

To conclude, findings of this study are not in line with the assertion of the Defence Cascade Model that specific features of traumatic experiences are predictive of

dissociation. This suggests that this model may not have utility in understanding dissociation in adolescents. This highlights a clinical need to ask adolescents about dissociative experiences regardless of the nature of the trauma experienced. Findings contribute to existing literature highlighting that those who experience trauma at a younger age are particularly at risk of developing dissociation.

**Limitations**

This study is limited by the measures used. Firstly, current measures of dissociation (A-DES and DES-II) were used to assess a model that is primarily concerned with a peri-traumatic process. A significant relationship found between peri-traumatic dissociation and current dissociation supports the use of these measures in exploring a peri-traumatic process. However, this may overlook data from participants whose dissociation has since resolved. As the A-DES and DES-II do not specify a timeframe, this introduces a potential confound and impacts the precision of the understanding of the temporal dynamics of the development of dissociation. Also, a novel checklist screener was required to create groups for analysis, but this measure is not validated and so its reliability and validity cannot be commented on. This screener relies on retrospective reporting of traumatic events, which introduces the potential for memory distortions, biases, and subsequent appraisals, as per the cognitive-behavioural model of PTSD (Ehlers & Clark, 2000), thus influencing the reliability and accuracy of the reported experiences. Future research may benefit from exploring methodologies that address these challenges. The use of frequency and duration as a proxy for trauma severity is also a limitation. This was due to the challenges associated with measuring severity in other ways (such as categorising trauma by type, or asking clinicians to indicate severity). Using self-reported frequency and duration is also a limitation, as even for seemingly more objective details of trauma, inconsistency is

common and responses to the same questionnaire can change over time (Southwick et al, 1997), meaning that this may not be an entirely objective measure of severity.

The study did not achieve the required sample size for statistical power, with controls specifically affected by this limitation. However, the research questions and analyses were concerned mostly with the trauma groups, with control data used as a benchmark. Not all distributions of dependent variables were ideal for parametric analyses. However, where homogeneity of variance was lacking, non-parametric group comparisons were used.

**Future Research**

Validation of a screener aligned with the criteria of the Defence Cascade Model would improve the validity of group categorisation. Future research in adolescents should focus on developing a reliable and valid method of measuring dissociation and appraisals at the time of trauma, without relying on retrospective self-report. The creation and validation of a single measure of dissociation for adolescents up to the age of 25 would allow valid and reliable measurement in this age group. Longitudinal studies would mitigate the limitation associated with retrospective reporting of traumatic events and provide more data regarding the evolution of dissociation in the context of adolescents' stage of development.

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## Executive Summary

Dissociative experiences are defined as feeling numb, ‘zoned out’ or like your body is not your own. These experiences can be associated with a wide range of mental health needs, particularly following a traumatic experience. Despite adolescents presenting to services with dissociative experiences, these are often missed or misdiagnosed.

This study aimed to further our understanding of dissociative experiences in this age group by exploring the utility of a model proposed by researchers Schauer & Elbert, the ‘Defence Cascade Model’. This model proposes that dissociation is an adaptive, evolutionary reaction, during a traumatic experience. It proposes that there is a cascade of possible responses (6 Fs), called 'freeze', ‘fight’, ‘flight’, ‘fight’, ‘flag’ and ‘faint’ although people do not necessarily go through the cascade in the order. When experiencing a traumatic event, the most evolutionary adaptive response will activate, i.e., to run away or fight off your attacker, if you are likely to be successful. For certain types of traumas, they propose that the dissociative ‘shutdown’ response is more likely to be activated, as this confers a survival advantage compared to utilising the ‘fight’ or ‘flight’ response. If you do not stand a chance of getting away or beating your attacker, then these reactions might actually increase the danger to you or the injury you sustain, and so dissociation might be much safer. These are traumas which may involve fixation (such as restraint), proximity (to the perpetrator), penetration (by a body part or weapon), and contamination (of blood or bodily fluid). After the traumatic event, a person is more likely to re-experience the dissociative ‘shutdown’ when faced with something that reminds them of the traumatic experience. This model has potential implications for how we understand the development of dissociative experiences, and the types of traumatic experiences that are likely to lead to the development of dissociation. However, the evidence base for the model is limited to physiological studies and studies in adults. No study has yet tested the usefulness of this

model for young people.

This study sought to explore this model and its applicability to an adolescent age group, to further understanding of the nature of dissociation in response to traumatic events. To do this, young people aged 11 to 25, currently under (or on the waiting list for) NHS mental health services, were invited to complete an online questionnaire. The questionnaire asked them about a range of mental health experiences, including experiences of trauma and dissociative experiences. It also asked about symptoms associated with PTSD, anxiety, and depression. Once all the participants had completed the questionnaire, the researcher split the participants into three groups. The first group was people who had experienced a traumatic event in line with the type of event that Defence Cascade model proposed would lead to trauma (i.e., traumas with fixation, proximity, penetration, and contamination), which we called Trauma Group A. The second group was people who had experienced trauma which did not have these features, which we called Trauma Group B. The third was a 'control' (or 'benchmarking') group of people who had not experienced trauma (though were recruited through mental health services, so may have had other conditions such as depression, anxiety, or psychosis). They were asked to complete an online questionnaire asking about experiences of trauma, dissociation, PTSD, anxiety, and depression. 111 people completed the survey.

The researcher looked at the differences between these groups in terms of dissociation. As expected, the two Trauma Groups scored more highly on measures of post-traumatic stress disorder (PTSD) compared to the control group. However, there were no differences in levels of dissociation between the two trauma groups. Once we controlled for PTSD, there was also no effect of appraisals (thoughts/ideas/beliefs) on dissociation. However, the thought of feeling dirty or contaminated stood out as relating more to dissociation than the other appraisals. We found that increased dissociation was

associated with younger age of onset of the trauma, and greater amount of time since the trauma. Findings are not in line with the assertion by the Defence Cascade Model that features of the trauma are related to dissociation, as there was no difference in dissociation levels between participants who had traumas with fixation, proximity, penetration, and contamination, and those whose traumas did not include these features. This suggests that the features of the trauma event are not predictive of whether someone will go on to develop dissociation. However, it supports other research which found that people who experience trauma at a younger age may be more prone to developing dissociation.

This study is limited in that it did not achieve the ideal sample size for statistical power. Also, the groups were created by a novel checklist which was made for the purposes of this study and is therefore not validated. The study also relies on people being able to accurately recall what they were thinking and feeling during the traumatic event, which may be biased or may have changed over time. Nevertheless, this study is the first to explore the specifics of the Defence Cascade Model in terms of its applicability to the adolescent population. The study finds no evidence that this model may be a useful model to apply to adolescents with trauma. However, future research may be able to use better measurements to further explore the model.

## Connecting Narrative

Since working as an assistant psychologist, I have had an interest in trauma, and this was furthered by doctorate teaching on CBT for PTSD. I was struck by the narratives of people who had undergone traumatic life events, including natural disasters, sexual assaults, car accidents and experiencing war. I developed an interest in the neurobiological and psychological basis of the development of PTSD, the cognitive-behavioural processes behind post-traumatic stress and post-traumatic growth, the ways in which people experience this, and access support. I started thesis planning in the hope that I would explore these aspects in a range of contexts.

### SRL

Influenced by social and political contexts, and dominant narratives such as increasing workloads and demands in public sector organisations, I considered groups who work in this area who have a higher likelihood of having a traumatic experience. Through my personal experience of having a family member working in the Fire and Rescue Service, I became aware of the potentially traumatic events experienced on a regular basis by Firefighters, and how systems respond when exposed to an event which places them at risk of PTSD. Anecdotally, I heard of the use of support from peers in processing and moving on from these incidents. Having an interest in peer support and group identity from the literature, I was curious about the identity related to being a firefighter and how this may either facilitate or be a barrier to utilising peers when coping following traumatic incidents. Although meta-ethnography was new to me, on learning the approach, I valued being able to immerse myself in the data and consider multiple levels of interpretation. Having a strong theoretical model in mind helped guide my thinking and I was surprised by the nuances in the findings, opposing concepts, and themes. I learned the value of

transparency, rigorous documentation of process, and clear justification of each decision made when completing a literature review.

**SIP**

I was struck by teaching on the course which explored the history of clinical psychology and subsequent seminars where we reflected on power within the mental health system. Reflecting on current events, such as Panorama investigations into mental health services, I considered the potential for iatrogenic harm. On placement, I observed the complex clinical and ethical decisions that had to be made when depriving people of their liberty in the interests of safety and risk management. In line with my interest in critical psychology and my personal value of giving a voice to those who may go unheard, I became curious about patients' experiences of their liberty being restricted in the interests of safety. Hearing how a small number of patients required frequent intervention on adolescent inpatient units, I considered the intrapsychic factors and cognitive-behavioural processes which may be contributing. I proposed a research project to explore this, and PAS recommended that the project would be better suited as a SIP. This allowed me to explore factors specific to a single inpatient unit and use findings to inform service-level recommendations. Additionally, the qualitative element allowed me to explore the internal processes which may maintain behaviours that lead to frequent involvement in restrictive practice, providing a basis for future research.

I enjoyed the process of completing this project. I spent study days on the unit to immerse myself with the team and I constructed the project with service-user involvement. It was a privilege to interview young people and I was struck by their courage and willingness to share their experiences and contribute to a project with potential benefits for future patients. Thematic Analysis gave me the space to bring meaning to the data and I enjoyed the freedom of using creative methods to immerse myself in it, such as thematic

maps. When giving feedback to the unit, I was challenged to consider how best to communicate both positive and negative information in a constructive manner, by bringing together a shared understanding as opposed to being perceived as being critical. I was inspired by the commitment of the service to supporting the project and implementing recommendations.

**TDRP**

Having worked in CAMHS prior to training, I was inspired to complete my TDRP with an adolescent population as its focus. Project development was a challenging process, as many topics of interest and clinical relevance arose during discussion, which were not deemed suitable for a TDRP during the PAS process. This was time-consuming, as I had to write several proposals for entirely new projects each time. On reflection, this developed my research skillset as I learned to continually review my research ideas in terms of feasibility. I learned the importance of research not only being clinically relevant but also having a strong theoretical basis. The process became more straightforward when I identified a specific model I was interested in testing in adolescents.

Challenges also arose throughout the project. I learned the time-consuming nature of recruiting patients through NHS clinicians, given current service pressures. Recruitment required me to be proactive, hands-on, and committed. I attended team meetings, therapy groups, inpatient wards, sent regular emails to teams, liaised with assistant psychologists, and facilitated communication between sites. In supervision I have reflected on the barriers, ethical dilemmas, and societal factors influencing the practicalities of completing clinically worthwhile research with under 18s. I have a newfound appreciation of the flexibility and resilience required to push forwards when faced with the hurdles that arise during a large project.

Overall, this thesis gave me experience of the reality of completing research as a clinical psychologist. As my only prior research experience was my undergraduate project, which was experimental and lab-based, this was my first experience of the real-world benefits and challenges of completing research in clinical populations. I have learned that all research has limitations, and so transparency, openness and taking a critical viewpoint of one's own research is paramount. I now bring a sense of curiosity, observance, and open-mindedness with regards to opportunities for research and NHS service improvement and I am motivated to pursue this further in my qualified role.

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My journey through the doctorate would not have been possible without the unwavering support I have received from my family – mam, dad, Emily, Aunty Ellen, and Daniel. To my late grandma, Renee Graham, I am eternally grateful for your love, encouragement, and for the influence you had in shaping the person I am today.

# Appendices

## Systematic Review of the Literature (SRL) Appendices

### Appendix A: SRL - Search Strategy

**Web of Science and Scopus**

*firefighter? or firem?n or "fire service" or "fire brigade"*

*AND trauma* or "stress disorder?" or "psychological resilience" or adaptation or "post-traumatic growth"*

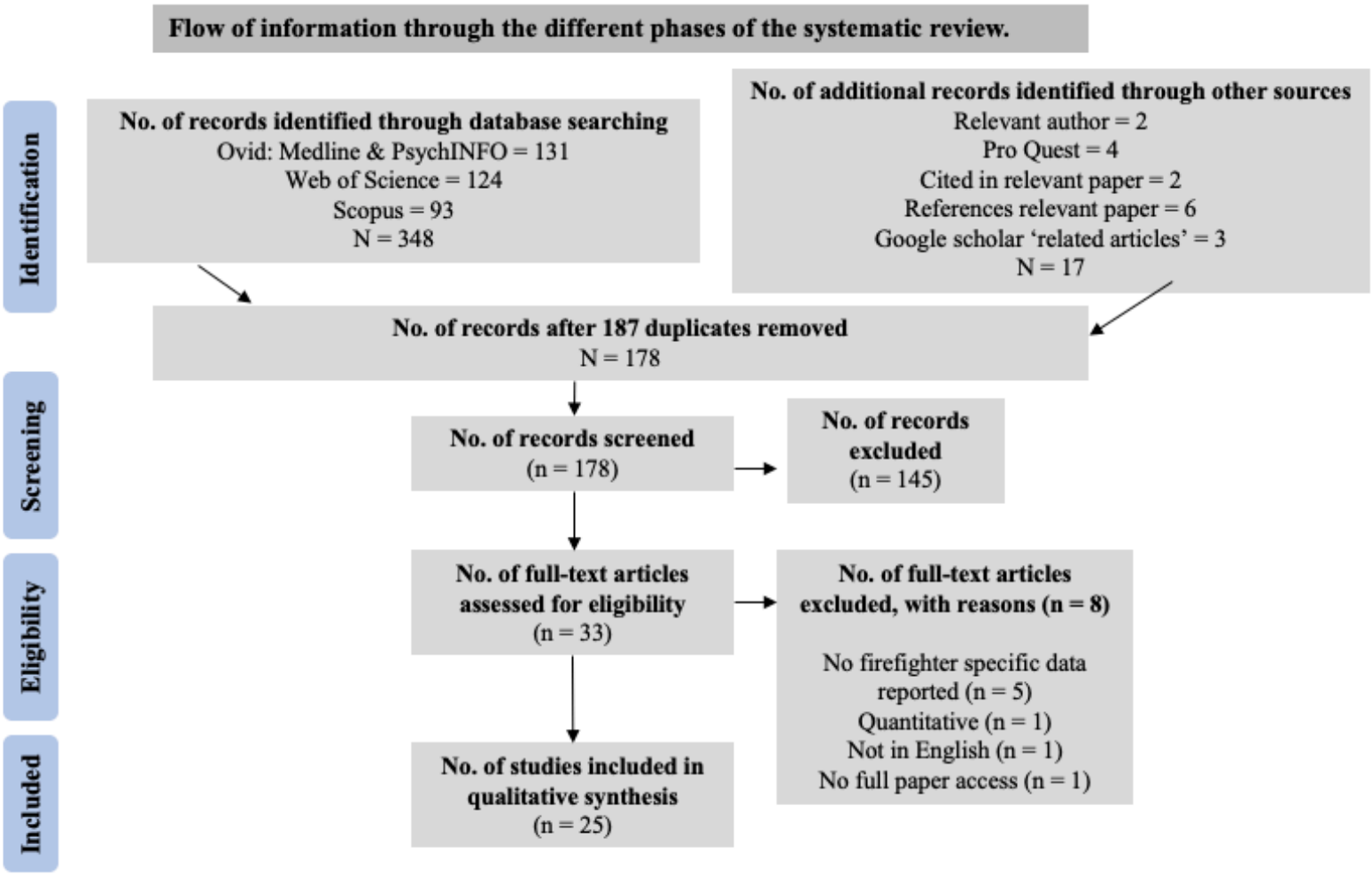
*AND "peer support" or "social support" or "mutual help"*

**Ovid (Medline and Pubmed)**

| | |
|---|---|
| *1* | *firefighter? or firem?n or fire service or fire brigade).ti,ab.* |
| *2* | *Firefighters/* |
| *3* | *1 or 2* |
| *4* | *(peer support or social support or mutual help).ti,ab.* |
| *5* | *Self-Help Groups/* |
| *6* | *Social Support/* |
| *7* | *4 or 5 or 6* |
| *8* | *(trauma* or stress disorder? or psychological resilience or adaptation).ti,ab.* |
| *9* | *Stress, Psychological/ or Stress disorders, traumatic/ or Psychological trauma/ or Stress disorders, post-traumatic/* |
| *10* | *Resilience, psychological/ or Adaptation, Psychological/ or Emotional Adjustment/ or Posttraumatic growth, psychological/* |
| *11* | *8 or 9 or 10* |
| *12* | *3 and 7 and 11* |

## Appendix B: SRL - PRISMA Diagram

The below PRISMA diagram outlines the flow of information through the different phases of the systematic review.



