Thesis submitted in partial fulfilment of the degree of Doctor of Clinical Psychology (DClinPsych)

Date: 05/08/2025

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This thesis is entirely my own work except where otherwise identified.

Word Count

Systematic Review of the Literature (3,000-7,000): 7165

Service Improvement Project (3,000-5,000): 5476

Theory Driven Research Project (3,000-5,000): 5636

Executive Summary (500-1,000): 555

Connecting Narrative (up to 1,000): 961

Total word count: 19,793

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Word Count 2

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Abstracts

Systematic Review of the Literature: A Review of the Acceptability of Positive Behavioural Management Strategies in Managing Challenging Behaviours in Adolescent Residential Settings

Background: The effectiveness of positive behaviour support (PBS) in reducing challenging behaviours (CB) and the use of restrictive methods has been consistently shown in educational, community, and residential services for individuals with intellectual disabilities. Methods: As PBS continues to be adapted and implemented in various settings, the current systematic review aimed to synthesize the literature available on positive behavioural management strategies (PBMS) within adolescent residential services to understand its effectiveness and acceptability for young people (YP) and staff alike. An extensive search on five databases was conducted. Results: 20 studies were included in the review; 14 reported behavioural outcomes, six reported changes in restrictive practices, five reported changes in medication use, one included a quality of life (QoL) measure, three outlined YP views, and two explored the views of staff. Conclusions: PBMS show promise in the reduction of CB and restrictive practices, but further research is required considering the limited evidence base and statistical rigor.

Service Improvement Project: Staff Experiences of Post-Incident Support in an Adolescent Inpatient Unit

Background: Emotionally charged incidences are common within adolescent inpatient units. Support provided to staff members is therefore crucial to maintain the wellbeing and mental health of employees. **Aims**: This study explored staff members' experiences of post-incident support provided by an adolescent inpatient unit. **Methods**: A retrospective audit was conducted to collect information on types of incidences and proportion of restraint incidences accounted for by staff members in an Adolescent Inpatient Unit. 14 interviews were conducted with staff and themes were drawn out using thematic analysis. **Results**: Five themes were identified: experiences during incidences, contextual barriers, views of informal support, views of formal support, and validation and reassurance. Descriptive statistics were utilized to provide an overall account of the audit data. **Conclusions**: Staff valued practical, immediate debriefs, one-to-one support for emotional processing, and informal support from various avenues. Validation and reassurance were the central component underlying helpful aspects of support. Nevertheless, improvements can be made, and so recommendations were shared with service leads to improve the support provision.

Theory Driven Research Project: Understanding the relationship and impact of civilian reintegration, meaning making and moral injury in UK military veterans: A Theory-Driven Research Project

Moral injury (MI) is a psychological difficulty in which a person experiences significant shame and guilt as well as potential spiritual conflict following exposure to incidents that have transgressed one's moral code. Previous research indicates significant levels of MI among military veterans. Qualitative studies have alluded to the potential influence of reintegration difficulties on the onset of moral injury symptoms. However, no quantitative research has been conducted on this topic thus far. The current study aimed to understand the relationship between moral injury, meaning making, and reintegration into civilian life in UK military veterans exposed to potentially morally injurious events (PMIEs). Participants were recruited online via social media and were asked to complete an anonymous online survey including key questionnaires; 174 veterans participated in the study. It was hypothesized that those with high exposure to PMIEs would have lower levels of meaning making, less adaptive reintegration into civilian life, and higher symptoms of moral injury. Results showed significant group differences with all hypotheses supported. The clinical implications of this research are discussed within the context of the findings and its limitations.

Part 1: Systematic Review of the Literature

A Systematic Review of the Acceptability of Positive Behavioural Management Strategies in Managing Challenging Behaviours in Adolescent Residential Settings

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Word count: 7165 (tables/figures included as 100 words each)

Submission date: 05/08/2025

Target Journal: The International Journal of Positive Behavioral Support – *this peer-reviewed publication is dedicated to the research and practice of PBS and accepts entries from systematic reviews. This paper will be formatted to the author guidelines when submission is sought for publication.*

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Abstract

Background: The effectiveness of positive behaviour support (PBS) in reducing challenging behaviours (CB) and the use of restrictive methods has been consistently shown in educational, community, and residential services for individuals with intellectual disabilities. Methods: As PBS continues to be adapted and implemented in various settings, the current systematic review aimed to synthesize the literature available on positive behavioural management strategies (PBMS) within adolescent residential services to understand its effectiveness and acceptability for young people (YP) and staff alike. An extensive search on five databases was conducted. Results: 20 studies were included in the review; 14 reported behavioural outcomes, six reported changes in restrictive practices, five reported changes in medication use, one included a quality of life (QoL) measure, three outlined YP views, and two explored the views of staff. Conclusions: PBMS show promise in the reduction of CB and restrictive practices, but further research is required considering the limited evidence base and statistical rigor.

Introduction

The term CB rose from the intellectual disability literature to describe behaviour which can harm oneself or others and negatively impacts QoL (NHS, 2024a). These can include aggression, suicidal acts, and self-harm which are common in mental health residential settings amongst YP and have been shown to lead to poorer outcomes including longer psychiatric admission (Dean et al., 2008; Dean et al., 2010; Zhand, Matheson, & Courtney, 2016; Bulgari et al., 2018; Kipoulas, Berzengi, & Kyriakopoulos, 2020).

To manage such behaviours, services have utilised restrictive practices such as seclusion, restraint, and medication as well as restricting access to activities or belongings (Chung et al., 2023). While restrictive practices serve a purpose, particularly for dangerous, high-risk behaviours (Department of Health, 2014), research has consistently reported the negative consequences associated with them. Restrictive interventions have been shown to lead to negative outcomes including risks to physical and mental health, behaviour severity increasing, and on occasion, death (Nunno, Holden, & Tollar, 2006; Nielson et al., 2021). Furthermore, these practices are disproportionately used with younger children, black/African American individuals, or those with diagnoses such as PTSD, personality disorders, and/or oppositional defiant disorder (Roy et al., 2021, Czernin et al., 2024).

This has led to a nation-wide push to reduce restrictive practices by encouraging clinicians to use the “least restrictive method” for behaviour management, and for restrictive practices to only be utilized under “limited, legally justified, and ethically sound circumstances” (Care Quality

Commission, 2022 pp.9). PBS emerged when concerns arose regarding the consequences of utilizing restrictive practices for people with intellectual disabilities (Johnston et al., 2006). PBS was notably described by Horner and colleagues in 1990. It is a person-centred multi-component framework rather than a specific intervention that was developed utilizing the principles of applied behavioural analysis (ABA; Gore et al., 2013). At its core it holds that all behaviours have a function or meaning aiming to support people to learn new skills, increase QoL, and reduce restrictive strategies (The British Psychological Society, 2017). As a result, it sees CB as a strategy that is developed to communicate a specific need or emotion that is not being met (Department of Health, 2014). PBS includes the implementation of an individual plan created based on outcomes of a functional assessment (FA). A FA consists of the identification of triggers, consequences, and underlying function of a particular behaviour (Gresham, Watson, & Skinner, 2001). Understanding and creating change in one's environment allows an individual to interact with others differently, reduce the CB, and improve their own and others' QoL (Carr et al., 2002).

While originally developed for intellectual disabilities-specific contexts, PBS has been successfully adapted and implemented with various populations and within different settings including individually with clients and within a tiered system of increasing intensity such as school-wide or facility-wide positive behaviour intervention and support (SW-PBIS; FW-PBIS) (Gore et al., 2013). Positive behaviour intervention and support (PBIS) is a tiered strategy for early intervention and prevention of CB which has most notably been applied in schools by "alter[ing] the organizational school context to implement enhanced procedures and systems to guide data-based decisions related to student behaviour problems and academics" (Bradshaw &

Waasdorp, 2012 pp.1137). PBIS works at a preventative level by making system-wide changes to the YP's environment and setting positive behavioural expectations within a tiered system to support YP with increasing CB (Reynolds et al., 2016). Within the higher tiers, when YP are identified as having additional needs, an individualized PBS plan is implemented based on a detailed FA (Centre on PBIS, 2014; Yeung et al., 2016). Therefore, PBS and PBIS share underlying principles that are applied in different contexts with a specific focus placed on service-wide prevention and management of CB within the PBIS framework. PBIS has not only been applied to educational settings but also within justice/detention centres (Grasley-Boy et al., 2021). The term positive behavioural management strategies (PBMS) will henceforth be utilized to capture the variety of PBS implementations, including PBIS. PBMS can take many shapes and be applied to various contexts. However, key aspects include a data-driven, collaborative approach which considers a person's environment and how it impacts behaviour (Gore et al., 2013). This is in-line with NICE guidelines (2015) for CB management.

Research suggests positive outcomes when implementing PBS within intellectual disabilities settings including for individuals with comorbid intellectual disabilities and Autism (Iemmi, Knapp, & Brown, 2016, Beqiraj et al., 2022). PBS has recently been adapted for application in contexts for which it was not originally designed and its effectiveness has been investigated and established in educational (Goh & Bambara, 2012) and adult services (Whincup & Penny, 2024). A systematic review on the effectiveness of PBS in community and residential mental health settings for adults concluded that PBS was successful in reducing CB and improving QoL (Whincup & Penny, 2024). Additionally a study conducted in a medium secure adult forensic unit found positive outcomes in CB management which were sustained at follow-up (Davies et

al., 2019). However, to date, there has been no systematic review conducted to explore the literature relating to the effectiveness and applicability of PBMS in adolescent residential samples. One review (LaVigna & Willis, 2012), looked into the efficacy of PBS within institutional settings and alluded to the potential positive effects of PBS for YP. However, this review was not conducted in a systematic manner, is now 12 years old, and included studies looking at both YP and adult populations.

Aim

The aim of the current study was to collect and synthesize the research available to understand the effectiveness and acceptability of PBMS in managing CB in adolescent residential settings. Residential settings were described by the authors as any setting wherein the YP resides away from their family home most of the time, including inpatient psychiatric units, residential homes/schools, juvenile justice settings, and partial hospitals in which YP return to sleep in their own home. Due to PBS being widely adapted, it was the aim of this review to maintain an inclusive definition to not limit the research found. Therefore, PBMS were included to allow for studies which may have utilized PBS principles. Elements that were considered important to the PBS framework when reviewing the studies included in the review, can be found in Table 1.

This review's findings will prove useful in the design and implementation of behaviour management strategies across adolescent residential settings. In fact, guidance for Psychiatric Intensive Care Units for YP include references to treatments aimed at reducing CB using the least restrictive method (National Association of Psychiatric Intensive Care and Low Secure

Units, 2015; NHS, 2024b). Therefore, an understanding of the PBMS literature might support services to decide whether PBMS is an effective framework to achieve service goals.

Table 1: Key PBS Framework/Strategies

Values	- Intervention aimed at reducing behaviours that challenge - Improving QoL - Reduction of restrictive measures - Collaboration - Skill building with patient and/or family
Theory and evidence base	- Understanding that behaviours that challenge serve a function (this can be demonstrated with the mention of a FA, reference to ABA, or within the introduction if it is clear that the authors held this position in mind) - Includes interventions aimed at supporting change in the environment of the YP
Process	- Collection and processing of data is central - Monitoring of outcomes over time - Proactive and reactive strategies - *Functional assessment

[1] FA is preferrable but doesn't have to be formally outlined if there is a general understanding that behaviour serves a function from literature/methods (e.g. understanding triggers, environmental changes etc.).

[2] Gore et al's (2013) was utilized to identify key PBS components.

Methods

This systematic review was registered on PROSPERO (CRD42023427743) and has followed the PRISMA (2020; Page et al., 2020) checklist to ensure there is transparency and replicability of the study.

Search Strategy

The search criteria were developed in collaboration with the supervisors of the project and with the assistance of the librarians at Oxford Health NHS Foundation Trust.

1. Adolescen* or youth* or "young person" or "young people" or teen* or child* or "under 18" or Minor* or Juvenile* or boy* or girl* or pediatric* or Paediatric*
2. PBS or "positive behavio* support" or "positive behavio* intervention" or "behavio* manage*" or "functional analysis" or "behavio* analysis" or "applied behavio* analysis" or "behavio* support*" or PBIS or "positive behavio* intervention support" or "modified positive behavioral interventions and support" or MPBS or M-PBS
3. Aggression or aggressive* or violence or violent or "challenging behavio*" or "behavio* that challenge*" or "behavio* of concern" or "disruptive behavio*" or Behavio* or anger or Angry or "conduct disorder*" or Disruptive" or rage* or agonistic or fight* or misconduct* or misbehavio*
4. Inpatient* or "inpatient unit*" or "inpatient ward*" "psychiatric ward*" or "psychiatric unit*" or "psychiatric hospital*" or "residential care" or "residential school*" or "secure setting*" or "residential unit*" or PICU or "psychiatric intensive care unit" or "pediatric

mental health unit*" or Hospital* or "group home*" or "institutional school*" or "residential treatment" or GAU or "general adolescent unit" or "borstal young offender* institute*" or "secure CAMHS" or "secure child and adolescent mental health service*" or "forensic CAMHS" or "forensic child and adolescent mental health service" or "juvenile detention" or "low-secure unit*" or "residential program*"

Good practice is to utilize the thesaurus and medical subject headings (MeSH) terms to identify all relevant papers when conducting a search (Siddaway, Wood, & Hedges, 2019). However, not all databases have the same categorization of words, and it was therefore not possible to utilize the same MeSh/thesaurus terms for all searches. Each search can be found in Appendix A. Five databases, PsycINFO, EMBASE, Medline, Web of Science, and Scopus were searched. These included grey literature which were eligible for inclusion. All papers were downloaded, and duplicates were removed utilizing EndNote. Screening occurred in stages; titles, abstracts, and full-text screening based on the inclusion and exclusion criteria outlined below. Data-extraction of the included studies was likewise conducted, and their references were searched. The search was re-run in April of 2025, limiting by year (2024-2025) for additional studies eligible for inclusion.

Inclusion and Exclusion criteria

The inclusion and exclusion criteria were decided upon with the study's supervisors to ensure all relevant papers were included. Uncertainty regarding whether a study met criteria was discussed with the research team on a case-by-case basis

Inclusion criteria:

- Adolescents: 12-18 years old (where individual age was not available, mean age between 12-18 was utilized).
- Outcome studies: qualitative or quantitative
- Outcome measures including change in behaviour (frequency, severity, referrals), change in use of restrictive interventions, change in medication (such as PRN), change in QoL, or acceptability for staff and/or YP.
- Residential settings including, but not limited to, group homes, residential schools, inpatient units, partial hospitals, forensic juvenile centres, PICUs.
- Intervention including PBMS with/without controls (waitlist, treatment as usual, active control, pre/post-intervention scores etc).

Exclusion criteria:

- Studies of individuals with acquired brain injury or physical health difficulties
- Studies of adult populations (if studies include young adults but the mean age fell between 12-18, these were considered for inclusion on a case-by-case basis).
- Studies of children with mean age under 12-18
- Community (non-residential) settings
- Severe ID
- Interventions without the key elements of PBS
- Systematic reviews, conference presentations, process reviews, no outcomes.