## Appendix C: SRL - Quality Appraisal Tool

**Critical Appraisal Skills Programme (CASP) Tool for Quality Appraisal in Qualitative Evidence Synthesis**

1) *Was there a clear statement of the aims of the research?*
2) *Is a qualitative methodology appropriate?*
3) *Was the research design appropriate to address the aims of the research?*
4) *Was the recruitment strategy appropriate to the aims of the research?*
5) *Was the data collected in a way that addressed the research issue?*
6) *Has the relationship between researcher and participants been adequately considered?*
7) *Have ethical issues been taken into consideration?*
8) *Was the data analysis sufficiently rigorous?*
9) *Is there a clear statement of findings?*
10) *Is the research valuable?*

## Appendix D: SRL - Reflexivity Statement

Throughout the process of conducting the meta-ethnography, I remained attuned to the potential influence of my own background and personal connections on the interpretation of the included studies. I am a White British female completing doctoral training in Clinical Psychology.

In my personal life, I am familiar with the experiences of firefighters through my partner, who serves in the fire service. I recognized the need to approach the synthesis with a heightened awareness of potential biases. The informal narratives shared by my partner's colleagues over a cup of tea often provided rich insights into their coping strategies, creating a context that I endeavoured to acknowledge and balance in my interpretations.

Professionally, my training as a psychologist introduced a potential bias toward anticipating the effectiveness of both formal and informal support mechanisms. However, as I engaged with the existing literature and the papers identified by the review, a notable finding emerged — a preference among firefighters for informal peer support over more formal, external interventions. This realization prompted a reflective exploration of my own assumptions and highlighted the importance of embracing the unique culture and preferences within the firefighting community. This highlights the necessity of being aware of biases to ensure a balanced and nuanced interpretation of the included studies.

Ongoing dialogue with my research supervisor and second reviewer provided valuable opportunities for peer debriefing, contributing to a more robust and transparent research process. Acknowledging and critically reflecting on these potential biases enhances the credibility of the findings. As meta-ethnography is an iterative process (involving repeated cycles of reading, interpreting, and synthesizing studies), these cycles were used to engage in ongoing reflexivity, considering how my evolving understanding was shaped by my own perspectives.

## Appendix E: SRL - Meta-Ethnography Process

The seven steps of Meta-Ethnographic analysis (Noblit et al., 1988):

1. Getting started – identifying the research question.
2. Deciding what is relevant to initial interest / the scope.
3. Reading the studies – identifying the main concepts.
4. Determining how the studies are related – consider common and recurring concepts amongst the studies.
5. Translating the studies into one another – including second-order interpretations*
6. Synthesising translations – consider concepts and interpretations to establish relationships between the studies.
7. Expressing the synthesis.

**First order constructs represent the primary data reported in each paper (participant quotations). Second order constructs are the primary authors' interpretations of the primary data (metaphorical themes or concepts). Third order constructs are the reviewer's higher order interpretations developed from a tertiary analysis of the first and second order constructs.*

## Appendix F: SRL - Quality appraisal results

As measured by the CASP Quality Appraisal tool:

| Authors | Clear aims | Methodology | Research design | Recruitment | Data collection | Relationship / bias | Ethical issues | Data analysis | Findings | Valuable research? | Overall quality (Moderate or low) |
|---|---|---|---|---|---|---|---|---|---|---|---|
| Abelsson, 2018 | Y | Y | N | N | Y | N | Y | Y | Y | Y | L |
| Brazil, 2019 | Y | Y | Y | Y | Y | Y | Y | Y | Y | Y | M |
| Conway & Waring, 2020 | Y | Y | Y | N | Y | N | N | Y | Y | Y | M |
| Dangermond et al., 2022a | Y | Y | Y | Y | Y | Y | N | Y | Y | Y | M |
| Dangermond et al., 2022b | Y | Y | Y | Y | Y | Y | Y | Y | Y | Y | M |
| Dangermond et al., 2022c | Y | Y | Y | Y | Y | Y | N | Y | Y | Y | M |
| Dangermond et al., 2022d | Y | Y | Y | N | Y | Y | Y | Y | Y | Y | M |
| Ellis, 2019 | Y | Y | Y | Y | Y | Y | Y | Y | Y | Y | M |
| Firoozi, 2019 | Y | Y | Y | N | Y | Y | Y | N | Y | Y | M |
| Fullerton et al., 1992 | Y | Y | Y | N | Y | N | N | N | Y | Y | L |
| Haslam & Mallon, 2003 | Y | Y | Y | N | Y | N | N | N | Y | Y | L |
| Herbert, 2013 | Y | Y | Y | N | Y | Y | Y | Y | Y | Y | M |
| Isaac & Buchanan, 2021 | Y | Y | Y | Y | Y | N | Y | Y | Y | Y | M |
| Jahnke et al., 2014 | Y | Y | Y | Y | Y | N | Y | Y | Y | Y | M |
| Kling et al., 2022 | Y | Y | Y | Y | Y | N | Y | N | Y | Y | M |
| McCarley Blaney et al., 2021 | Y | Y | Y | N | Y | N | Y | Y | Y | Y | M |
| McMahon, 2010 | Y | Y | Y | Y | Y | Y | Y | Y | Y | Y | M |
| Miller et al., 2021 | Y | Y | Y | Y | Y | N | N | Y | Y | Y | M |
| Partnoff, 2021 | Y | Y | Y | Y | Y | Y | N | Y | Y | Y | M |
| Regehr, 2009 | Y | Y | Y | Y | Y | N | N | N | Y | Y | L |

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| Richardson & James, 2017 | Y | Y | Y | N | Y | N | Y | Y | Y | Y | M |
| Sinden et al., 2013 | Y | Y | Y | Y | Y | Y | N | Y | Y | Y | M |
| Smith, 2017 | Y | Y | Y | Y | Y | Y | Y | Y | Y | Y | M |
| Turcotte, 2018 | Y | Y | Y | Y | Y | Y | Y | Y | Y | Y | M |
| Young et al., 2014 | Y | Y | Y | N | Y | N | Y | Y | Y | Y | M |

## Appendix G: SRL - Meta-ethnographic Constructs

| Third order construct *(developed by reviewer)* | Second order construct *(original author theme)* | Studies that include the second order construct |
|---|---|---|
| **Firefighters' subjective experiences of traumatic incidents** | | |
| ***Fear of the unknown*** | Not knowing what you are responding to | Brazil (2019) |
| | Preparedness | |
| | Mindset and switching moments | Dangermond (2022c) |
| | The first time | Dangermond (2022d) |
| | Fear of the unknown | Fullerton (1992)* |
| | Feeling unprepared for what they might face | Miller (2021) |
| ***Identifying with the victim*** | Responding to people you know | Brazil (2019) |
| | The local bond: It's a small town | Dangermond (2022c) |
| | Incidents involving someone the first responder knows | Dangermond (2022d) |
| | Personal association | |
| | Identification with the victims and the dead | Fullerton (1992)* |
| | Most stressful aspects | Haslam & Mallon (2003)* |
| | Incidents that trigger an emotional response | Herbert (2013) |
| | Incidents involving children | |
| | Experience of volunteer firefighters | Jahnke (2014) |
| | Stress: Injury to a child | McMahon (2010) |
| | Calls with traumatic events | Miller (2021) |
| | Emotional restraint / calls involving children | Richardson & James (2017) |
| ***Emotional detachment*** | Desensitised | Herbert (2013) |
| | Exposure to trauma: Multiple traumas and PSTD | Isaac (2021) |
| | Shelve or bury emotions and needs | Partnoff (2021) |
| | Avoidance and distraction | Young (2014) |
| ***Identity as 'helper' and incidents that challenge this*** | To wear a hero's cloak with pride – but also as a barrier | Abelsson (2018)* |
| | Unfolding of the first response | Dangermond (2022d) |
| | Media / public scrutiny | Herbert (2013) |
| | Avoidant-focussed coping style (emotion focused) | Firoozi (2019) |
| | Feelings of helplessness and guilt | Fullerton (1992)* |
| | Problem solving / futile situations | Richardson & James (2017) |
| | Earning respect | Sinden (2013) |
| | Identity | Turcotte (2017) |
| | How first responders view themselves in relation to the critical incident | |
| ***Post-traumatic stress*** | Critical incident stress | Brazil (2019) |
| | Bad calls stick | |
| | Frequency and period of time | Dangermond (2022d) |
| | Narrative section 1 | Ellis (2019) |
| | Concerned that others might be harmed | Firoozi (2019) |
| | Psychological fears | |
| | PTSD | |
| | Psychological responses | Haslam & Mallon (2003)* |

| | | |
|---|---|---|
| | Insomnia<br>Avoidance and flashbacks<br>Impact of traumatic incidents<br>Dealing with trauma<br>Different types of negative impact | <br><br>Herbert (2013)<br>Kling (2022)<br>Smith (2016) |
| **Peer Support** | | |
| ***Informal peer support*** | To be able to express and process – but always wanting to remember<br>To protect others by being mentally strong- but also showing fragility<br>Belonging<br>Camaraderie<br>Informal support<br>Joint coping – the added value of informal peer support<br>Impact on the collective<br>The conditions under which informal peer support takes place<br>Contact moments and knowing each other<br>Social support<br>Peer support<br>Education and cultural awareness<br>Coworkers and station culture<br>Teamwork<br>Debriefing as a crew / bonding experience<br>Peer support<br>Coping: Peer support<br>Engage in brotherhood and mentorship<br>Supports from colleagues<br>Differences in support from firefighters and non-firefighters<br>Social support<br>Emotion-focused and problem-focused methods: Social support | Abelsson (2018)*<br><br>Brazil (2019)<br><br>Conway (2021)<br>Dangermond (2022b)<br><br>Dangermond (2022c)<br><br>Dangermond (2022d)<br>Fullerton (1992)*<br><br>Herbert (2013)<br><br>Isaac (2021)<br><br>Kling (2022)<br>Jahnke (2014)<br><br>McMahon (2010)<br>Partnoff (2021)<br>Regehr (2009)*<br>Smith (2016)<br>Turcotte (2017)<br>Young (2014) |
| ***Humour*** | The importance of humour as part of the fire service culture<br>Black humour when coping with critical incidents<br>Empowering in the face of disasters<br>Humour<br>Adopt dark humour<br>Humour | Dangermond (2022a)<br><br>Firoozi (2019)<br>Turcotte (2017)<br>Partnoff (2021)<br>Young (2014) |
| ***Barriers to peer support: help seeking as showing vulnerability*** | Old Boys' Club<br>Stigma or taboo of showing one's vulnerability<br>Narrative section 2<br>Attitudes, bullying and lack of trust within the department<br>Stigma: thoughts and attitudes<br>Culture<br>Fear of stigma | Brazil (2019)<br>Dangermond (2022b)<br>Ellis (2019)<br>Isaac (2021)<br><br>McCarley Blaney (2021)<br>Partnoff (2021)<br>Richardson & James (2017) |

| | | |
|---|---|---|
| | Traditional culture vs emerging culture | |
| | Emotion suppression / expression at work | |
| | Negative attitudes of male counterparts: Impact on social inclusion and health behaviours | Sinden (2013) |
| | Barriers to using social support | Smith (2016) |
| **Other forms of coping** | | |
| ***Social support*** | Fire service humour and black humour are not intended for outsiders | Dangermond (2022a) |
| | Role of personal environment in processing incidents | Dangermond (2022c) |
| | Family stress | Firoozi (2019) |
| | Emotional support | Haslam & Mallon (2003)* |
| | Relationships | McCarley Blaney (2021) |
| | Coping: Partner support | McMahon (2010) |
| | The impact of shift work on social supports and family | Regehr (2009)* |
| | Emotion suppression / expression at home | Richardson & James (2017) |
| | Types of support utilised | Smith (2016) |
| | Family | Turcotte (2017) |
| ***Importance of training and exposure*** | Learning | Brazil (2019) |
| | Experience and the cumulative effect | Dangermond (2022c) |
| | Experience | Dangermond (2022d) |
| | Level of training | Fullerton (1992)* |
| | Training and skills | Herbert (2013) |
| | Exposure and experience | |
| | Knowledge | McCarley Blaney (2021) |
| | Personal resources | |
| | Lack of training | Miller (2021) |
| | Always be training | Partnoff (2021) |
| | Different types of positive impact | Smith (2016) |
| | Problem-focussed coping skills | |
| | Experience | Young (2014) |
| ***Formal support*** | Debriefs | Brazil (2019) |
| | Formal support | Conway (2021) |
| | Trust | |
| | Narrative section 3 | Ellis (2019) |
| | Official support | Haslam & Mallon (2003)* |
| | Counselling in the fire service | Herbert (2013) |
| | Formal support services | |
| | Mental health treatment | Jahnke (2014) |
| | CISD / CISM | |
| | The role of superiors on attitudes and practices | Kling (2022) |
| | Employee assistance programme | McMahon (2010) |
| | What psychologists need to know | |
| | Coping: CISD and CISM | |
| | Trust and safety | Partnoff (2021) |
| | Supports from management | Regehr (2009)* |
| | Attitudes towards professional mental health services | Smith (2016) |
| | Seeking help | Turcotte (2017) |

***Studies with low quality ratings***

**Service Improvement Project (SIP) Appendices**

**Appendix H: SIP - Audit approval**

## FW: Service Improvement Project Approvals

**From:** Rhodes Katie (RNU) Oxford Health <email address redacted>
**Sent:** Thu 02/09/2021 09:46
**To:** Nicholson Meghan (RNU) Oxford Health <email address redacted>

Good morning Meghan,

Your audit proposal has been approved.

Upon completion please provide a report of your findings.

Kind Regards,

**Katie Rhodes**
**Senior Team Administrator**
Buckinghamshire Mental Health Directorate
Oxford Health NHS Foundation Trust
The Whiteleaf Centre | Bierton Road | Aylesbury | HP20 1EG

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**From:** Bale Rob (RNU) Oxford Health <email address redacted>
**Sent:** 23 August 2021 11:31
**To:** Rhodes Katie (RNU) Oxford Health <email address redacted>
**Subject:** RE: Service Improvement Project Approvals

Morning
approved

Regards

*Rob*

**Dr Rob Bale**
Clinical Director and Consultant Psychiatrist, Oxford Health NHS Foundation Trust
Oxfordshire, BaNES, Swindon and Wiltshire Mental Health Directorate,
Oxfordhealth NHS Foundation Trust, John Sharich House, Slade Hospital,
Horsepath Driftway, Oxford
OX3 7JH

# Appendix I: SIP - Materials

## a) Information Sheet

**INFORMATION SHEET – for young people**

NHS Oxford Health NHS Foundation Trust

UNIVERSITY OF OXFORD

### Restrictive Practice on an Adolescent Inpatient Unit

Researcher: **Meghan Nicholson, Trainee Clinical Psychologist**

**Would you like to be involved in a research study?**

Before you decide if you would like to join in, read this leaflet carefully - it is important that you understand what the study is about and what it would involve if you took part. If something is not clear or you have more questions, we can discuss it with you. Thank you for reading this.

*What is **'research'**?*




Research is a way of looking for new information and new understanding. A person who does research is called a researcher. Research is often used for solving problems or increasing our knowledge.
With this research, we want to learn more about young people's experiences of 'restrictive practices' when staying in a mental health hospital.

*What is **'restrictive practice'**?*



It is important that the time spent in hospital is as safe and comfortable as possible for all young people. 'Restrictive practices' are used by staff to protect your safety on the unit and involves restricting people's:

- Ability to do everyday things
- Body or movement
- Freedom

For example, young people on the unit may have a member of staff with them throughout the day or night, be told they are not allowed to leave a room, be fed against their will, or be restrained in some way. This may be done to take control of a situation before it becomes dangerous.

It can be upsetting for the patients and staff involved and should therefore only be used when there is no other option. There may be times when something which could be thought of as 'restrictive' is requested by the young person themselves. For example, time spent in segregation from peers.

**INFORMATION SHEET – for young people**

No studies have yet asked young people about their thoughts and feelings about 'restrictive practice'. In this study, we will ask young people on the unit to tell us about their experiences of this.

*Why have I been invited to take part?*

You are invited because you are either: currently staying at the Highfield Adolescent Inpatient Unit, or have stayed there before. Anyone on the unit and those who have been discharged from the unit can take part.

*What will happen to me if I take part?*



- You will have the opportunity to **ask any questions** and then **sign a form** to say that you are happy to take part in the study *(if you are under 16 years old, your parent will need to sign a form for you).*



- You will be invited to a **one-to-one meeting** with the researcher in a private room on the unit (*you can have another staff member in the room with you, if you like*). You will be asked about your experiences of 'restrictive practices'. Feel free to answer openly and honestly – we would like to hear what you think.



- A **sound recording** will be made. This is to help the researcher remember what was said in the meeting. Only the researcher will hear this recording and it will be deleted after the research is finished.




- The entire meeting will take **no longer than 1 hour** but it can be split into two shorter meetings if you prefer.

- After this meeting, you will have your treatment as normal. You do not have to do anything else after this.

*Do I have to take part?*

No, you do not. It is your choice whether you want to take part and you can always change your mind. If you do not take part, this will not affect your treatment.

*Will taking part in this study help me?*

The study will not help you right now, but you may find it is a useful space to voice your thoughts and views about your experience on the unit

so far. It will increase our knowledge about what young people think about 'restrictive practice' and may benefit those who stay here in the future.

### *Is there anything to be worried about when taking part?*

The one-to-one meetings are not expected to be distressing or worrying. We hope to give you a space to tell us your views and your experiences. However, you may find that some of your experiences are upsetting or difficult to discuss, and so you **only need to tell us what you feel comfortable with**. If you do find the interview difficult, we would speak with you and the staff about how to support you.

### *What will happen if I don't want to take part in the research anymore?*

Just tell the researcher that you do not want to take part anymore. This is your choice and you do not have to give a reason.

### *Who should I ask if I have questions?*

You can get in touch with the researcher (or ask a member of staff to get in touch for you) -



**Meghan Nicholson**
**Trainee Clinical Psychologist**

**Oxford Institute of Clinical Psychology Training and Research**
Isis Education Centre, Warneford Hospital, Oxford

**If you are interested in taking part, there is some more detailed information on the next page.**

**INFORMATION SHEET – for young people**

## Part 2: Further Information

*Will my information be kept private and confidential?*




All your information will be kept private. The audio recording from the meeting will be captured on an iPad or laptop which is owned by the NHS, and then stored in a private online place called the 'cloud'. The recording will be given a random number so that your name is not stored with it. Once the research is finished, the recording will be deleted.

**We will only inform those who have a need to know if we are concerned about your safety or somebody else's safety.**

*What will happen to the results of this study?*




The researchers will talk to staff on the unit about the results of the study, so that we can think about how to do things better. The results of this study will then be written up and published so that people can read about it, but **we will not use your name or any private details about you in the report**. People reading this report will not be able to know who took part.

*Who is organising this study?*

This study is organised by Oxford Health NHS Foundation Trust in collaboration with the Oxford Institute of Clinical Psychology Training and Research, University of Oxford.

**Thank you for your time and for thinking about taking part in the study.**

## b) Consent Form – parents

**CONSENT FORM – for parents, carers and guardians**

Oxford Health NHS Foundation Trust

Participant Identification Number: _____

UNIVERSITY OF OXFORD

**Restrictive Practice on an Adolescent Inpatient Unit**

Name of Researcher: **Meghan Nicholson, Trainee Clinical Psychologist**

Please initial box

1. I confirm that I have read the information sheet for the above study. I have had the opportunity to consider the information, ask questions and have had these answered satisfactorily. ☐
2. I understand that my child's participation is voluntary and that I am free to withdraw my consent at any time without giving any reason, without my child's medical care or legal rights being affected. ☐
3. I agree for my child to take part in the above study. ☐

_____

Name of child/young person

| _____ | _____ | _____ |
|---|---|---|
| Name of parent, carer or guardian | Date | Signature |
| _____ | _____ | _____ |
| Name of Researcher seeking consent | Date | Signature |

Version control: 1.5 (February 2022)

## c) Consent form – patients

**CONSENT FORM – for young people**

Oxford Health NHS Foundation Trust

Participant Identification Number: _____

UNIVERSITY OF OXFORD

**Restrictive Practice on an Adolescent Inpatient Unit**

Researcher: **Meghan Nicholson, Trainee Clinical Psychologist**

1. I confirm that I have read the information sheet for the above study. I have had the opportunity to think about this carefully and have any questions answered. ☐
2. I understand that I do not have to participate if I do not want to, and that I can remove myself from the study at any time, without giving a reason, and without my care being affected. ☐
3. I agree to take part in the above study. ☐

| _____ | _____ | _____ |
|---|---|---|
| Name of Participant | Date | Signature |

| _____ | _____ | _____ |
|---|---|---|
| Name of Person seeking consent | Date | Signature |

Version control: 1.5 (February 2022)

## d) Debrief Sheet

### Participant Debrief Sheet – for young people

Oxford Health NHS Foundation Trust

**Restrictive practice on an adolescent inpatient unit.**

UNIVERSITY OF OXFORD

Thank you for being involved in this project.

We are doing this project because we want to hear more about young people's experiences of restrictive practices when staying at the Highfield unit. By telling us about your experiences and views, you have helped us to learn more about this.

*What happens now?*
Now that you have had your interview with the researcher, you do not need to do anything else. You can now return to your normal activities on the unit and have your treatment as normal.

*What will happen to the information collected from the interview?*
The results of this study will be written up and published so that people can read about it. The report may contain themes, words or phrases that you used in your interview, but **we will not use your name or any private details about you in the report**. Individuals beyond the researcher and staff at the Highfield unit will not be able to know who took part.

*What should I do if I need support?*
If you found this experience distressing or upsetting, please tell a member of staff on the unit, such as a member of your case team. They can speak to you about how best to support you.

**If something is not clear or you have more questions, you can ask a member of staff who is supporting you to contact the researcher:**

**Meghan Nicholson, Trainee Clinical Psychologist**
Oxford Institute of Clinical Psychology Training and Research (OXICPTR)
Email: *meghan.nicholson@oxfordhealth.nhs.uk*



**Thank you for taking part in this study.**

Version control: 1.5 (February 2022)

## Appendix J: SIP - Interview Schedule

### Development of the Interview Schedule

The questions were developed by the researchers in collaboration with key stakeholders, such as the ward modern matron, OHFT Patient Experience Lead, and a young people's patient focus group. Initial questions of interest were generated by the researchers based on clinical interest and the cognitive-behavioural model (i.e., ascertaining thoughts, feelings and behaviours, and any maintaining factors). Additional questions were added following a meeting with the ward's modern matron, at which point questions were added around patients' experiences where restrictive practice had been helpful, if any. Feedback from the OHFT Patient Experience Lead and focus group then refined and amended the questions to reduce any potential distress and ensure the acceptability of language.

Supplementary interview questions were incorporated into the interview schedule to introduce flexibility and responsiveness to the needs of each participant. The inclusion of these questions aligns with the recommendations made by the OHFT Patient Experience Lead, intended to mitigate potential participant distress, re-traumatisation, or iatrogenic harm. The questions were designed for more detailed exploration of patient's thoughts, feelings and behaviours experienced 'in the moment' when a RP is occurring. In the event of a participant referring to a specific RP incident, the interviewer sought consent before proceeding with supplementary questions. For participants who did not spontaneously mention specific incidents, the interviewer used clinical judgement to discern the appropriateness of exploring the incident further. This clinical judgement was informed by an assessment of the participant's level of distress and consent, conveyed through verbal and/or non-verbal communication.

**Interview Schedule**

**Interview time = 40-60 minutes**

**General Views About Restrictive Practice**

- Is restrictive practice used on the ward?
- When is it used? (I.e., is there a time when it happens more often?)
- Why do you think restrictive practice happens?
- How often does restrictive practice happen on the ward?
- Who does it get used for?
- Are restrictive practices used for some people on the ward and not for others?
- Trust policy says that restrictive practice should be used only as a 'last resort', what do you think about this?
- Is restrictive practice ever an appropriate response?
    a. *If YES -, when? And why?*
    a. *If NO – why not?*

**Personal Experiences** (*if appropriate, consider supplementary questions using clinical judgement*)*

- Can you tell me a bit about what happened?
- Was there anything helpful or unhelpful about the experience?
- How did it make you feel about yourself?
- How did it make you feel about the staff?
- How did it make you feel about the unit?
- Did it change anything about how you felt about your treatment, or care plan?

**Closing / Debrief**

- How are you feeling after talking about that? (Some people find talking about these kinds of experiences difficult, how did you find it?)
- Is there any way the staff can support you after talking about this?
- Do you have any questions for me?

***Supplementary Questions**

When did this happen?

**Antecedents**

- What was happening on the unit before this?
- What was going on for *you* at that time?
- What were you doing? What emotions were there? What thoughts were there?

**Beliefs**

- How would you describe this experience?
- What emotions were there? What thoughts were there?
- What do you think were the reasons for this happening?
- How did you feel about yourself whilst this was happening?
- How did that experience make you feel about the staff involved at the time?

**Consequences**

- How long did this situation last in total? When did it come to an end?
- How did you feel about yourself afterwards?
- Were there any physical after-effects?
- Did you receive any support afterwards?
    - *If YES* - Who from?
    - *If NO* - What did you do? What support would you have liked?
- What was the impact on your relationship with the staff/ staff member?
- Did anything else change afterwards as a result? (e.g., in your care plan, or your approach or attitude to treatment?)
- How helpful was the restrictive practice in this situation?
- Do you think something different could have happened? (How? What would this be?)

## Appendix K: SIP – Reflexive Thematic Analysis process

Firstly, the researcher familiarised themselves with the data by transcribing the audio and reading the transcripts several times. Familiarisation maps were created to facilitate this process and to stimulate initial thoughts about the dataset. Coding of transcribed interviews took place using the NVivo (12) software.

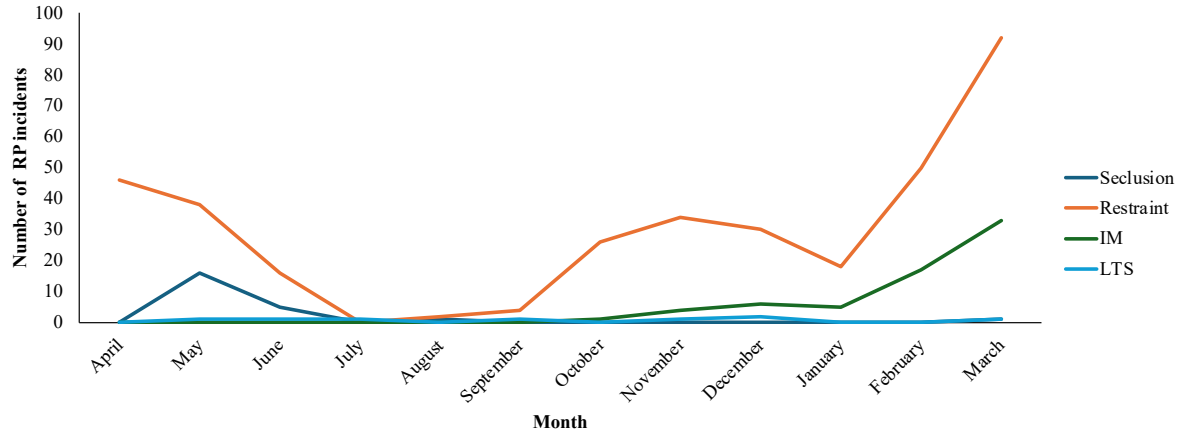
Transcripts were read line-by-line and codes were applied to any data that stood out as being relevant to the research question. Codes were then refined and added to as transcripts were revisited. The researcher then looked for patterns across the dataset codes, and these were grouped into themes. An inductive, bottom-up approach was used, where themes were constructed from the data themselves. The process was reflexive as the researcher considered how their previous experiences and values might influence the themes generated from the data.