Selection of articles

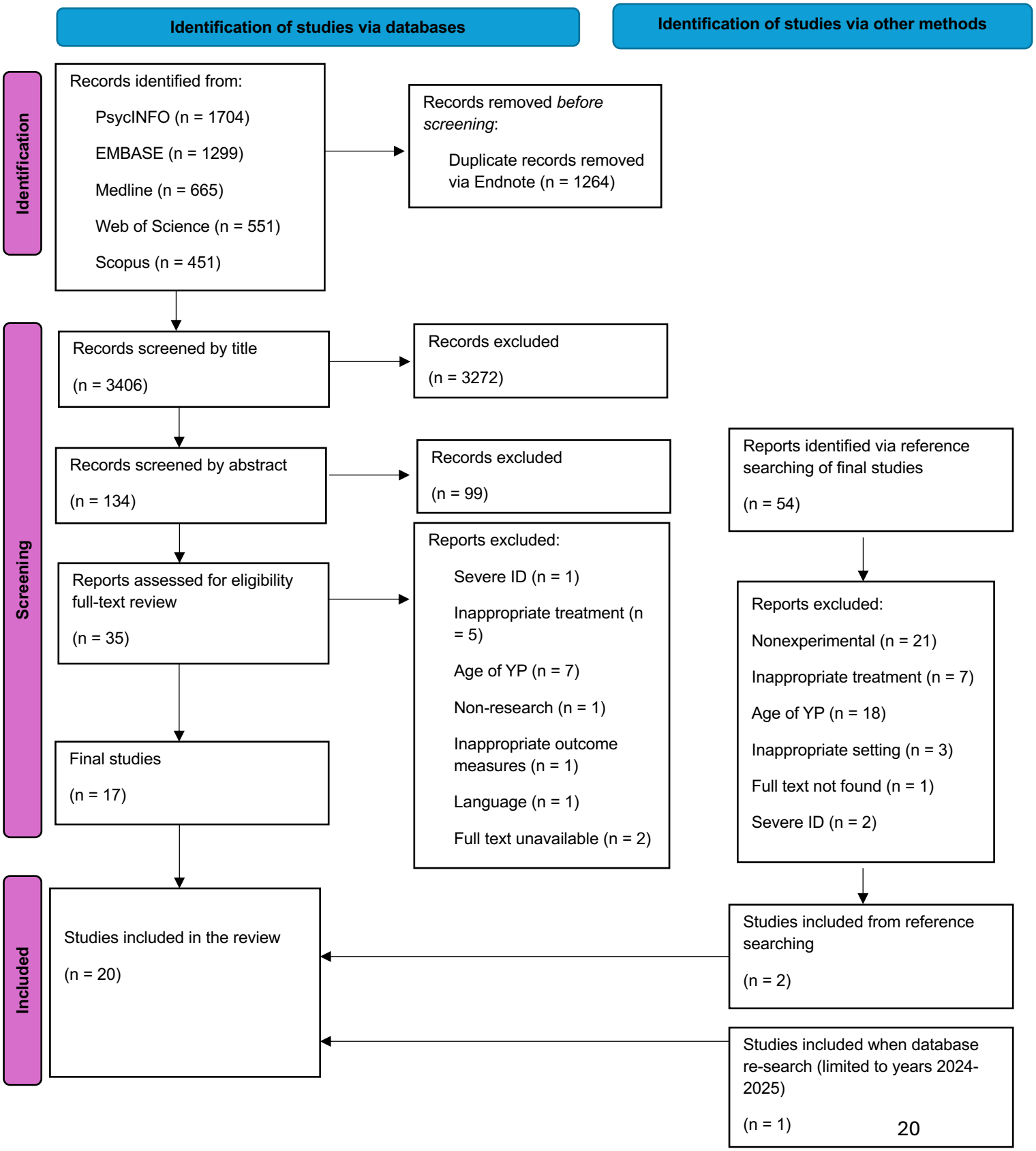
The PRISMA flow-chart (Figure 1) outlines the systematic search. Database searches yielded 4670 articles. Once duplications were removed, 3406 articles remained. Studies were screened by title and 134 studies remained to be screened by abstract. Following the abstract screen, 35 studies went on to a full-text review where they were analysed to ensure they met the inclusion and exclusion criteria. An additional 18 were removed. The final 20 (which included two studies identified through reference searching and one from re-running the search) met the criteria and were included in the study. Data extraction was then carried out for key information.

An independent reviewer looked through 20% of the articles to screen by title/abstract (Cohen's kappa = 0.779). Following a discussion of the discrepancies in scores, a new inter-rater reliability rating was calculated (Cohen's kappa = 1.0). For the full-text review, the independent rater screened 25% of the studies (Cohen's kappa = 1.0) and then supported with the risk of bias assessment phase for 50% of the studies included (Cohen's kappa = 0.82) two individual raters supported with 50% of the data extraction to check for accuracy. Scores for the quality assessment were reviewed following the initial scoring and discussed with the second rater. Studies selected for the second-rater review were determined using a random number generator. The second rater was blind to the first raters' responses until they met to discuss the outcome at each stage.

Quality assessment

The quality of the included studies was determined using the Standard Quality Assessment Criteria (Kmet, Cook, & Lee, 2004). Each study was evaluated based on the criteria outlined in the assessment for either quantitative or qualitative reports. The questions on the assessment related to elements such as research question, participant selection, design, statistical analysis, and reporting of results and discussion. Each question was given a score out of three: no (score of 0), partial (score of 1), yes (score of 2). The question was omitted (N/A) if, due to the design of the study, it was not possible to provide a score. Each study was given a total score by dividing the total sum by the total possible sum. For this review, scores were split into low, medium, or high quality with scores of 0.55 or below indicating low quality, scores of 0.56-0.75 indicating medium quality, and scores from 0.76 or above indicating high quality (see Di Rezze et al., 2015; Ceretti et al., 2022).

Figure 1: PRISMA flowchart



Analysis

The included studies were analysed by conducting a narrative synthesis (Popay et al., 2006) where findings were synthesized into interventions, behaviour outcomes, restrictive practices, medication use, QoL, and YP/staff acceptability. A meta-analysis was not possible due to the heterogeneity of the study characteristics included.

Results

General information

There were 20 studies that met the eligibility criteria for this review. Overall, the studies included data from 2769 YP (it must be noted that for Haynes (2017) the number of YP was unknown) and 130 staff members. Seven of the studies included YP with a diagnosis of a mild-moderate intellectual disabilities. The mean age of the YP ranged between 12-18. Table 2 provides a summary of demographic/clinical characteristics, intervention implemented, outcome measures, and findings of all included studies.

Interventions

PBIS: Seven of the studies included implemented a version of PBIS (Kalke, Glanton, & Cristalli, 2007; Jolivette et al., 2014; Jolivette et al., 2015; Reynolds et al., 2016; Haynes, 2017; Reynolds et al., 2019; Jolivette et al., 2020), a preventative service-wide adaptation of PBS in which the primary aim is to prevent and reduce CB. This includes creating leadership teams, providing staff

training, and putting in place a tiered system of support whereby the intervention becomes more individualized. Tier 1 (universal support) aims to implement service-wide proactive strategies including behavioural expectations, identification of strategies to support staff and students to meet such expectations, development of a reward system, and the implementation of progress monitoring systems. Tier 2 is aimed for those who may continue to display CB whereby problem-solving skills are emphasized and imbedded into a management plan. Finally, tier 3 focuses on individuals with ongoing high levels of CB. FA is conducted, and an individualized behaviour management plan is created collaboratively. All the studies looking into the effectiveness of PBIS focused primarily on the first tier of support with the aim to decrease the amount of YP that require a more in-depth individualized plan. While some implemented PBIS as a facility-wide framework, others implemented PBIS within the school at the residential service.

Individualized PBS

Only one study mentioned the implementation of a PBS-informed plan (Lawrence et al., 2024). The authors note that a formalized FA was not included. Instead, interviews with relevant stakeholders and analysis of information from the YP's previous unit were conducted to understand the YP's needs. An individual behaviour management plan was developed to include changes made to the YP's environment along with interventions aimed at improving emotional literacy, coping through utilizing relaxation exercises. Support was provided from various professionals to decrease the likelihood of the behaviour occurring. The plan's aim was to support staff to build relationships and understand the YP's needs to de-escalate behaviours. Data

monitoring was implemented to allow for comparisons to the treatment provided in the previous facility.

Behavioural management with FA:

The remaining 12 studies outlined the use of behavioural management plans and techniques influenced by PBS principles. Pre-implementation sessions included in-depth interviews with stakeholders regarding history of CB, use of ABC charts/observations/FA to identify precursors and consequences of CB, and/or collaboratively establishing of therapeutic goals. Meaningful reinforcers for appropriate behaviours were identified through various strategies including stimulus preference assessments and use of FA. The individual interventions, however, varied.