An external supervisor then reviewed two transcripts which were selected at random and considered potential themes. A discussion was then had around the themes that had been generated, until a final thematic framework was agreed upon.

# Appendix L: SIP – Supplementary material

## Figure A

*Number of restrictive practice (RP) incidents per month, per incident type*




## Figure B

*Percentage of staff factors (vacancy rate, agency spend, staff turnover), per month*

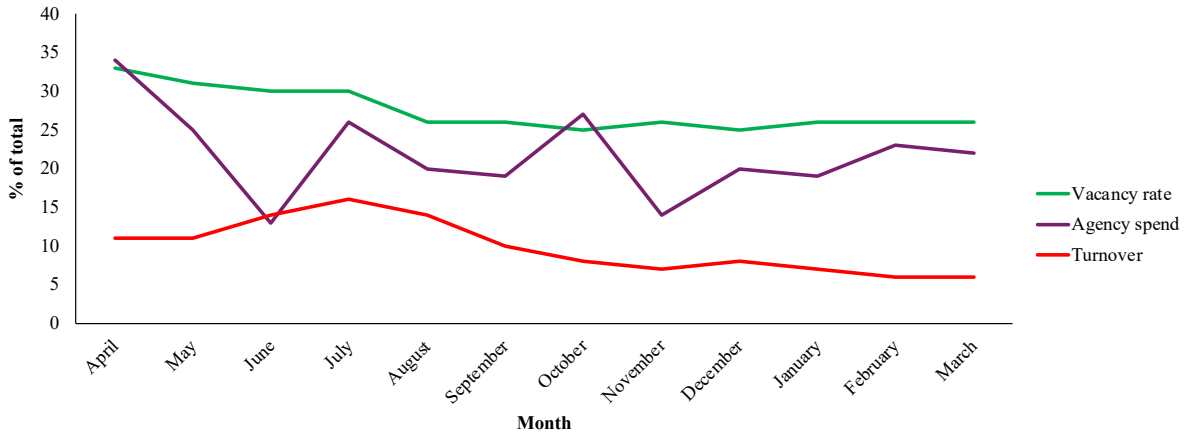


**Figure C**

*Number of restraint incidents, per day of the week*

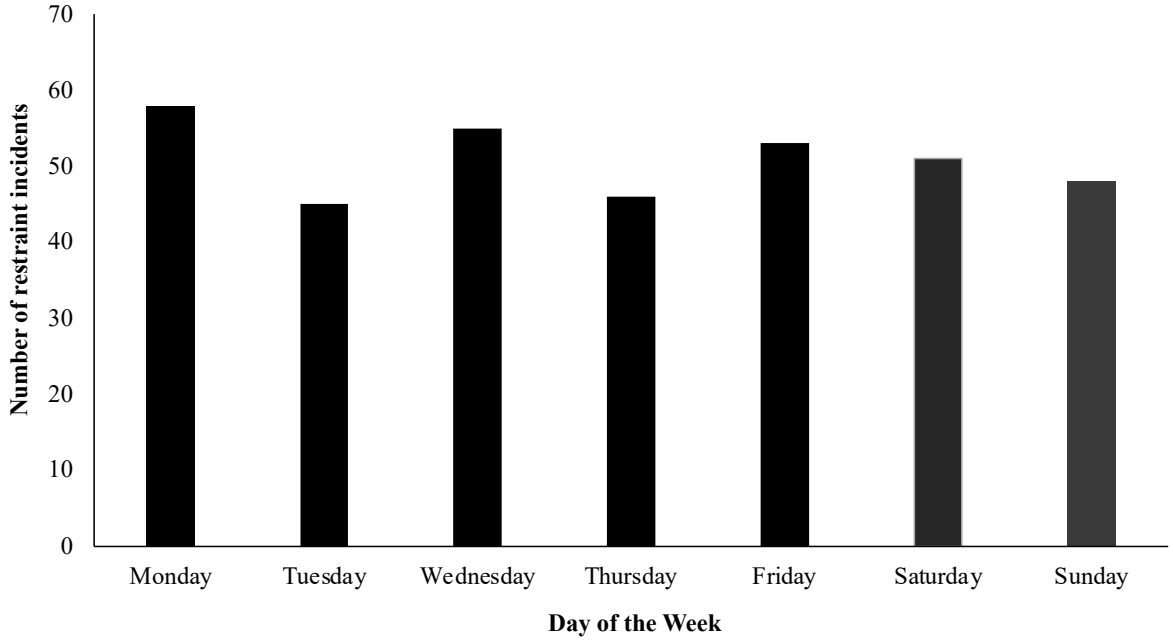



**Figure D**

*Number of seclusion incidents, per day of the week*

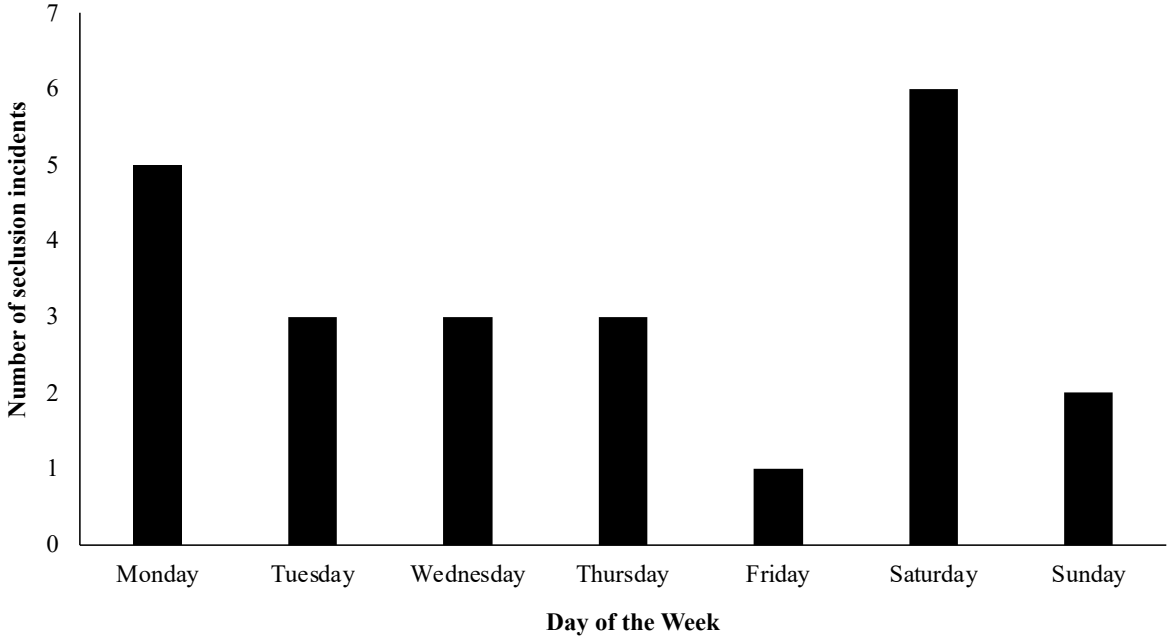


**Figure E**

*Number of rapid tranquilisation incidents, per day of the week*

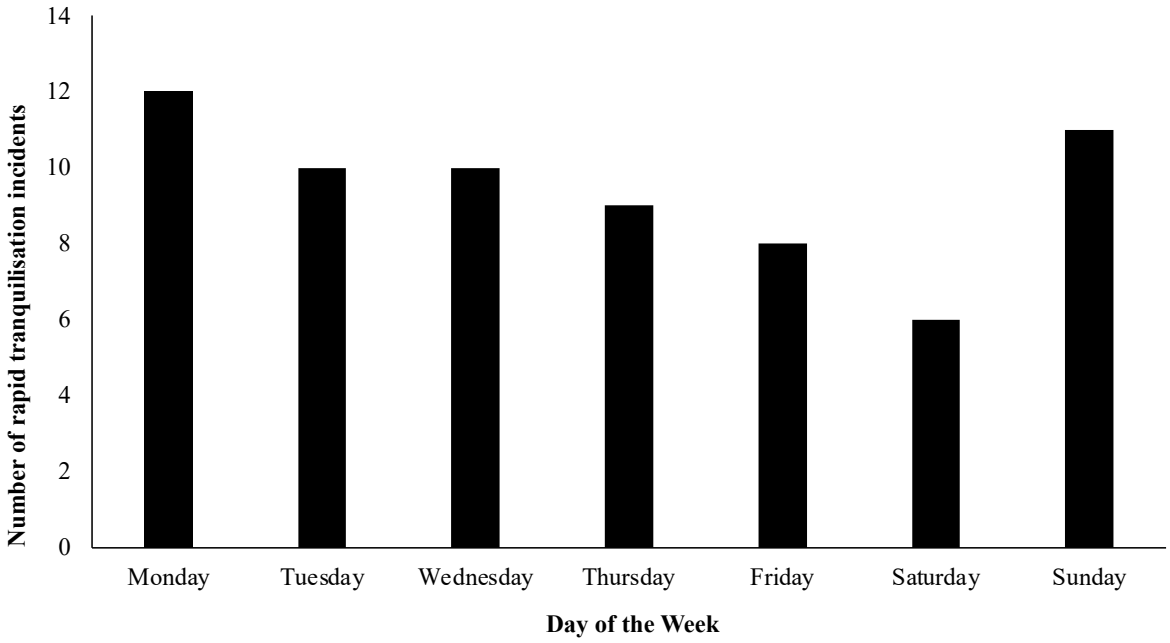



**Figure F**

*Number of restraint incidents each month, categorised by precipitant*

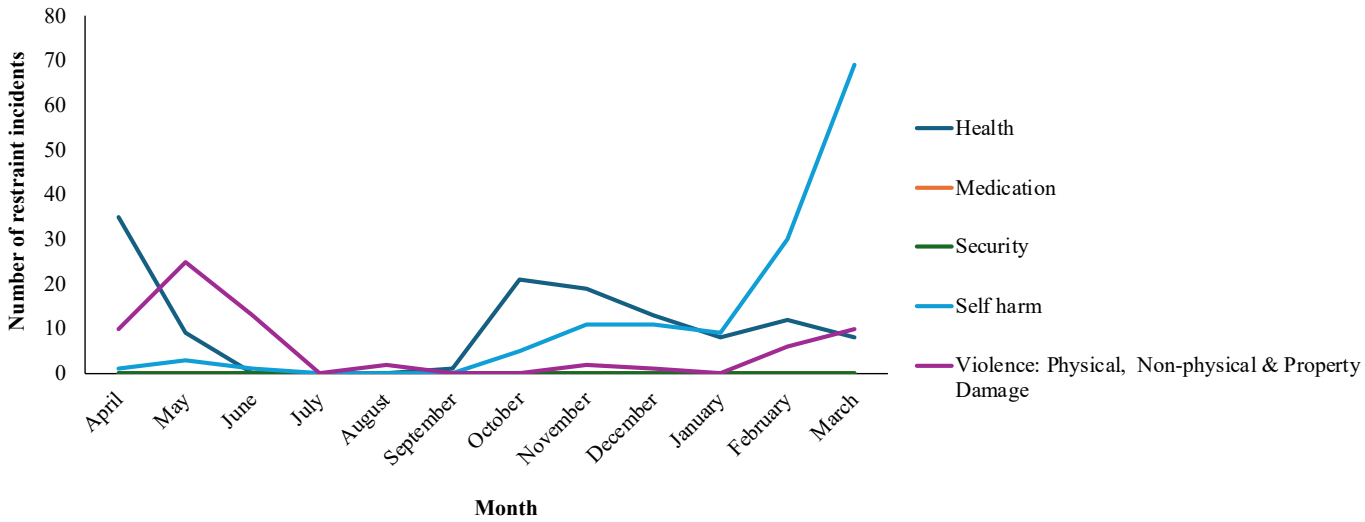


**Figure G**

*Number of high dependency unit (HDU) admissions, per month*

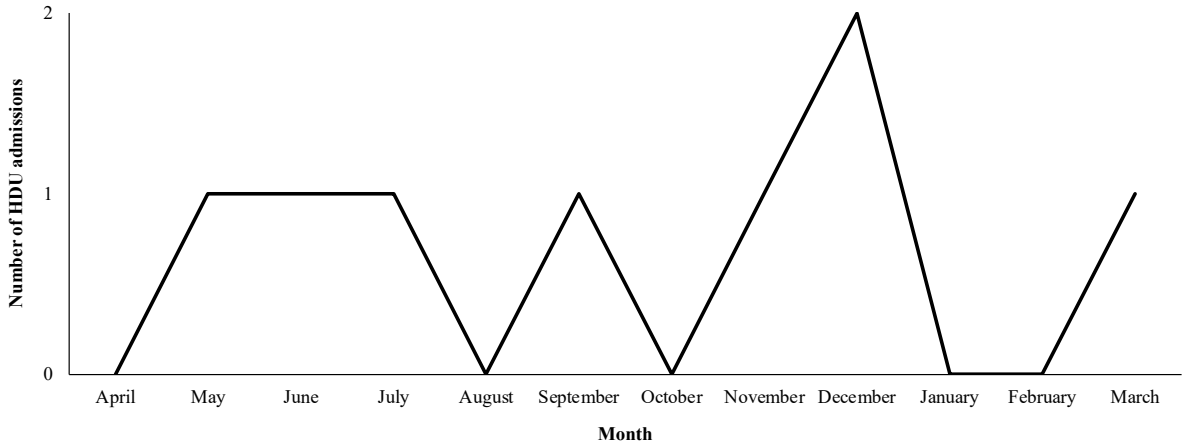
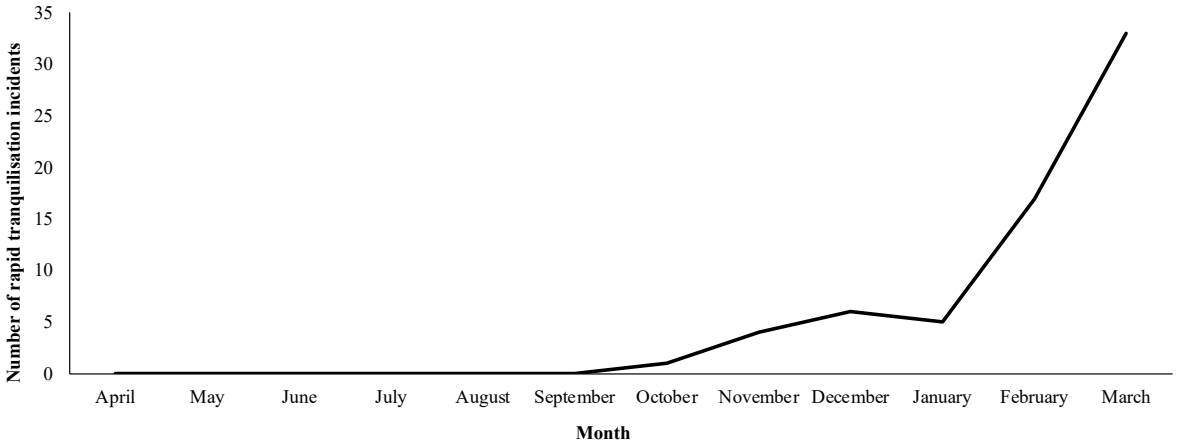



**Figure H**

*Number of rapid tranquilisation incidents, per month*



## Appendix M: SIP - Journal Submission Guide

### The Journal of Adolescence

The *Journal of Adolescence* is an international, broad based, cross-disciplinary journal that addresses issues of professional and academic importance concerning development between puberty and the attainment of adult status within society. Our focus is specifically on adolescent *development:* change over time or negotiating age specific issues and life transitions. The aim of the journal is to encourage research and foster good practice through publishing empirical studies, integrative reviews and theoretical and methodological advances. The *Journal of Adolescence* is essential reading for adolescent researchers, social workers, psychiatrists, psychologists, and youth workers in practice, and for university and college faculty in the fields of psychology, sociology, education, criminal justice, and social work.

Research Areas Encompassed:

- Adolescent development with particular emphasis on social, cognitive, and emotional functioning
- Resilience, positive development, and effective coping within the context of adolescent development
- Disturbances and disorders of adolescence, approached from a developmental perspective
- Public health approaches and interventions designed to reduce risk or support positive development.

JoA actively seeks papers that are strongly grounded in theory and have a clear developmental focus. We are particularly interested in research focusing on less studied populations or that examine contextual variation in developmental processes. In addition to empirical research articles, JoA also publishes systematic Review Articles and papers that focus on areas of methodological import.

The Journal publishes quantitative, qualitative, and mixed method research and welcomes systematic review articles and papers providing reviews or practical guidance on important or novel topics relevant to developmental methodology. We do not publish papers whose primary purpose is the validation of established measures in new cultural contexts. If required, additional words may be permitted to report such validations within a standard empirical research article.

### *Submission and Peer Review Process*

### Free format submission

*Journal of Adolescence* follows APA form for final publications (see format exceptions below). However, we will accept **Free Format submission** for a simplified and streamlined submission process. Before you submit, you will need:

- Your manuscript: this should be an editable file including text, figures, and tables, or separate files—whichever you prefer. All required sections should be contained in your manuscript, including title page, abstract, introduction, methods, results,

conclusions, and references. Figures and tables should have legends. Figures should be uploaded in the highest resolution possible. References may be submitted in any style or format, but must be consistent throughout the manuscript. Supporting information should be submitted in separate files. If the manuscript, figures or tables are difficult for you to read, they will also be difficult for the editors and reviewers, and the editorial office will send it back to you for revision. Your manuscript may also be sent back to you for revision if the quality of English language is poor.

- An ORCID ID, freely available at https://orcid.org. *(Why is this important? Your article, if accepted and published, will be attached to your ORCID profile. Institutions and funders are increasingly requiring authors to have ORCID IDs.)*
- The title page of the manuscript, including:
    - Your co-author details, including affiliation and email address. *(Why is this important? We need to keep all co-authors informed of the outcome of the peer review process.)*
    - Word count, excluding abstract, references, tables, figures or appendices.
    - Statements relating to our ethics and integrity policies. *(Why are these important? We need to uphold rigorous ethical standards for the research we consider for publication)* This includes:
        - data availability statement*
        - funding statement*
        - conflict of interest disclosure*
        - ethics approval statement*
        - patient consent statement
        - permission to reproduce material from other sources
        - clinical trial registration

* Required

Important: the journal operates a double-blind peer review policy. Please anonymize your manuscript and supply a separate title page file. Manuscripts that have not been anonymized will be returned. Please ensure that all comments have been removed from your manuscript prior to submission.

Once the submission materials have been prepared in accordance with the Author Guidelines, manuscripts should be submitted online at **https://wiley.atyponrex.com/journal/JAD**

For help with submissions, please contact: **joa.office@wiley.com.**

For technical help with the submission system, please review our **FAQs** or contact **submissionhelp@wiley.com**.

This journal does not charge submission fees.

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**Preprint policy:**

Please find the Wiley preprint policy **here.**

*Journal of Adolescence* will consider articles previously available as preprints for review. You may also post the submitted version of a manuscript to a preprint server at any time. We request that you update any pre-publication versions with a link to the final published article.

This Journal operates a double-blind peer review process. Authors are responsible for anonymizing their manuscript in order to remain anonymous to the reviewers throughout the peer review process (see "Main Text File" below for more details). Since the journal also allows posting of preprints, please note that if authors share their manuscript in preprint form this may compromise their anonymity during peer review.

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See the **Registered Reports Author Guidelines** for full details.

**Data Sharing and Data Availability**

This journal expects data sharing. Review **Wiley's Data Sharing policy** where you will be able to see and select the data availability statement that is right for your submission.

**Data Citation**

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- Maximum of six keywords, listed immediately after the abstract. Avoid general and plural terms and multiple concepts (avoid, for example, 'and', 'of'). Only abbreviations firmly established in the field may be eligible. Keywords will be used for indexing purposes.
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|---|---|---|---|---|
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| | | | | |
|---|---|---|---|---|
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# Theoretically Driven Research Project (TDRP) Appendices

## Appendix N: TDRP - Advertisements

11-17

**Can you help us learn more about young people's mental health?**

**Seeking people aged 11 to 18 years old to take part in a study**

This study involves completing an online questionnaire with questions about mental health experiences, such as:
- Worry
- Sadness
- Feeling 'zoned out', numb or detached from your body
- Experiences of trauma

**Scan the QR code or contact the researcher to take part:**



***Meghan Nicholson, Trainee Clinical Psychologist***
*meghan.nicholson@oxfordhealth.nhs.uk*
*Oxford Institute of Clinical Psychology Training and Research*

**Study title: The Impact of Traumatic Experiences on Dissociative Symptoms in Adolescents (IRAS ID: 304687)**

Oxford Health NHS
NHS Foundation Trust
UNIVERSITY OF OXFORD

18-24

**Can you help us learn more about young people's mental health?**

**Seeking people aged 18 to 25 years old to take part in a study**

This study involves completing an online questionnaire with questions about mental health experiences, such as:
- Worry
- Sadness
- Feeling 'zoned out', numb or detached from your body
- Experiences of trauma

**Scan the QR code or contact the researcher to take part:**



***Meghan Nicholson, Trainee Clinical Psychologist***
*meghan.nicholson@oxfordhealth.nhs.uk*
*Oxford Institute of Clinical Psychology Training and Research*

**Study title: The Impact of Traumatic Experiences on Dissociative Symptoms in Adolescents (IRAS ID: 304687)**

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## Appendix O: TDRP - Participant Information Sheet

**Study title: The Impact of Trauma on Dissociative Experiences in Adolescents**

We are asking whether you would like to be involved in a research study. Before you decide if you would like to join in, it is important that you understand what the study is about, why it is being done and what it would involve for you. Please read and think about this leaflet carefully. Also talk to your family or a member of your supporting staff about it, if you like. If something is not clear or you have more questions, we can discuss it with you. Thank you for reading this.

**Part 1 – to give you first thoughts about the research**

**Why are we doing this research?**

Traumatic events are incidents that cause physical, emotional, spiritual or psychological harm. It may be a single event (that happens once), or a series of events (that happens more than once). For example, someone may be involved in an assault, a car accident, or a natural disaster. They may be harmed in some way by someone close to them or witness an act of violence. Whether or not an experience or event is traumatic for someone depends on how it makes them feel as an individual. A person experiencing trauma may feel under threat and extremely frightened as a result. We know that traumatic events can have a negative impact on people's lives. Sometimes people go on to develop a symptom called 'dissociation'. This is where a person feels numb, disconnected from the world around them, or like their body is not their own. Research tells us that dissociation may be a way of coping with extremely stressful situations, including traumatic events. However, not all people go on to develop dissociation after a traumatic event. It may be that different types of traumatic events cause the body to respond in different ways. No studies have yet explored how specific aspects of traumatic experiences affect which people then go on to develop dissociation. In this study, we will be asking participants if they have experienced any traumatic events. If so, they will be asked some questions about what happened during these events and what it was like for them. They will also be asked about symptoms experienced after the traumatic event, such as dissociation. We are also inviting people to take part who have not had any traumatic events happen to them. This allows us to compare the two groups.

**Why have I been invited to take part?**

You have been invited because you are 11-24 years old, and currently under either a health (such as CAMHS within the NHS) or social care service (such as foster care or residential care). You may have experienced something traumatic, or you may have not – we are inviting all young people under these services to take part in the research.

**Do I have to take part?**

No, you do not. It is your choice whether you want to take part and you can always change your mind. If you do not take part, this will not affect any care or service that you are currently receiving.

**What will happen to me if I take part?**

Before you can answer the questions, you must press a button at the end of this form to say that you are happy to take part in the study. Once you have said that you are happy to take part, you will see some online questionnaires. These can be completed online using a computer, smartphone or tablet. If you would like to complete the questionnaires with someone else, an adult that you trust can support you, but it is important that you answer the questions yourself. Alternatively, a member of support staff (such as your care coordinator) or the researcher can help you if you would like. If you would like to complete the questionnaire with your care coordinator, please let them know. If you would like to complete the questionnaire with the researcher, please contact the researcher using the contact details on this form before going any further. The questionnaires will ask you about any traumatic events you may have experienced. If this is something you have experienced, you will be asked a small number of questions about the event itself, such as specifics about what it involved. In total, the questionnaires will take no longer than 30 minutes to complete. At the end, you will see a screen thanking you for your time. This screen will also have contact details for where you are able to access help and support, if required, after the study. After the questionnaires, you can go about your life as normal.

**Will taking part in this study help me?**

The study will not help you right now. It will increase our knowledge about young people's experiences of traumatic events and dissociation. The research may benefit young people who experience these things in the future.

**Is there anything to be worried about when taking part?**

The questionnaires ask a small number of questions about traumatic events that you may have experienced. It may be that answering these questions causes you distress. If you feel distressed (or you do not want to continue for any reason), you are able to stop the study at any time and seek support from a trusted adult or supporting staff member. If you still feel very distressed after the study has finished, please speak to a trusted adult in your life about how they can best support you. The end of the questionnaire has some information about who you can speak to, should you wish. If you are being supported by a researcher or staff member to complete the questionnaire, this person can talk to you about the support available. Your responses to the questionnaires are confidential – this means that we do not collect any information about your name or date of birth, and so we do not know who the responses belong to. Even if you are being supported by a researcher or staff member to complete the questionnaire, your responses will be confidential, as you will not be required to enter your name in the questionnaire. If the researcher is worried in any way about your safety or the safety of others, they may need to share this with a trusted adult in your life, such as a parent/carer/guardian or your named professional.

Because we do not know the identities of people who will complete this questionnaire online, we will be unable to take any further action based on your responses. To report an incident or seek support, please contact one of the following:

- A trusted and safe adult person in your life (such as a parent, family member, carer or guardian)
- A professional member of staff (such as a care coordinator, nurse, doctor or social worker)

- Childline – Telephone: 0800 1111 121 Counsellor Online Chat: www.childline.org.uk/get-support/1-2-1-counsellor-chat/
- National Society for the Prevention of Cruelty to Children (NSPCC) - Telephone: 0808 800 5000 Email: help@nspcc.org.uk
- Samaritans - Telephone: 116 123 Email: jo@samaritans.org Website: www.samaritans.org

**What will happen if I don't want to take part in the research anymore?**

Participating in this research is optional and you do not have to take part. Once you have started, if you do not want to take part anymore, you can withdraw at any time. If you are completing the questionnaire online, you can exit the questionnaire at any time by exiting on your web browser. If you are being supported by a researcher, your care coordinator or another trusted adult to complete the questionnaires, you can tell that person that you want to stop at any time. This is your choice and you do not have to give a reason. The responses that you give may be used in the analysis even if you withdraw. You can seek support from the places listed above even if you decide not to take part. Withdrawing from the research will not affect the care you receive in any way.

**Who should I ask if I have further questions?**

You can contact the researcher:
Meghan Nicholson - Oxford Institute of Clinical Psychology Training and Research (OXICPTR) Email: meghan.nicholson@oxfordhealth.nhs.uk

**Part 2: Further Information**
**This is more detailed information that you need to know if you are taking part.**

**Will my information be kept private and confidential?**

All your information will be kept private. The questionnaire will not ask for your name or date of birth. Once you have submitted the online questionnaire, data will be stored in a private online place called the 'cloud'. The information will be given a random number and will not have your name stored with it. If you have been supported by a researcher to complete the questionnaires, we will only inform those who have a need to know if we are concerned about your safety or somebody else's safety. Non-identifiable data will be stored for no longer than three years.

*You can find out more about how we use your information:*
*at www.hra.nhs.uk/information-about-patients/ our leaflet available from https://www.oxfordhealth.nhs.uk/privacy/ by asking or contacting the researcher meghan.nicholson@oxfordhealth.nhs.uk*
*by sending an email to Oxford Health Data Protection Officer at mark.underwood@oxfordhealth.nhs.uk*

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**What will happen to the results of this study?**

The results of this study will be written up and published so that people can read about it, but we will not use your name or any private details about you in the report. Individuals beyond the organisation and in the wider public will not be able to know who took part.

**Who is sponsoring this study?**

This study is sponsored by Oxford Health NHS Foundation Trust. Before any research is allowed to go ahead, it must be checked by a group called an ethics committee to make sure that the research is fair. This study has been reviewed and approved by a research ethics committee (IRAS ID: 304687).

**Thank you for your time and for thinking about taking part in the study**

Please add your initials to each box below to indicate that you agree to taking part in the study:

I have read and understand the study information. I have been given the opportunity to ask questions about the research and my participation.

I understand that my participation is voluntary and that I can withdraw at any time without giving reasons and without this affecting my existing care.

I agree to take part in the research.

# Appendix P: TDRP - Measures

## *Demographic Questions*

What gender do you identify as?