In Bush et al., (2023)'s study, ABA therapists would meet individually with YP to support them in providing appropriate behavioural responses to provocative scenarios when presented with specific precursors. Moyes, Tennent, and Bedford (1985), Meyer, Hagopian, and Paclawskyj (1999), Jonikas et al (2004), Sheridan and Deering (2009), Dean and colleagues (2007), and Grey and colleagues (2018) introduced a behaviour management/crisis plan which could include elements such as skills teaching, environmental changes, reactive strategies, staff training, and/or debriefings. Additionally, Meyer, Hagopian, and Paclawskyj (1999) gradually reduced the level of therapist involvement to support in the generalization of the intervention to the home environment. In Field and colleagues (2004), the intervention, which introduced a 12:1 ratio of positive to negative staff interactions with YP and additional consultations for the staff, was removed, and then re-introduced. Schmidt and colleagues (2014) included a brief experimental

analysis to evaluate the outcomes of potential interventions that could positively impact the CB. The intervention with the most promising results was chosen for further evaluation. Killick and Allan (2005) provided staff training to support in increasing confidence and promote positive strategies to reduce the utilization of the least restrictive intervention. Functional communication training programs were created for the YP in Romani et al (2024) based on the identified function of the CB to support the YP to enhance their communication by teaching alternative strategies to use.

Behaviour outcomes

Of the 20 studies included in this review 14 reported on the impact of interventions on behaviour outcomes from data on 567 YP across the studies (Moyes, Tennent, & Bedford, 1985; Luiselli, 1996; Meyer, Hagopian, & Paclawskyj, 1999; Field et al., 2004; Dean et al., 2007; Kalke, Glanton, & Cristalli, 2007; Sheridan & Deering, 2009; Jolivette et al., 2014; Schmidt et al., 2014; Haynes, 2017; Grey et al., 2018; Bush et al., 2023; Lawrence et al., 2024; Romani et al., 2024). Five reported general decreases in CB but study quality varied (Luiselli, 1996; Sheridan & Deering, 2009; Schmidt et al., 2014; Grey et al., 2018; Romani et al., 2024). In some instances change in CB was only evident after further analysis (Haynes, 2017). In this case, reduction in number of children at the facility may have influenced findings. It is important to note that most did not utilize formal outcome measures to track behaviour changes but rather studies relied on frequency or behavioural scores which introduces a level of subjective systematic error to the data. Significant reductions in frequency and/or severity of target behaviour were found in three studies but not for all YP (Dean et al., 2007; Bush et al., 2023; Lawrence et al., 2024). However, lack of appropriate control for confounders may have inflated the results and led to a possible

type I error. Significant changes in behaviours were reported in Moyes, Tennent, & Bedford (2007) but no p-values were provided and the study is of low quality. While some increase or fluctuations in behaviour across the study periods was noted in five studies (Luiselli, 1996; Meyer, Hagopian, & Paclawskyj, 1999; Grey et al., 2018; Bush et al., 2023; Lawrence et al., 2024), the behaviours were reported to have eventually decreased when additional positive reinforcers were presented, booster sessions were implemented, or behaviour plans were modified. In Lawrence et al (2024), behaviours significantly increased following the pandemic due to the lock-down restrictions. Two studies reported that findings were not sustained at follow-up when external intervention support was removed or due to the intervention not being continued by the staff (Field et al., 2004, Jolivette et al., 2014). Increases in engagement with positive behaviours such as routine compliance and use of appropriate behaviour when confronted with a precursor was found in five studies (Meyer, Hagopian, & Paclawskyj, 1999; Field et al., 2004; Sheridan & Deering, 2009; Schmidt et al., 2014; Bush et al., 2023). Four studies (Dean et al., 2007, Kalke, Glanton, & Cristalli, 2007; Jolivette et al., 2014, Haynes, 2017) measured CB changes via decreases in referrals (including security being called) as well as internal/external incident reports. Implementing PBMS can, in some cases, even lead to the generalizability of positive changes to contexts other than the treatment setting and when presented with precursors that were not presented during the intervention (Meyer, Hagopian, & Paclawskyj, 1999; Bush et al., 2023).

Restrictive practices

Six studies included outcome measures looking at changes to restrictive practices extracted from electronic records and data monitoring systems. These studies collectively had a large sample of

2482 YP. Following implementation of PBMS, five studies (rated as medium-high in quality) reported significant reductions in restrictive practices including seclusion, restraint, safety holds and additional referrals, with some finding reductions of over 90% (Jonikas et al., 2004, Dean et al., 2007, Reynolds et al., 2016, Reynolds et al., 2019, Lawrence et al., 2024). Findings remained significant for seclusion when controlling for covariates for one study (Reynolds et al., 2019). Dean et al., (2007), a medium-quality study, found a decrease in restraint interventions being implemented, and duration of locked interventions as well as a decreasing trend for seclusion. However, limited statistical power and lack of control of confounders limits the interpretation of the findings. One study (Lawrence et al., 2024) found that while mean amount of incidences of physical restraint had decreased significantly between phases, it did significantly increase following the pandemic due to the restrictions of lockdown. However, the design of this study makes it difficult to draw conclusions. It must be noted that for Kalke, Glanton, and Cristalli (2007) significant decreases in safety holds were reported for the residential treatment centre despite a p-value of 0.0516.

Medication use

Overall, there were five studies of medium-high quality which reported on changes to medication with a large collective sample size of 2085 YP with mixed results (Dean et al., 2007, Reynolds et al., 2016, Grey et al., 2018, Reynolds et al., 2019, Lawrence et al., 2024). In Grey et al (2018) three patients experienced a reduction in medication use during the intervention while for the others medication was stabilized but did not decrease. While some reported reductions in number of YP given PRNs and one study reported a significant reduction of 20% (Reynolds et al., 2016a, Reynolds et al., 2019), other studies have only found small non-significant reductions (Dean et

al., 2007). Furthermore, Lawrence and colleagues (2024) found a significant increase in mean number of incidences that required medication in the final two phases of the intervention. In this study, the YP was given the opportunity to take medication for reducing distress, which was given on top of the regular medications. However, there was no specific descriptor of which medication was utilized.

QoL

Only one study, with a very small sample size, included a formal measure of QoL (Grey et al., 2018). Out of the six YP included in this study who were within the review's age range, two experienced an increase in QoL, two experienced some initial increases which then decreased towards the end of treatment (which the authors explain could have been due to factors such as changes in living space and transition difficulties), one remained the same until the final phase where it reduced, and the final YP's QoL reduced throughout treatment, potentially caused by unrelated physical health difficulties.

YP acceptability

With regards to the acceptability of PBMS, only three studies reported findings from the YP perspectives on PBIS (Jolivette et al., 2014, Jolivette et al., 2015, Jolivette et al., 2020). However, all three were of medium-high quality. The 123 YP included across these studies commented on the PBIS environment and expectations eliciting positive behaviour changes, supporting them to respond differently and learn new skills, with PBIS viewed as being generally fair, equal, and safe (Jolivette et al., 2014; Jolivette et al., 2020). The importance of receiving meaningful reinforcements and encouragements from staff, and the PBIS framework being

applicable to life outside of the facility were important in improving confidence in their ability to change behaviours.

Barriers to change included themes around the inconsistency of staff applying PBIS, an uncertainty of its applicability for YP with complex difficulties, or general ambivalence, and a feeling of inability to connect to their settings (Jolivette et al., 2014; Jolivette et al., 2020). Staff might continue to use un-approved disciplines including staff pointing out the YP's inappropriate behaviours rather than their engagement in the positive ones leading the YP to view the discipline as being unfair (Jolivette et al., 2015, Jolivette et al., 2020). A few YP mentioned that they preferred the old management system of behaviours compared to the PBIS due to the varied reinforcers provided, however, this was a small number.

Staff acceptability

Two studies commented on the views of 66 staff members regarding the acceptability of PBMS within a residential school and an inpatient unit (Killick & Allen, 2005, Jolivette et al., 2014). While staff training in PBM increased satisfaction in the intervention and significantly increased confidence in responding to aggressive behaviours, this was not sustained at follow-up (Killick & Allen, 2005). Qualitatively, some staff identified barriers in PBM's application including losing confidence in the technique's overtime without refresher courses, the limitations around bank staff not having attended the training, and the uncertainty of utilizing the recommended physical interventions. In Jolivette et al's., (2014) study, the majority of the school staff viewed SW-PBIS as an effective, proactive, easy-to-use strategy which promotes positive behaviour and minimizes

the need for negative consequences but highlights that inconsistency of reinforcement is a barrier.

Quality Assessment

A risk of bias assessment was conducted for all included studies (Appendix B). While Kmet, Cook, and Lee (2004) recommend a threshold of 0.55 as a possible cut-off for inclusion in a review, a more liberal threshold was utilized due to the limited evidence available in this area.