- ○ Male
- ○ Female
- ○ Non-binary / third gender
- ○ Prefer not to say

How old are you?

- ○ 11
- ○ 12
- ○ 13
- ○ 14
- ○ 15
- ○ 16
- ○ 17
- ○ 18
- ○ 19
- ○ 20
- ○ 21
- ○ 22
- ○ 23
- ○ 24

Which of these apply to you? *(select all that apply)*

☐ I am receiving support from community mental health services (child and adolescent or adult)

☐ I am a currently a looked after child (in a children's home or foster care)

☐ I am currently staying in hospital for my mental health

☐ I have a diagnosis of anxiety

☐ I have a diagnosis of depression

☐ I have a diagnosis of trauma and/or PTSD (post traumatic stress disorder)

☐ I have a diagnosis of borderline personality disorder or emerging borderline personality disorder

☐ I have a diagnosis that is not listed here (please describe below)

_____

☐ I have a diagnosis but I do not know what it is

☐ I have a diagnosis of schizophrenia / psychosis

☐ I am currently staying in hospital for my physical health

☐ None of the above

***Trauma Screener***

Q1: Have you ever experienced or witnessed a traumatic event?

*(A traumatic event is something that happens that a person finds scary, distressing or difficult. It may have happened once or more than once)*

- ○ Yes
- ○ No

Q2: Did it happen directly to you, or did you see it happen to someone else?

○ It happened to me

○ I saw it happen to someone else

Q3: What happened? *(select all that apply)*

☐ I was injured (slapped, punched, beaten up, or bitten) by a person or an animal

☐ I was hurt by a weapon or an object (such as a knife or a needle)

☐ The situation involved bodily fluid (such as blood, sperm, urine or faeces)

☐ My body was touching the person or thing that hurt me

☐ I was held down (by a person or an object) so that I could not move

☐ Someone put something inside my body (in my mouth, vagina or bottom)

☐ I was in severe pain

☐ Someone close to me died suddenly

☐ I was around during a war

☐ I saw someone get beaten up or seriously hurt

☐ I was there at the time of a serious accident (such as a car accident, terrorist attack, or natural disaster)

☐ I was physically touched, hurt or injured

Something else (please describe below)

How often did this happen?

- ○ One time only
- ○ Once per month or less
- ○ Once per week or more

How long did it last?

- ○ One day only
- ○ One month or less
- ○ One year or less
- ○ Longer than one year

How old were you when this happened?

*(if it happened more than once, please think about the first time it happened)*

- ○ Younger than 1
- ○ 1
- ○ 2
- ○ 3
- ○ 4
- ○ 5
- ○ 6
- ○ 7
- ○ 8
- ○ 9
- ○ 10
- ○ 11
- ○ 12
- ○ 13
- ○ 14
- ○ 15
- ○ 16
- ○ 17
- ○ 18
- ○ 19
- ○ 20

- ○ 21
- ○ 22
- ○ 23
- ○ 24

Thinking about when this happened, please indicate to what extent you agree with the following

*(if it happened more than once, please think about the worst time when it happened)*

| | Strongly Disagree | Somewhat disagree | Neither agree nor disagree | Somewhat agree | Strongly agree |
|---|---|---|---|---|---|
| I felt like I could not escape | ○ | ○ | ○ | ○ | ○ |
| I felt helpless | ○ | ○ | ○ | ○ | ○ |
| I felt powerless | ○ | ○ | ○ | ○ | ○ |
| I felt scared | ○ | ○ | ○ | ○ | ○ |
| I got a sudden or unexpected startle | ○ | ○ | ○ | ○ | ○ |
| I felt contaminated or dirty | ○ | ○ | ○ | ○ | ○ |
| I thought I would not survive | ○ | ○ | ○ | ○ | ○ |

During the experience, did you have any of the following *(select all that apply)*

- ☐ Aspects you cannot remember
- ☐ An 'out of body' experience (like you were not inside your own body)
- ☐ Seeing the event happening as someone else
- ☐ Feeling like you were not real

***Child Revised Impact of Event Scale – 8 item version (CRIES-8; P. Smith et al., 2003)***

Below is a list of comments made by people after stressful life events. Please mark each item showing how frequently these comments were true for you during the past seven days. If they did not occur during that time, please mark the ‘not at all’ box.

(If this is not applicable to you, please select 'not at all')

| | Not At All | Rarely | Sometimes | Often |
|---|---|---|---|---|
| Do you think about it even when you don't mean to? | ○ | ○ | ○ | ○ |
| Do you try to remove it from your memory? | ○ | ○ | ○ | ○ |
| Do you have waves of strong feelings about it? | ○ | ○ | ○ | ○ |
| Do you stay away from reminders of it (e.g. places or situations?) | ○ | ○ | ○ | ○ |
| Do you try not to talk about it? | ○ | ○ | ○ | ○ |
| Do pictures about it pop into your mind? | ○ | ○ | ○ | ○ |
| Do other things keep making you think about it? | ○ | ○ | ○ | ○ |
| Do you try not to think about it? | ○ | ○ | ○ | ○ |

***Impact of Event Scale - Revised (IES-R; Horowitz et al., 1979)***

Below is a list of difficulties people sometimes have after stressful life events. Please read each item, and then indicate how distressing each difficulty has been for you DURING THE PAST SEVEN DAYS with respect to (the event). How much were you distressed or bothered by these difficulties? (If not applicable to you, please select 'not at all').

| | Not At All | A little bit | Moderately | Quite a bit | Extremely |
|---|---|---|---|---|---|
| Any reminder brought back feelings about it | ○ | ○ | ○ | ○ | ○ |
| I had trouble staying asleep | ○ | ○ | ○ | ○ | ○ |
| Other things kept making me think about it | ○ | ○ | ○ | ○ | ○ |
| I felt irritable and angry | ○ | ○ | ○ | ○ | ○ |
| I avoided letting myself get upset when I thought about it or was reminded of it | ○ | ○ | ○ | ○ | ○ |
| I thought about it when I didn't mean to | ○ | ○ | ○ | ○ | ○ |
| I felt as if it hadn't happened or wasn't real | ○ | ○ | ○ | ○ | ○ |
| I stayed away from reminders about it | ○ | ○ | ○ | ○ | ○ |
| Pictured about it popped into my mind | ○ | ○ | ○ | ○ | ○ |
| I was jumpy and easily startled | ○ | ○ | ○ | ○ | ○ |
| I tried not to think about it | ○ | ○ | ○ | ○ | ○ |
| I was aware that I still had a lot of feelings about it, but I didn't deal with them | ○ | ○ | ○ | ○ | ○ |
| My feelings about it were kind of numb | ○ | ○ | ○ | ○ | ○ |
| I found myself acting or feeling as though I was back at that time | ○ | ○ | ○ | ○ | ○ |

| | | | | | |
|---|---|---|---|---|---|
| I had trouble falling asleep | ○ | ○ | ○ | ○ | ○ |
| I had waves of strong feelings about it | ○ | ○ | ○ | ○ | ○ |
| I tried to remove it from my memory | ○ | ○ | ○ | ○ | ○ |
| I had trouble concentrating | ○ | ○ | ○ | ○ | ○ |
| Reminders of it caused me to have physical reactions, such as sweating, trouble breathing, nausea, or a pounding heart | ○ | ○ | ○ | ○ | ○ |
| I had dreams about it | ○ | ○ | ○ | ○ | ○ |
| I felt watchful or on-guard | ○ | ○ | ○ | ○ | ○ |
| I tried not to talk about it | ○ | ○ | ○ | ○ | ○ |

***Adolescent Dissociative Experiences Scale (A-DES; Armstrong et al., 1997)***

These questions ask about different kinds of experiences that happen to people. For each question, choose a number that tells how much that experience happens to you. Choose a "0" if it never happens to you, choose a "10" if it is always happening to you. If it happens sometimes but not all of the time, choose a number between 1 and 9 that best describes how often it happens to you. When you answer, only tell how much these things happen when you HAVE NOT had any alcohol or drugs.

| | 0 - Never happens to me | 1 | 2 | 3 | 4 | 5 - Sometimes happens to me | 6 | 7 | 8 | 9 | 10 - Always happens to me |
|---|---|---|---|---|---|---|---|---|---|---|---|
| I get so wrapped up in watching TV, reading, or playing video games that I don't have any idea what's going on around me. | ○ | | | | | ○ | | | | | ○ |
| I get back tests or homework that I don't remember doing. | ○ | | | | | ○ | | | | | ○ |
| I have strong feelings that don't seem like they are mine. | ○ | | | | | ○ | | | | | ○ |
| I can do something really well one time and then I can't do it at all another time. | ○ | | | | | ○ | | | | | ○ |
| People tell me I do or say things that I don't remember doing or saying. | ○ | | | | | ○ | | | | | ○ |
| I feel like I'm in a fog or spaced out and things around me seem unreal. | ○ | | | | | ○ | | | | | ○ |
| I get confused about whether I have done something or only thought about doing it. | ○ | | | | | ○ | | | | | ○ |
| I look at the clock and realize that time has gone by and I can't remember what has happened. | ○ | | | | | ○ | | | | | ○ |
| I hear voices in my head that are not mine. | ○ | | | | | ○ | | | | | ○ |
| When I am somewhere that I don't want to be, I can go away in my mind. | ○ | | | | | ○ | | | | | ○ |
| I am so good at lying and acting that I believe it myself. | ○ | | | | | ○ | | | | | ○ |
| I catch myself “waking up” in the middle of doing something. | ○ | | | | | ○ | | | | | ○ |

| | | | |
|---|---|---|---|
| I don't recognise myself in the mirror. | ○ | ○ | ○ |
| I find myself going somewhere or doing something and I don't know why. | ○ | ○ | ○ |
| I find myself someplace and don't remember how I got there. | ○ | ○ | ○ |
| I have thoughts that don't really seem to belong to me. | ○ | ○ | ○ |
| I find that I can make physical pain go away. | ○ | ○ | ○ |
| I can't figure out if things really happened or if I only dreamed or thought about them. | ○ | ○ | ○ |
| I find myself doing something that I know is wrong, even when I really don't want to do it. | ○ | ○ | ○ |
| People tell me that I sometimes act so differently that I seem like a different person. | ○ | ○ | ○ |
| It feels like there are walls inside of my mind. | ○ | ○ | ○ |
| I find writings, drawings, or letters that I must have done but I can't remember doing. | ○ | ○ | ○ |
| Something inside of me seems to make me do things that I don't want to do. | ○ | ○ | ○ |
| I find that I can't tell whether I am just remembering something or if it is actually happening to me. | ○ | ○ | ○ |
| I find myself standing outside of my body, watching myself as if I were another person. | ○ | ○ | ○ |

| | | | |
|---|---|---|---|
| My relationships with my family and friends change suddenly and I don't know why. | ○ | ○ | ○ |
| I feel like my past is a puzzle and some of the pieces are missing. | ○ | ○ | ○ |
| I get so wrapped up in my toys or stuffed animals that they seem alive. | ○ | ○ | ○ |
| I feel like there are different people inside of me. | ○ | ○ | ○ |
| My body feels as if it doesn't belong to me. | ○ | ○ | ○ |

***Dissociative Experiences Scale Version 2 (DES-II; Carlson & Putnam, 2000)***

These questions ask about experiences that you may have in your daily life. We are interested in how often you have these experiences. It is important, however, that your answers show how often these experiences happen to you when you are not under the influence of alcohol or drugs.

To answer the questions, please determine to what degree each experience described in the question applies to you, and select the number to show what percentage of the time you have the experience. For example: 0% (Never) 10 20 30 40 50 60 70 80 90 100% (Always). There are 28 questions.

1. Some people have the experience of driving or riding in a car or bus or subway and suddenly realizing that they don't remember what has happened during all or part of the trip. Circle the number to show what percentage of the time this happens to you.

0% 10 20 30 40 50 60 70 80 90 100%

2. Some people find that sometimes they are listening to someone talk and they suddenly realize that they did not hear part or all of what was said. Circle the number to show what percentage of the time this happens to you.

0% 10 20 30 40 50 60 70 80 90 100%

3. Some people have the experience of finding themselves in a place and have no idea how they got there. Circle the number to show what percentage of the time this happens to you.

0% 10 20 30 40 50 60 70 80 90 100%

4. Some people have the experience of finding themselves dressed in clothes that they don't remember putting on. Circle the number to show what percentage of the time this happens to you.

0% 10 20 30 40 50 60 70 80 90 100%

5. Some people have the experience of finding new things among their belongings that they do not remember buying. Circle the number to show what percentage of the time this happens to you.

0% 10 20 30 40 50 60 70 80 90 100%

6. Some people sometimes find that they are approached by people that they do not know, who call them by another name or insist that they have met them before. Circle the number to show what percentage of the time this happens to you.

0% 10 20 30 40 50 60 70 80 90 100%

7. Some people sometimes have the experience of feeling as though they are standing next to themselves or watching themselves do something and they actually see themselves as if they were looking at another person. Circle the number to show what percentage of the time this happens to you.

0% 10 20 30 40 50 60 70 80 90 100%

8. Some people are told that they sometimes do not recognize friends of family members. Circle the number to show what percentage of the time this happens to you.

0% 10 20 30 40 50 60 70 80 90 100%

9. Some people find that they have no memory for some important events in their lives (for example, a wedding or graduation). Circle the number to show what percentage of the time this happens to you.

0% 10 20 30 40 50 60 70 80 90 100%

10. Some people have the experience of being accused of lying when they do not think that they have lied. Circle the number to show what percentage of the time this happens to you.

0% 10 20 30 40 50 60 70 80 90 100%

11. Some people have the experience of looking in a mirror and not recognizing themselves. Circle the number to show what percentage of the time this happens to you.

0% 10 20 30 40 50 60 70 80 90 100%

12. Some people have the experience of feeling that other people, objects, and the world around them are not real. Circle the number to show what percentage of the time this happens to you.

0% 10 20 30 40 50 60 70 80 90 100%

13. Some people have the experience of feeling that their body does not seem to belong to them. Circle the number to show what percentage of the time this happens to you.

0% 10 20 30 40 50 60 70 80 90 100%

14. Some people have the experience of sometimes remembering a past event so vividly that they feel as if they were reliving that event. Circle the number to show what percentage of the time this happens to you.

0% 10 20 30 40 50 60 70 80 90 100%

15. Some people have the experience of not being sure whether things that they remember happening really did happen or whether they just dreamed them. Circle the number to show what percentage of the time this happens to you.

0% 10 20 30 40 50 60 70 80 90 100%

16. Some people have the experience of being in a familiar place but finding it strange and unfamiliar. Circle the number to show what percentage of the time this happens to you.

0% 10 20 30 40 50 60 70 80 90 100%

17. Some people find that when they are watching television or a movie they become so absorbed in the story that they are unaware of other events happening around them. Circle the number to show what percentage of the time this happens to you.

0% 10 20 30 40 50 60 70 80 90 100%

18. Some people find that they become so involved in a fantasy or daydream that it feels as though it were really happening to them. Circle the number to show what percentage of the time this happens to you.

0% 10 20 30 40 50 60 70 80 90 100%

19. Some people find that they sometimes are able to ignore pain. Circle the number to show what percentage of the time this happens to you.

0% 10 20 30 40 50 60 70 80 90 100%

20. Some people find that they sometimes sit staring off into space, thinking of nothing, and are not aware of the passage of time. Circle the number to show what percentage of the time this happens to you.

0% 10 20 30 40 50 60 70 80 90 100%

21. Some people sometimes find that when they are alone they talk out loud to themselves. Circle the number to show what percentage of the time this happens to you.

0% 10 20 30 40 50 60 70 80 90 100%

22. Some people find that in one situation they may act so differently compared with another situation that they feel almost as if they were two different people. Circle the number to show what percentage of the time this happens to you. 0% 10 20 30 40 50 60 70 80 90 100%

23. Some people sometimes find that in certain situations they are able to do things with amazing ease and spontaneity that would usually be difficult for them (for example, sports, work, social situations, etc.). Circle the number to show what percentage of the time this happens to you.

0% 10 20 30 40 50 60 70 80 90 100%

24. Some people sometimes find that they cannot remember whether they have done something or have just thought about doing that thing (for example, not knowing whether they have just mailed a letter or have just thought about mailing it). Circle the number to show what percentage of the time this happens to you.

0% 10 20 30 40 50 60 70 80 90 100%

25. Some people find evidence that they have done things that they do not remember doing. Circle the number to show what percentage of the time this happens to you. 0% 10 20 30 40 50 60 70 80 90 100%

26. Some people sometimes find writings, drawings, or notes among their belongings that they must have done but cannot remember doing. Circle the number to show what percentage of the time this happens to you.

0% 10 20 30 40 50 60 70 80 90 100%

27. Some people sometimes find that they hear voices inside their head that tell them to do things or comment on things that they are doing. Circle the number to show what percentage of the time this happens to you.

0% 10 20 30 40 50 60 70 80 90 100%

28. Some people sometimes feel as if they are looking at the world through a fog, so that people and objects appear far away or unclear. Circle the number to show what percentage of the time this happens to you.

0% 10 20 30 40 50 60 70 80 90 100%

Total:

**DES Score:** ____
(Total divided by 28)

Downloaded from http://traumadissociation.com/des. Authors E.B. Carlson & F.W. Putnam have given permission for the Dissociative Experiences Scale to be copied, distributed or reproduced for research or clinical use.

***Revised Children's Anxiety and Depression Scale – 25 item version (RCADS-25; Ebesutani et al., 2012)***

Please select the word that shows how often each of these things happens to you. There are no right or wrong answers.

| | Never | Sometimes | Often | Always |
|---|---|---|---|---|
| I feel sad or empty | ○ | ○ | ○ | ○ |
| I worry when I think I have done poorly at something | ○ | ○ | ○ | ○ |
| I would feel afraid of being on my own at home | ○ | ○ | ○ | ○ |
| Nothing is much fun anymore | ○ | ○ | ○ | ○ |
| I worry that something awful will happen to someone in my family | ○ | ○ | ○ | ○ |
| I am afraid of being in crowded places (like shopping centres, the movies, buses, busy playgrounds) | ○ | ○ | ○ | ○ |
| I worry what other people will think of me | ○ | ○ | ○ | ○ |
| I have trouble sleeping | ○ | ○ | ○ | ○ |
| I feel scared if I have to sleep on my own | ○ | ○ | ○ | ○ |
| I have problems with my appetite | ○ | ○ | ○ | ○ |
| I suddenly become dizzy or faint when there is no reason for this | ○ | ○ | ○ | ○ |

| | | | | |
|---|---|---|---|---|
| I have to do some things over and over again (like washing my hands, cleaning, or putting things in a certain order) | ○ | ○ | ○ | ○ |
| I have no energy for things | ○ | ○ | ○ | ○ |
| I suddenly start to tremble or shake when there is no reason for this | ○ | ○ | ○ | ○ |
| I cannot think clearly | ○ | ○ | ○ | ○ |
| I feel worthless | ○ | ○ | ○ | ○ |
| I have to think of special thoughts (like numbers or words) to stop bad things from happening | ○ | ○ | ○ | ○ |
| I think about death | ○ | ○ | ○ | ○ |
| I feel like I don't want to move | ○ | ○ | ○ | ○ |
| I worry that I will suddenly get a scared feeling when there is nothing to be afraid of | ○ | ○ | ○ | ○ |
| I am tired a lot | ○ | ○ | ○ | ○ |
| I feel afraid that I will make a fool of myself in front of people | ○ | ○ | ○ | ○ |

| | | | | |
|---|---|---|---|---|
| I have to do some things in just the right way to stop bad things from happening | ○ | ○ | ○ | ○ |
| I feel restless | ○ | ○ | ○ | ○ |
| I worry that something bad will happen to me | ○ | ○ | ○ | ○ |

## Appendix Q: TDRP - Debrief Sheet

### DEBRIEF FORM - Dissociation in Adolescents

Thank you for being involved in this research.

We are doing this research because we want to learn more about how different types of traumatic events may be linked to a symptom called dissociation. By completing this questionnaire, you have helped us to learn more about this.

Now that you have filled in the questionnaire, you do not need to do anything else. The information that you have submitted will remain anonymous, which means that we do not know the identities of the people who have completed this questionnaire.

**If you found this experience distressing -**
Please talk to a trusted person in your life. You may want to let a parent, carer, friend, partner or staff member know how you are feeling so that they can know how best to support you.

**If you have been harmed by another person and would like to report it -**
Because we do not know the identities of the people who have completed this questionnaire, we are not able to take any further action based on your responses.

**To report an incident, please contact one of the following:**

- A trusted and safe adult person in your life (such as a parent, family member, carer or guardian)
- A professional member of staff (such as a care coordinator, doctor, social worker or a member of staff at your school or college)
- Childline – Telephone: 0800 1111 121 Counsellor Online Chat: www.childline.org.uk/get-support/1-2-1-counsellor-chat/
- National Society for the Prevention of Cruelty to Children (NSPCC) Telephone: 0808 800 5000 Email: help@nspcc.org.uk
- Samaritans Telephone: 116 123 Email: jo@samaritans.org Website: www.samaritans.org

**If you are in immediate risk of danger, please call the police on 999**

Thank you for taking part in the study.

If you have any further questions, please contact:
Meghan Nicholson
Oxford Institute of Clinical Psychology Training and Research (OXICPTR)
Email: meghan.nicholson@oxfordhealth.nhs.uk

## Appendix R: TDRP - Health Research Authority (HRA) Approval

The decision-making process around ethics and participant consent in this study is of note. The initial research proposal submitted via IRAS (Integrated Research Application System) to the NHS Health Research Authority (HRA) proposed that, due to the involvement of children under the age of 16 years, a separate procedure would occur for these participants.

Two separate Qualtrics surveys were proposed, one to be sent to participants under 16, and another to be sent to participants 16 years and over. The version of the survey for participants under 16 was to include a parent/carer/guardian information sheet and a parental consent checkbox. Parent/carer/guardians would then be asked to then pass the device to their child, so that the child could read the participant information sheet and provide assent. The version of the survey for participants of 16 years and over was to include the standard participant information sheet and then an informed consent checkbox (no parental/carer/guardian consent required). The patient's named clinician would be responsible for ensuring that the participant or their parent/carer/guardian received the correct version of the survey depending on the participant's age.

The study was then subject to full ethical review by Yorkshire and the Humber - Leeds East Research Ethics Committee (REC). During the ethical review panel meeting, the REC expressed concerns that the parent/carer/guardian consent procedure would be a barrier to young people's participation in this research, and that young people are able to consent for themselves to complete research, providing that they can understand information about what is involved. This is in line with HRA Guidance for research involving children (Health Research Authority, 2021).

The REC issued ethical approval subject to several amendments, one of which pertained to the parent/carer/guardian consent procedure. The specified amendment is outlined below:

| | **Ethical Review - Further Information required** |
|---|---|
| 1 | The Committee has commented as long as the young person is felt to be competent and able to consent for themselves, then they can consent. The Committee, therefore, do not think parental consent is necessary in addition to the young person's consent.<br>Further guidance can be found here: **Research involving children - Health Research Authority (hra.nhs.uk)** |

In response to the above requirement, an amendment to the study proposal was made as follows:

- Removed requirement for under 16s to have parental consent
- Creation of a single information sheet and consent checkbox, to be sent to all participants regardless of age
- Young people who are deemed to not be able to consent for themselves (by their care coordinators or another member of their care team) to be excluded from the study

This amended proposal was then granted ethical approval by the REC on 19th December 2022 (see letter below).

Miss Meghan Nicholson
Oxford Institute of Clinical Psychology Training & Research
Isis Education Centre, Warneford Hospital
Headington, Oxford, Oxfordshire
OX3 7JX

Email: approvals@hra.nhs.uk
HCRW.approvals@wales.nhs.uk

19 December 2022

Dear Miss Nicholson

**HRA and Health and Care Research Wales (HCRW) Approval Letter**

| | |
|---|---|
| **Study title:** | **The Impact of Traumatic Experiences on Dissociative Symptoms in Adolescents** |
| **IRAS project ID:** | **304687** |
| **Protocol number:** | **1** |
| **REC reference:** | **22/YH/0252** |
| **Sponsor** | **Oxford Health NHS Foundation Trust** |

I am pleased to confirm that **HRA and Health and Care Research Wales (HCRW) Approval** has been given for the above referenced study, on the basis described in the application form, protocol, supporting documentation and any clarifications received. You should not expect to receive anything further relating to this application.

Please now work with participating NHS organisations to confirm capacity and capability, in line with the instructions provided in the "Information to support study set up" section towards the end of this letter.

**How should I work with participating NHS/HSC organisations in Northern Ireland and Scotland?**
HRA and HCRW Approval does not apply to NHS/HSC organisations within Northern Ireland and Scotland.

If you indicated in your IRAS form that you do have participating organisations in either of these devolved administrations, the final document set and the study wide governance report (including this letter) have been sent to the coordinating centre of each participating nation. The relevant national coordinating function/s will contact you as appropriate.

Please see IRAS Help for information on working with NHS/HSC organisations in Northern Ireland and Scotland.

**How should I work with participating non-NHS organisations?**
HRA and HCRW Approval does not apply to non-NHS organisations. You should work with your non-NHS organisations to obtain local agreement in accordance with their procedures.

**What are my notification responsibilities during the study?**

The standard conditions document "*After Ethical Review – guidance for sponsors and investigators*", issued with your REC favourable opinion, gives detailed guidance on reporting expectations for studies, including:

- Registration of research
- Notifying amendments
- Notifying the end of the study

The HRA website also provides guidance on these topics, and is updated in the light of changes in reporting expectations or procedures.

**Who should I contact for further information?**
Please do not hesitate to contact me for assistance with this application. My contact details are below.

Your IRAS project ID is **304687**. Please quote this on all correspondence.

Yours sincerely,
Rachel Katzenellenbogen
Approvals Specialist

Email: approvals@hra.nhs.uk

*Copy to:* *Ms Natalia Jastrzebska, Oxford Health NHS Foundation Trust*

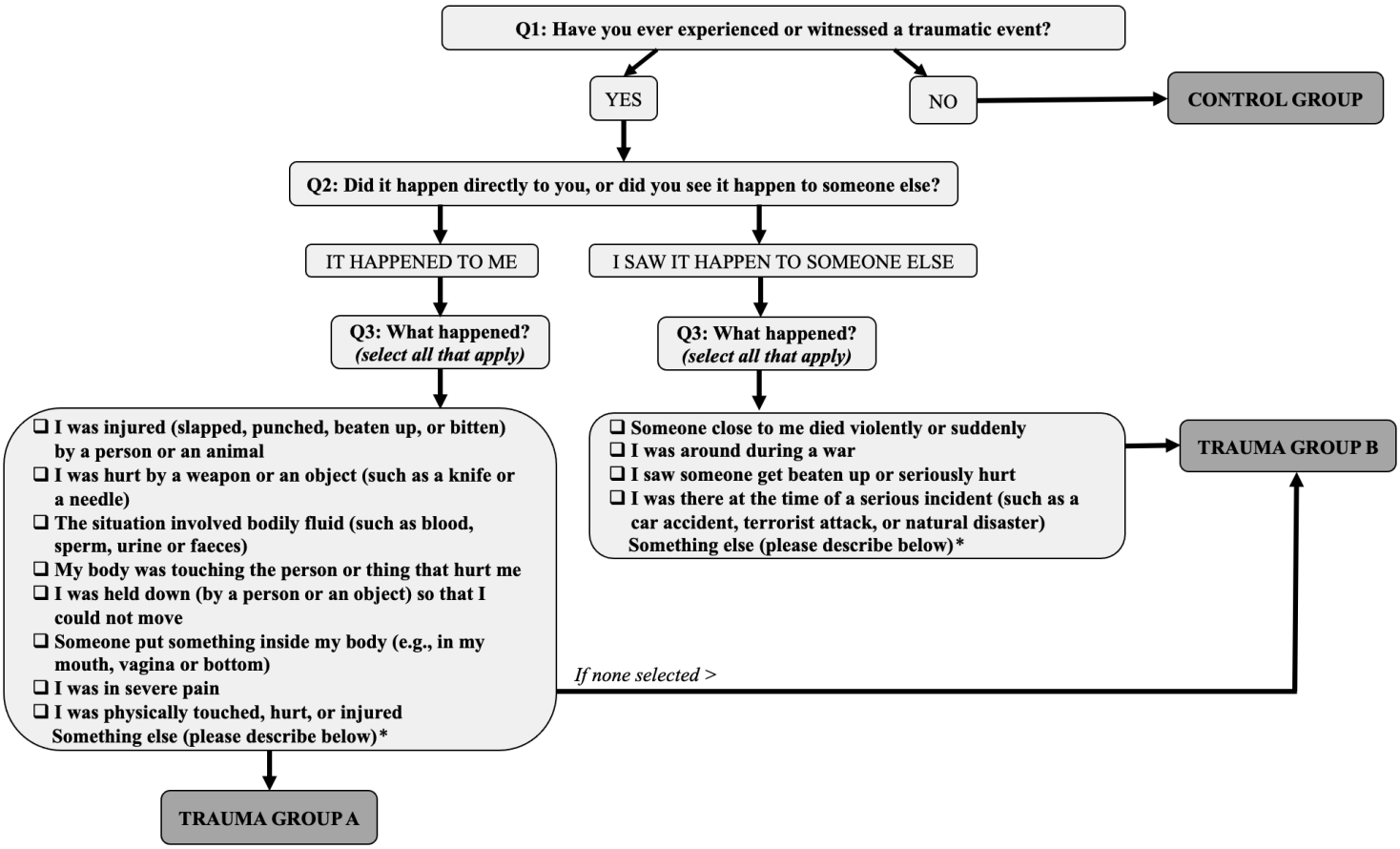
**List of Documents**

The final document set assessed and approved by HRA and HCRW Approval is listed below.