Eight studies utilized a single case report/series design. Of these, four were rated as low-quality due to the lack of details provided in the results considering their descriptive nature, lack of formal analysis, and generalized conclusions despite the design (Luiselli, 1996; Meyer, Hagopian, & Paclawskyj, 1999; Field et al., 2004; Sheridan & Deering, 2009). While information related to aims, design, and demographic data were appropriate, two of the medium quality case reports/series were deducted points due to the results being descriptive in nature (Grey et al., 2018; Schmidt et al., 2014). Nevertheless, two were deemed to be high quality research (Bush et al., 2023; Lawrence et al., 2024). Their aims and methodology were appropriately described along with a clear results section which contained qualitative and quantitative accounts of the findings for Lawrence et al (2024). Appropriate statistical analysis was applied to compare data across phases and derive significance. Due to the nature of the design, various criteria were omitted and therefore not assessed. This includes questions relating to randomization, blinding, sample size, outcome measures, description of analysis, inclusion of estimates of variance, and controlling for confounders which must be taken into consideration when comparing quality across studies.

Quasi-experimental design studies analysing data taken either retrospectively or prospectively before and after implementation of the treatment, or comparing groups, to determine changes over time included two low (Moyes, Tennent, & Bedford, 1985; Kalke, Glanton, & Cristalli, 2007) six medium (Jonikas et al., 2004; Killick & Allan, 2005; Dean et al., 2007; Reynolds et al., 2016; Haynes, 2017; Romani et al., 2024) and one high quality studies (Reynolds et al., 2019). Lack of easily identifiable designs, subjectivity of participants selection method and measures (Kalke, Glanton, & Cristalli, 2007; Haynes, 2017), as well as limited inclusion of estimates of variance for all outcomes and controlling for confounders (Jonikas et al., 2004; Killick & Allan, 2005; Dean et al; 2007; Grey et al., 2018; Romani et al., 2024) resulted in the majority of the deduction of points. Interventions were generally well described with clear connections to the wider literature, aims, objectives, and descriptions of participant characteristics.

Moyes, Tennent, and Bedford (1985), a case-control study, received the lowest quality rating, particularly due to the lack of a clear design, subjective and poorly defined outcome measures, and conclusions of significance in the absence of appropriate statistical evidence making the results section lacking in detail.

The studies scored based on the qualitative research questions were of medium-high quality due to the clear links to the wider literature, proper outline of the settings, clear sampling strategy, in-depth description of data analysis process, and use of second raters for verification purposes (Jolivette et al., 2014; Jolivette et al., 2015; Jolivette et al., 2020). Points were primarily lost due

to the lack of inclusion of reflexivity elements which would have allowed the reader to assess the impact of the researcher's position on the findings. Additional links to the theoretical base would have been desired.

Table 2: Summary of papers included in the review

Authors	Setting	Sample	CB	Intervention	Outcome measures	Findings	Quality score
(Bush et al., 2023)	Juvenile residential justice facility	N = 4 YP Ages: 18, 15, 16, 12 Ethnicities: Black (N = 2), White (N = 2)	Disrespecting staff Bullying Aggression Property destruction Self-injurious behaviours	Interviews to understand presenting concerns, precursors, and trauma history. Authors noted that environmental change was not possible due to the facility's structure. Treatment options reviewed with patients. ABC analysis identified precursors and alternative behaviours. Therapist provided YP with an example provocative situation and recorded YP responses.	Correct or incorrect behavioural responses Number of days CB displayed per week Severity of CB Percentage of trials where YP chose an alternative behaviour.	Behaviour (staff reports): Percentage of days displaying CB reduced post-treatment (N = 2). No significant change from baseline to intervention. Significance approached when looking at baseline to maintenance phase for 1 YP. CB decreased, then increased during intervention (N = 2) but eventually reduced and stabilized during maintenance. Not significant. Significant decreases in severity of CB from baseline to intervention (N = 1). Alternative behaviours: YP used all behaviours taught to them. Number of times the YP stated they would engage in appropriate behaviours when precursor presented increased to over 80% for all YP.	0.8
(Dean et al., 2007)	Child and adolescent inpatient psychiatric tertiary care unit.	N = 151 YP admissions Mean Age: Pre: 13.6yr (4-18) Post: 13.3yr (4.7-18). Gender (Females) Pre-period: 56.9% Post-period: 60.5%	Aggression	Behavioural management program aimed at reducing reliance on restrictive interventions. Included: Staff training, individualized plan for YP, a detailed understanding of YP triggers, protocols on use of closed time-outs for high-risk CB, and skills training for problem solving and anger management.	Episodes of aggression Injury to staff or YP Security involvement Episodes of physical restraint	Behaviour: Significant decreases in number of aggression and injury to staff incidences. Non-significant decreases in security referrals. SR: Significant decreases in physical restraint and in seclusion. Increased use of closed time-out per month. Non-significant difference in use of locked intervention but significant decreases in	0.64

		Mean length of admission: Pre-period:18.4 days Post-period: 21.2 days Presentations: ID, pervasive developmental disorders, ADHD, disruptive behaviour disorder, reactive attachment disorder, mood disorder, anxiety disorder, relational problems, other		Reinforcements provided by staff to YP for prosocial behaviours.	Episodes of seclusion. Episodes of closed time-outs Number of YP receiving PRN HoNOSCA[4]	length. Medication: Small, non-significant decrease in proportion of YP being given PRN over time for 126/159 YP. Mental health: Significant decreases in HoNSCA scores over time. No significant difference between YP admitted before or after treatment implementation.	
(Field et al., 2004)	Residential treatment setting for adolescents	N = 1 YP Age: 12 Ethnicity: Caucasian Gender: Male Diagnosis: ADHD	Impulsivity Noncompliance Physical aggression (also towards peers) Theft Property destruction Self-injury	FA Treatment validity tested with an experimental FA - modified treatment was presented, removed, and then presented again. Staff encouraged to increase positive to negative interaction ratios and provide reinforcement of appropriate behaviour.	Frequency of incidences of noncompliance Frequency of incidents of crisis teaching.	Differences between modified and standard treatment conditions found. Behaviour: Higher fidelity to interaction ratio, lower noncompliance rates and less crisis teaching episodes were observed during the modified treatment. Treatment was not maintained at follow-up by staff. Outcomes were therefore not sustained.	0.5
(Grey et al., 2018)	Full time residential service for children and adolescents	N = 6 YP *Data from one YP was not included in the review due to their age.*	Physical aggression	FA with Individual BSP. Treatment was aimed at modifying the YP's environment. Reinforcements were provided, YP skills were developed and staff learned	Monthly average of frequency of target behaviours Monthly average of daily unit of medications.	Behaviour: Some fluctuations in CB during intervention (N = 4) but all achieved reduction post-intervention when adjustments were made. HoNOS showed overall decrease in scores across time (N=6/7).	0.7

		Ages: 13 (N = 1) 14 (N = 2), 15 (N = 1) 17 (N = 2) Neurodiversity Mild ID (N = 1) Moderate ID (N = 4) Moderate/Severe (N = 1) ASD (N = 6) ADHD (N = 1) Diagnoses: conduct disorder, epilepsy, anxiety, dysthymia, depressive disorder, mild hearing and visual impairment, bowel disorder		appropriate reactive strategies to CB.	Changes in mental health using ChA-PAS[3] and HoNOS[3] QoL questionnaire Assessed implementation with periodic service review and quality with a BSP quality evaluation.	Medication: Reductions monthly average units for N = 3/5 YP and stabilized but did not decrease for the remaining 2. Mental health: Varying changes in mental health scores across YP according to CHa-PAS but decreases in scores found for HoNOS (N = 6) QoL: Improvements in QoL (N = 2). Improvements at T2 but slight reduction by T3 (N = 2 YP). QoL stable at T2 and reduced in T3 (N=1). Clear reductions in QoL for N = 1 YP due to external factors.	
(Haynes, 2017)	Residential facility	N = 64 staff working across 5 cottages *Only data from Cottage B and C were included in this review as they served males and females ages 12-18.*	Cussing Verbal threats without act Verbal threats with act Task refusal Fighting Running away Sexually acting out.	Baseline: treatment as usual. Intervention: Staff trained in PBIS. Three-tiered system, focused on supporting YP to develop prosocial behaviours and reduce CB. Focus was on tier 1. Reinforcement of prosocial behaviours encouraged and changes made to the rewards system and use of incident monitoring system. Consequences for CB were outlined. Behavioural expectations were created. YP collaboration was included.	Fidelity via Agency wide evaluation tool (AET) Weekly behaviour scores Frequency of incident reports Staff-youth interaction data	Behaviour: Weekly behaviour scores increased following intervention for cottage B but not for cottage C. Decrease in mean score for Cottage B and decrease in number of YP given higher behaviour scores in 6w before and after comparison. Reduction in average mean number of external incident reports for both cottages. Reduction of internal incident reports for Cottage C but an increase for Cottage B. 6w before and after comparison shows an overall reduction. Interactions	0.59

						No change in percentage of positive to negative interactions with staff. PBIS Fidelity: improvements in both cottages. Cottage C did not reach fidelity of 80%.	
(Jolivette et al., 2014)	Residential school	N = 39 staff 10 special ed teachers 1 art teacher 2 music therapists 2 school admin 24 housing unit staff. Gender: 18 females Ethnicity: 23 AA Mean years' experience: 4-5yr N = 75 YP 41% were 7-11yr; 35% were 11-14yr; 24% were 14-17yr	Disruption Disrespect Aggression	Staff created a leadership team and received training in School wide-PBIS (SW-PBIS) - behavioural expectations were set out, lesson plans and a reinforcement system were created. Protocols were developed for feedback implementation. Data collection systems were utilized to monitor effectiveness.	Fidelity via the school-wide evaluation tool (SET). Social validity via Likert scale. Average number of discipline referrals and students accruing referrals Barriers and facilitators to implementation Focus group with YP and teachers at follow-up after removal of PBIS assistance	Behaviour: Decrease in number of discipline referrals and YP accruing referrals when external support was provided. Fidelity and validity: Fidelity improved during implementation. Most staff found SW-PBIS effective, easy to use, and noted they were likely to continue utilizing it. Follow-up: when external support removed, number of discipline referral and YP accruing referrals increased. Fidelity remained high but lower than previously. Teacher themes: PBIS has positive impact and is effective, manageable, proactive, and didn't rely on punishments. It was also seen as providing adequate incentives. Identified barriers included lack of consistency amongst staff and want to increase number of coupons needed for reinforcements. YP themes: PBIS supports with transitions within the service, creates positive change in behaviour via use of incentives, and was seen as having an overall positive impact for most (one YP stated it hadn't but didn't provide more explanation).	0.75– qual

(Jolivette et al., 2015)	State juvenile justice agency.	N = 35 YP Facility A: 4 males (100% AA). Mean age 15.3 (14.9-15.6) Facility B: 4 males (100% AA). Mean age 17.1 (16.8-18.7) Facility C: 5 males (40% AA, 40% W, 20% H). Mean age 18.3 (17.3-19.5) Facility D: 5 males (80% AA, 20% W). Mean age of 17.0 (16.5-18.8). Facility E: 3 males (67% AA, 33% W). Mean age of 16.0 (15.5-17.0) Facility F: 5 YP (60% M, 40% F; 100% AA). Mean age of 16.6yr (15.11-17.1). Facility G: 5 females (60% AA, 20% O, 20% W) with mean age of 18.8 (17.2-20.9). Facility H: 4 YP (25% M, 75% Fl 25% H, 75% W). Mean age of 16.3 (16.2 -16.5)	Not specified – qualitative	Facility-wide PBIS (FW-PBIS): three-tiered system was implemented across the facilities. In tier 1, the facility established clear expected behaviours, reinforced prosocial behaviours, maintained a data collection system used to inform decisions and monitoring system, and clearly outlined consequences to behaviour.	Focus groups to collect themes regarding FW-PBIS.	Facilitator themes: Staff reinforcements improved relationships with YP. PBIS expectations were seen as being for everybody not just YP. New reinforcers were seen as positive, authentic, and motivating. YP felt PBIS was relevant outside of the facility which improved motivation to change. Barrier themes Staff not engaging in teaching the PBIS principles or using PBIS language. Staff continuing to identify when behaviour is not appropriate. Inconsistency of staff implementing SW-PBIS. Staff engaging in old practices which impacts YP's perception of safety.	0.8
(Jolivette et al., 2020)	Juvenile justice facility	N = 13 YP Ages: 16 (N = 9) 15 (N = 2)	Not specified - qualitative	FW-PBIS: three-tiered framework to promote prosocial behaviours and skill building while reducing CB through data-collection	Focus group and survey to collect themes YP views of FW-PBIS.	Positive themes FW-PBIS supported behaviour change through teaching of expectations and reinforcements, supported YP to improve their	0.75

	14 (N = 1) 13 (N = 1) <u>Gender:</u> Males (N = 11) Females: (N = 2) <u>Ethnicity:</u> AA (N = 11) H (N = 1) W (N = 1)	FW-PBIS was implemented in all areas of the facility 24/7 and across all three tiers.	circumstances through teaching life skills and created a fair, safe, and collaborative environment. <u>Negative themes</u> Inconsistent reinforcement and acknowledgement from staff. Complexity of the system makes FW-PBIS difficult to be useful. Difficulties feeling connected to the facilities. <u>Survey:</u> A majority of YP said PBIS expectations weren't similar to home but liked how staff taught them. YP felt positive regarding staff reinforcement of prosocial behaviours. Mixed results for fairness of discipline. Most YP reported feeling safe. YP were more likely to give respect to staff and staff to each other. Positive responses to feeling connected to facility were collected.

(Jonikas et al., 2004)	Adolescent psychiatry unit	N = 227 YP Age Range: 12-17 Ethnicity: 62% AA Gender: 66% female Diagnosis: Depression: 37% Adjustment disorder: 25% Conduct disorder: 15% Schizophrenia: 7% Other: 16% Medication: 62% on medication	Aggressive behaviours	Restraint reduction program: Interviews were conducted for triggers identification, to understanding YPs preferred de-escalation strategies, and to help YP identify own coping strategies to use. Crisis management plans were created, with strategies for staff to manage CB. Debriefing protocols were put in place if restrictive interventions were necessary with opportunities to update the plan with the client. Training provided to staff members.	Restraint rate	Behaviour: 48% reduction in restraint use one quarter post staff-training on intervention implementation and 98% after two quarters. A significant effect of training on restraint data was found.	0.59
(Kalke, Glanton, & Cristalli, 2007)	Residential school (Site 3). *Two other sites were included in this study but excluded for the review due to the setting being a day centre.*	N = 176 YP Mean age: 15 Gender: Females (51%) Ethnicity: White (55%) Diagnoses: 34% presented with mental health difficulties. Behaviour/control (44%) and Mood disorders (42%) were most frequent diagnostic groups.	Self-harm Aggression Violence Relationship difficulties Neglect Substance abuse Property damage.	PBIS: three-tiered data-driven intervention. Tier 1. Leadership teams were created and training was provided. The environment was evaluated and behavioural expectations were created through a behavioural matrix. Teaching strategies and activities were identified, and positive reinforcements were chosen for appropriate behaviour. Staff were also provided training in crisis intervention.	Safety hold data Number of behavioural incidences. Out of class referrals.	SR: Reduction in safety holds post-intervention. 64% reduction in out of classroom referrals and a reduction in support room referrals.	0.55