| *Document* | *Version* | *Date* |
|---|---|---|
| Copies of materials calling attention of potential participants to the research [304687 Recruitment Posters v1 September2022] | 1 | 29 September 2022 |
| IRAS Application Form [IRAS_Form_04102022] | | 04 October 2022 |
| Letter from sponsor [304687 OHFT Sponsorship Letter September2022] | 1 | 29 September 2022 |
| Non-validated questionnaire [304687 Trauma Screener v2 December2022] | 2 | 12 December 2022 |
| Non-validated questionnaire [304687 Questionnaire Demographics v1 October 2022] | 3 | 12 December 2022 |
| Other [Responses] | 1 | 12 December 2022 |
| Participant information sheet (PIS) [304687 Debrief Form v1 November2022] | | 30 November 2022 |
| Participant information sheet (PIS) [304687 PIS and CONSENT 16+ v1 October2022] | 3 | 19 December 2022 |
| Research protocol or project proposal [304687 Research Protocol v1 September 2022] | 2 | 12 December 2022 |
| Summary CV for Chief Investigator (CI) [Summary CV for Chief Investigator (CI)] | 1 | 29 September 2022 |
| Summary CV for supervisor (student research) [304687 Summary CV Supervisor 1 October2022] | 1 | 17 October 2022 |
| Summary CV for supervisor (student research) [304687 Summary CV Supervisor 2] | 1 | 18 October 2022 |
| Summary CV for supervisor (student research) [304687 Summary CV Supervisor 3] | 1 | 21 October 2022 |
| Validated questionnaire [304687 Questionnaire CRIES-8 v1 October 2022] | 1 | 17 October 2022 |
| Validated questionnaire [304687 Questionnaire RCADS-25 v1 October 2022] | 1 | 17 October 2022 |
| Validated questionnaire [304687 Questionnaire A-DES v1 October 2022] | 1 | 17 October 2022 |

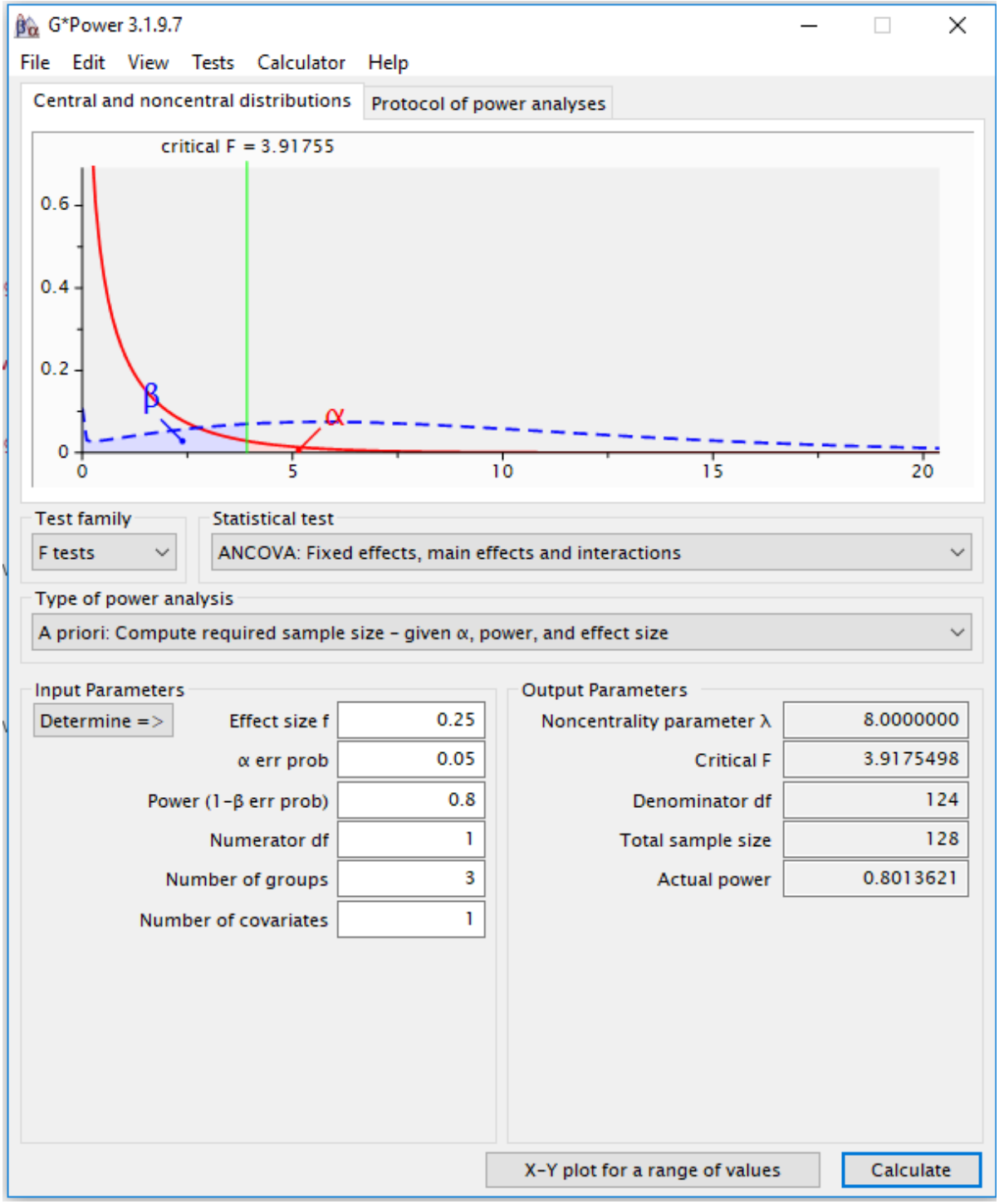
## Appendix S: TDRP - Trauma Screener Flowchart

Flowchart used to categorise participants into groups based on Trauma Screener response:




*Allocate based on information provided in free text box

## Appendix T: TDRP - Power analysis



# Appendix U: TDRP – Supplementary Material

**Figure A: z-score distribution of DES-II measure**

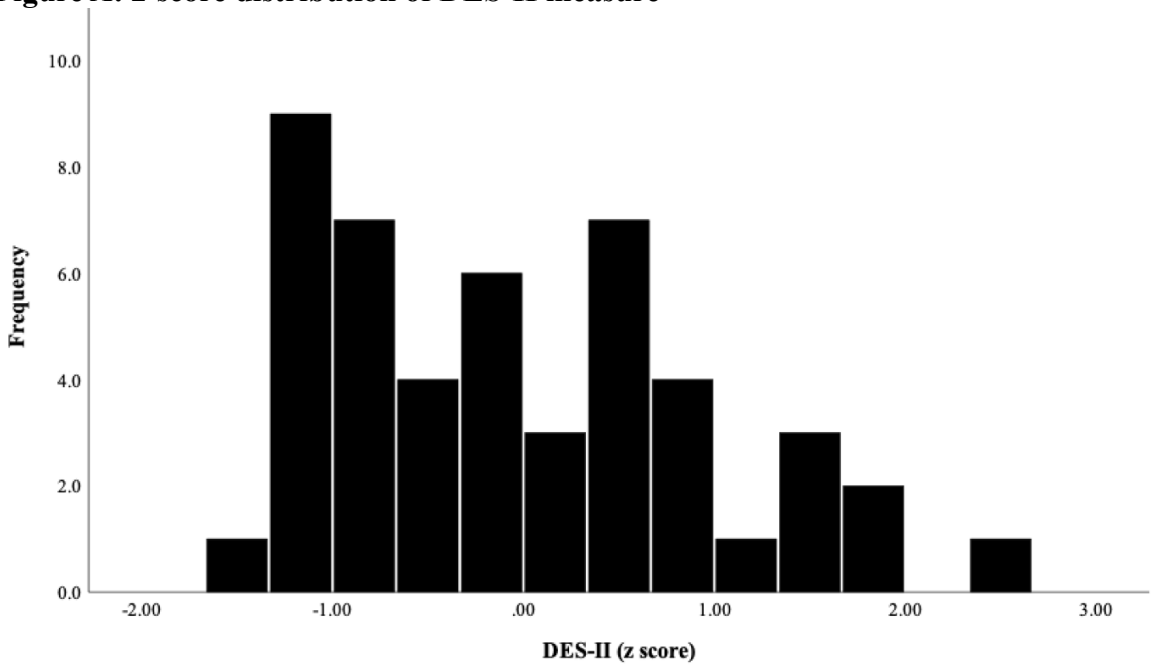
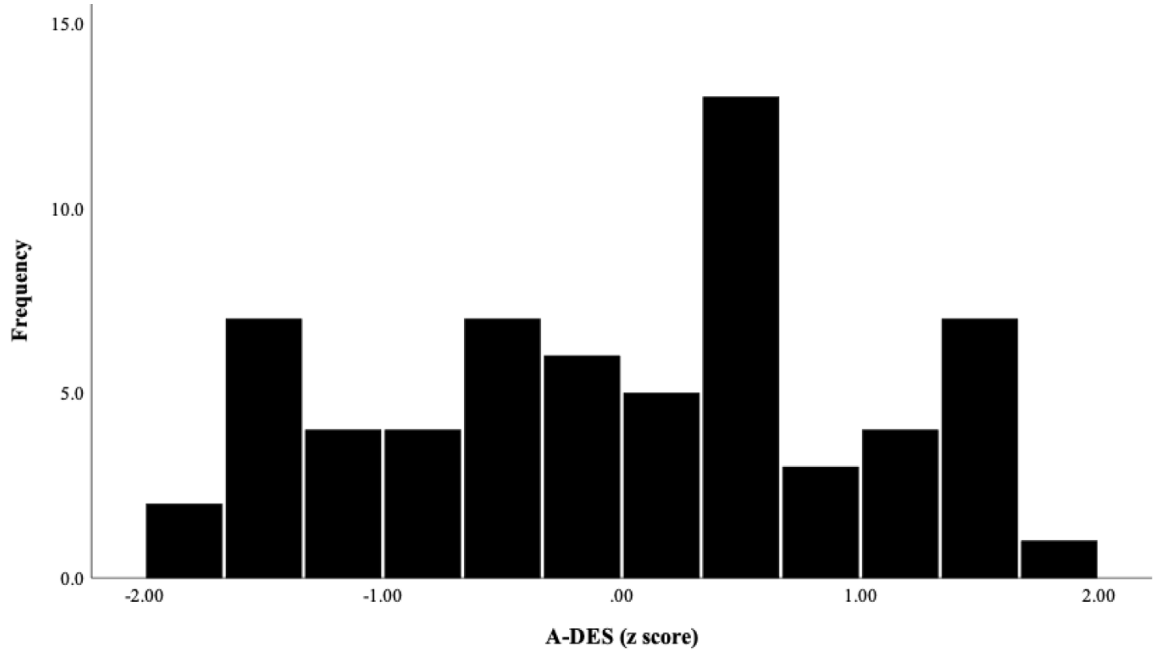



**Figure B: z-score distribution of A-DES measure**



## Appendix V: TDRP - Journal Submission Guide

### The Journal of Trauma & Dissociation

*Journal of Trauma & Dissociation* is an international, peer-reviewed journal publishing high-quality, original research. Please see the journal's Aims & Scope for information about its focus and peer-review policy.

Please note that this journal only publishes manuscripts in English.

*Journal of Trauma & Dissociation* accepts the following types of article:

- Regular Article (Review, Theory, Research, and Clinical Submission)
- Brief Report
- Commentary
- Letter to the Editor

*The Journal of Trauma & Dissociation* is the official scientific journal of the International Society for the Study of Trauma and Dissociation. *The Journal of Trauma & Dissociation*, dedicated to publishing peer-reviewed scientific literature on dissociation and trauma, seeks manuscripts on theory, basic science research, clinical treatment and research related to interpersonal trauma and/or dissociation in children and adults. The Journal welcomes contributions from a variety of different approaches including anthropological, cross-cultural, epidemiological, neurobiological, psychological, psychometric, psychotherapeutic, and social viewpoints.

All submissions must be accompanied by a JTD Author Assurance Form & Submission Checklist. Please complete the form and upload it with your submission using the file designation “Checklist”. Failure to complete the AAF&SC will result in the manuscript being return to “Draft” status. Be sure to complete ALL parts of the form as instructed; take care to circle the appropriate selection(s) for Item 3 on Part I and initial where required on Part II.

If you are submitting a Case Report, you must complete a Case Presentation Checklistas well. Please complete the form and upload it with your submission using the file designation “Checklist”.

### Open Access

You have the option to publish open access in this journal via our Open Select publishing program. Publishing open access means that your article will be free to access online immediately on publication, increasing the visibility, readership and impact of your research. Articles published Open Select with Taylor & Francis typically receive 95% more citations* and over 7 times as many downloads** compared to those that are not published Open Select.

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Please visit our Author Services website if you would like more information about our Open Select Program.

*Citations received up to 9th June 2021 for articles published in 2016-2020 in journals listed in Web of Science®. Data obtained on 9th June 2021, from Digital Science's Dimensions platform, available at https://app.dimensions.ai
**Usage in 2018-2020 for articles published in 2016-2020.

**Peer Review and Ethics**

Taylor & Francis is committed to peer-review integrity and upholding the highest standards of review. Once your paper has been assessed for suitability by the editor, it will then be single anonymous peer reviewed by two independent, anonymous expert referees, each delivering at least one report. If you have shared an earlier version of your Author's Original Manuscript on a preprint server, please be aware that anonymity cannot be guaranteed. Further information on our preprints policy and citation requirements can be found on our Preprints Author Services page. Find out more about what to expect during peer review and read our guidance on publishing ethics.

**Preparing Your Paper**

**Article Types**
*Regular Article (Review, Theory, Research, and Clinical Submission)*

- Should be written with the following elements in the following order: title page, abstract, text, references, tables and figures
- Should be no more than 5500 words, inclusive of:
    - Tables
    - References
    - Figure or table captions
- Should contain an unstructured abstract of 100-250 words.
- Additional submission instructions: https://dynamic.uoregon.edu/jjf/jtd/instructions.html

*Brief Report*

- Should be written with the following elements in the following order: title page, abstract, text, references, tables and figures
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