				Tier 2: FA and student interviews to identify antecedents. Targeted interventions provided. Tier 3: intensive support. In addition to tier 2, a crisis management plan is created.			
(Killick & Allan, 2005)	Adolescent inpatient psychiatric unit	N = 27 staff Female: 66.7% Full time staff: 81.48% Average time working on ward: 40.93 months Average experience with YP: 99.07 months. Unit served YP 11-18	Not specified – staff population.	Staff training for Positive Behaviour Management (PBM) - aims to promote preventative and positive management strategies using the least restrictive option. It uses environmental and individual strategies to understand and change triggers, develop YP skills and resources, and provides staff with support on identifying reactive strategies. Staff were also taught pain free physical interventions.	Aggression questionnaire: Staff confidence in managing aggression. Reactive strategies questionnaire: Staff knowledge about managing aggression Satisfaction questionnaire: Staff Satisfaction with PBM	Staff confidence: Significant effect of training on staff confidence in managing aggression over time, trend of groups, time x group interaction. No significant difference in training group scores. Confidence was not sustained at follow-up. Reactive strategies Significant increases in knowledge over time regardless of training. This was sustained at follow-up. No significant group differences or time x group interaction. Satisfaction: Mean satisfaction with PBM and C&R decreased from T3 to follow-up. Despite this, satisfaction with PBM remained higher than for C&R and was utilized more at follow-up compared to baseline. Comments were collected.	0.68
(Lawrence et al., 2024)	Secure mental health unit for people with ID detained under the mental health act.	N = 1 Age: 16 Diagnosis: delayed developmental milestones, ID, ASD, ADHD	Attempts harm to others Soiling and Smearing Physical aggression Damage to property	Individualized PBS-informed plan created following assessment to understand the YP's needs and establish a positive environment to support in decreasing CB. Understanding of the YPs history and sensory needs. Changes were made to his environment throughout collaboration with professionals	Frequency of behaviour incidences per month. Severity of incidences. Frequency of use of restrictive interventions per month.	Behaviour: Significant decrease in frequency of incidences observed across phases. Significant increases during the pandemic. Reduction in incident severity compared to previous hospital (significance not tested) SR: Significant decrease in average use of physical restraints. Significant increased during pandemic. Medication:	0.9

				and family. Data was collected routinely for evaluation purposes. YP was supported in building his communication skills around emotions.	Frequency use of PRN per month Qualitative parent report.	Significant increase in mean use of medication between the last two phases. Qualitative data YP's mum reported the staff understood the YPs needs and she noticed a positive impact in the emotional wellbeing and independence of YP. Mum reported a positive view of the treatment and facility.	
(Luiselli, 1996)	Private residential treatment facility for YP with developmental disabilities and behavioural disorders.	N = 1 Age: 14 Diagnoses: Hyperactivity, Language delays. Behaviour problems, ADHD, Moderate ID	Physical and verbal aggression Property Throwing objects	Baseline: three weeks of treatment as usual Intervention: FA, direct observations, interviews, and use of ABC charts. Stimulus preferences elicited through assessment and reinforcements implemented for appropriate behaviour. Differential reinforcement of other behaviour implemented during the school day. Exclusionary time outs given for serious CB and additional reinforcements were provided when needed.	Frequency of target behaviours	Behaviour: Decrease in mean frequency of CB for 5w, increase for 2w, and further reduction by the end of treatment. Follow-up: Average frequency per day of CB remained low.	0.5
(Meyer, Hagopian, & Paclawskyj 1999)	Specialized inpatient unit	N = 1 Age: 18 Gender: Male Diagnoses: Mild/Moderate ID, mild cerebral palsy, anxiety disorder	Verbal and physical aggression, disruption, school refusal, lack of compliance with morning routine.	Interviews with parents and direct observations of the YP. FA and a stimulus choice assessment for reinforcers. A delayed-access reinforcer assessment was conducted and therapist involvement was reduced on a phased based approach. A response-cost for CB was introduced in session 12 and the	Average percent of success in achieving parental independence, compliance, generalizing treatment. Average score for treatment progress was calculated.	Behaviour: compliance with morning routine increased from 0% at baseline to 90% at session 18. Slight reduction in compliance then occurred and additional reinforcers were provided which led to the highest level of compliance (97%). At follow-up, once the YP had been discharged and therapist support had been reduced, he was able to complete 100% his morning routine and attend school.	0.5

				treatment was generalized to home on session 9.			
(Moyes, Tennent, & Bedford, 1985)	Institutional setting	Treatment: N = 78 YP *Mean age:* 17years 11mo; range 14-25 *Gender*: 51% males Control: N = 63 YP *Mean age:* 17years 7mo *Gender*: 53% males	Theft Aggression Absences Absconding Self-harm.	Treatment included a token system and reinforcement for positive behaviours and a response costs in the form of loss of privileges for CB. Individual behaviour management plans were created. Observations of behaviours might be conducted after FA which would be repeated, and social skills training is provided. Progress is monitored frequently. Use of time-outs or seclusions when necessary were utilized.	Outcomes assessed 1-2yr after discharge. Aggression Outbursts Self-harm CB Police involvement Number of court appearances Living situation Outcomes assessed via scale: 'no change, became worse, improved, never has a problem.'	Behaviour: No significant differences between groups for aggression at 1yr follow-up but achieved at 2yr. Significantly more control of outbursts, more manageable behaviour, and more control of self-harming in treatment group at both follow-up points. Significantly less police involvements at 1yr follow-up but not maintained at 2yr for treatment group. More court cases involving YP in the treatment group at both time points. Significantly more YP living alone at both time points in treatment group.	0.41
(Reynolds et al., 2016)	Psychiatric inpatient unit	N = 1,485 admissions Mean age: 13.18 +/- 2.93 Gender: 55.2% females Ethnicity: White (31.8%), Black (59.2%), Hispanic (1.8%), Asian (1.3%), Other (5.9%) Episodes of SR: 796 total; 747 locked-door, 36 open-door seclusions, 13 restraints. PRN: 2719 incidences	Not specified	Modified-PBIS: three-tiered system. Focus of the study was on Tier 1 which included establishing staff buy in, having behavioural expectations, conducting a behavioural matrix, a reinforcement system, maintaining a 5:1 positive to negative interaction ratio, using data to monitor progress, and staff feedback. Tier 2 included the addition of problem-solving discussions with YP with continued CB.	Percentage of YP where SR was needed Mean duration of SR (min) and rate (per 1000 patient hours) Percentage of patients given PRN	SR: Mean rate of seclusion significantly reduced post-intervention implementation along with a 6.2% reduction in the percentage of YP who experience SR. No significant effect of diagnosis on SR. Significant reduction in mean duration of SR incidences per episode. Medication: Decrease in PRN use with percentage of YP given medication significantly reducing by 12.2% which remained significant after controlling for demographic information. No significant effect of diagnosis on PRN.	0.73

		Diagnoses Depression (31%) Bipolar (26%) ADHD (19%) Anxiety (9%) Adjustment (8%) Psychotic (3%) Substance (2%) Other (2%) Pervasive disruptive (1%)		Tier 3 included a formal FA and creation of an individualized plan for YP that required additional support. Staff received ongoing training and consultation.		Interactions: Staff had more positive interactions for every negative interaction post-intervention.	
(Reynolds et al., 2019)	Psychiatric partial hospital program	N = 442 admissions. Mean age post intervention: 13.27 Gender: Males (38.5%) Ethnicity: Black (47.1%) Diagnoses: ADHD (11.6%), Psychotic (1.4%) Depressive (41.3%) Mood/Bipolar (20.0%) Anxiety (15.4%), Adjustment (5.5%) Other (4.8%) Episodes of SR: 109 PRN: 441 administered.	Agitation Aggression	Modified-PBIS – same as above	SR rate per 1000 YP hours Mean length of SR episodes in min Proportion of YP in SR Proportion of YP being administered PRN	SR Significant reduction of 87% in SR rate, which remained after controlling for demographics. Significant reduction in percentage of patients who experienced SR of 40.9%. Medication Significant reduction of PRN use of 20.4% which did not reach significance after controlling for demographics. Interactions Staff were able to engage in more positive than negative interactions with YP post-intervention.	0.81
(Romani et al., 2024)	Specialized psychiatric inpatient unit or partial hospitalizat	N = 8 *Data omitted from 20 YP due to age, severity of ID, unspecified ID, or assessment not available.*	Aggression Self-harm Destruction of property	Stimulus-preference assessment and FA were carried out. Functional communication training program was conducted for each YP depending on the function of the identified CB to support the YP in utilizing	Percentage decrease in CB	Behaviours: Reduction in percentage of CB was found for all YP. Decreases of 20-30% were found for 2 YP while decreases of 90-100% of CB were found for the remaining 6 YP following treatment.	0.68

	ion program	Age: 12 (N=1) 13 (N=1) 14 (N=1) 15 (N=3) 16 (N=1) 17 (N=2) Diagnoses: Mild ID (N=1) Moderate ID (N=3) Borderline ID (N=1) Mean admission length (for N=9): 27.8 days		appropriate communication strategies which serve a similar function to the CB. A competing stimulus assessment and non-contingent reinforcement program was conducted for automatically reinforced CB.		*Results relating to differences in frequency, severity, and function of CB between YP with profound and non-profound ASD were not reported due to YP's ages and/or diagnoses.*	
(Schmidt et al., 2014)	Inpatient unit	N = 1 Age: 14 Ethnicity: Caucasian Gender: Male Diagnoses: Pervasive Developmental Disorder not specified, Mild ID, Mood disorder, ADHD	Severe physical and verbal aggression Property destruction	Phase 1: preference assessment and interview with parent to identify reinforcers. A FA was conducted to understand CB function (escape from demands). A demand analysis was included to understand which demands elicited CB. Phase 2: brief experimental analysis. Five potential strategies were tested for their impact on CB. Phase 3: extended testing of the most effective intervention from phase 2 (the number line) Differential reinforcement was introduced.	Responses per minute for physical and verbal aggression, and disruption. Frequency of compliance	Behaviour The number line condition resulted in the lowest rate of CB and indicated that it was helpful in reducing the task's cognitive load. Differential reinforcement of alternative behaviour using the number line led to the reduction CB rate to 0 and compliance increasing even with demand fading.	0.6
(Sheridan & Deering, 2009)	Individual residential home	N = 1 Age: 12yr Gender: Male	Physical and verbal aggression Property damage	FA was conducted which included observations, ABC data, and interviews to identify triggers. A BSP was implemented which included a point/token system,	Number of Incidences of CB per month Daily and weekly compliance with	Behaviour: Reduction of number of episodes of physical aggression, dangerous behaviour in car, and property destruction to 0 per month. Some slight reductions in CB observed during baseline period. This could be attributed to YP	0.5

	Dangerous behaviours in the car Reading difficulties Difficulties complying to social norms Difficulties with hygiene.	reinforcements for days without any episodes and a response cost following CB. Teaching of necessary skills was provided and environmental changes were implemented. Data was routinely monitored, and verbal prompts were provided. Intervention first targeted aggression, behaviours in car, and property damage. Then it focused on compliance with hygiene morning routine.	morning routine (measured by task completion)	starting school and engaging with the staff less. Rate of compliance with personal hygiene increased due to addition of personally-relevant reinforcers but not to 100%. When verbal prompts and additional reinforcers were provided, the YP was compliant 100% of the time.

[1]FA=functional analysis; BSP=Behaviour support plan; SR=seclusion and restraint; PRN=pro re nata medication

[2]AA=African American; W=White, H=Hispanic

[3]ChA-PAS =Child and adolescent psychiatric assessment; HoNOS=Health of Nation Outcome Scale

[4]HoNOSCA=The Health of the Nation Outcome Scales for Children and Adolescents

Discussion

Overview

Previous reviews have examined the literature around PBS within educational settings (Beqiraj et al., 2021) or have explored adult populations (Konstantinidou, Dillenburger &, Ramey, 2023; Whincup & Penny, 2024). This review was the first of its kind to synthesize the data on the effectiveness and acceptability of PBMS in adolescent residential settings. Analysis of the 20 studies included indicates that PBMS shows promising effects and is largely considered acceptable for the management of CB in residential settings.

Challenging behaviour: The studies reporting on behavioural outcomes suggest that PBMS shows promising evidence that it can lead to reductions in the frequency and severity of CB in YP within residential settings at an individual and system-wide level. This is in-line with preliminary evidence emerging in the adult inpatient population (Davies et al., 2019, Carr & Hillbrand, 2022). However, statistical significance was not consistently achieved in all studies included in this review and due to the design variation, potential influence of confounders, and lack of well-powered statistical analysis, it is difficult to ascertain effectiveness. As such, all outcomes should be interpreted with caution.

Acceptability: Reports of PBMS being a positive change from previous practices, easy to implement, as well as being fair and safe, provides additional support for the social validity and acceptability of this approach with YP and staff alike, especially when compared to previously

used behaviour management strategies such as restrictive practices. These findings are in-line with the literature in this area in which additional positive elements includes the use of a data monitoring system and implementation of levels of behavioural responses (Houchins et al., 2005, Swain-Bradway et al., 2013, Jolivette, Kimball, & Sprague, 2018). However, the barriers identified, including the inconsistencies regarding the application of reinforcements, ambivalence from some regarding its effectiveness in complex situations, and occasional use of pre-PBIS strategies provides information regarding areas of implementation that require improvement.

Restrictive practices: PBMS have likewise been shown to lead to a reduction in the use of restrictive practices as evidenced in the majority of the studies included in this review which is in-line with the overall aim of PBS (Gore et al., 2013). In fact, many of the studies were able to demonstrate statistically significant findings.

Medication use: The literature on medication use, on the other hand, is mixed. While some case series reported decreases in use of medication, others found that medication use increased. PBS has been shown to support in the reduction and reliance on medication use in adults with intellectual disabilities (Gerrard et al., 2019). However one explanation is staff offering medication to manage CB as an alternative to using physical interventions which may occur more frequently when acuity is high and staffing levels are low (Usher et al., 2009).

QoL: While QoL is considered to be a central component and aim of PBS (Gore et al., 2013), only one study formally assessed QoL within this review with inconsistent reports across cases. Nevertheless, the reductions of CB, increase in positive behaviour, compliance, individual living, and qualitative feedback from carers and staff could be seen as indicators of improvements despite no formal measure being utilized. In fact, QoL has been found to significantly improve following PBS for children and adults with and without developmental disabilities in the community as measured through formal and informal means (Clarke & Duda, 2019, Bowring et al., 2020).

Study quality: Despite the promising findings of this review, the quality of the literature necessitates caution with interpretation. This is due to most of the studies being of low to medium quality as well as the difficulties comparing quality across a variety of methodological designs.

Strengths and limitations

The current review included a rigorous process of scouring various databases, reviewing over 3,000 titles, and including a second rater to ensure the inclusion of all relevant papers and to check for consistency via calculating inter-rater reliability scores. Nevertheless, this review is not without limitations. Due to the heterogeneity of methods, designs, populations, settings, and outcome measures, a meta-analysis was not possible which would have provided additional information as to the effectiveness of PBMS by allowing more reliable statistical comparison of results (Sanchez-Meca, 2010). PBS has been adapted to be implemented system-wide (PBIS) and

on individualized levels which makes comparing studies difficult considering the differences in methodologies and sample sizes. In fact, all studies included in the review looking at PBIS evaluated tier 1 implementation. Therefore, there is little current evidence with regards to the effectiveness of tier 2 and 3 implementation within residential settings which authors have made note of (Reynolds et al., 2016). Furthermore, due to the inclusion criteria looking at positive behavioural *strategies*, not all studies utilized the full 'pure PBS' framework. For instance, some studies (Moyes, Tennent, & Bedford, 1985; Luiselli, 1996; Meyer, Hagopian, & Paclawskyj, 1999; Dean et al., 2007; Sheridan & Deering, 2009; Haynes, 2017) reported the use of consequences, a response-cost, or occasional use of restrictive interventions which could be classified as punishments. This goes directly against the values of a strength-based approach in PBS (Dunlap et al., 2009). However, as noted in LaVigna and Willis (2012), last resort strategies may be necessary, especially in the presence of severe CB and may therefore be difficult to eliminate from services.

Due to various services providing support for both child and adolescent populations, the decision was made to base the inclusion criteria on the mean age of the YP, which signifies that not all of the populations included in this review fell between the ages of 12-18, making it more difficult to draw a conclusion that such strategies are beneficial for the adolescent population specifically. This is especially important as several studies were excluded due to difficulties in ascertaining mean ages (when only age ranges were provided) or when the mean range fell above or below the threshold, or wasn't reported (Houchins et al., 2005, Swain-Bradway et al., 2013, Jolivette, Kimball, & Sprague, 2018, Sanders et al., 2020a, Mulligan & Pitts, 2022; Sprague et al., 2020). Inclusion of these studies may have provided additional information. For instance, one study

conducted a pilot RCT on an intervention that included a FA, individualized management plan including reinforcers, and functional communication training for YP admitted to hospital for physical or psychiatric concerns and found promising outcomes on restraint reduction. However, the mean age of the total sample was 11.6 years (Sanders et al., 2020b).

The heterogeneity of settings must likewise be acknowledged. The current review transcended social care, mental health, as well as criminal justice settings in which there was a range of presenting difficulties and behavioural severity. Therefore, it is difficult to draw a conclusion regarding which specific setting and/or population PBMS are most useful for. Furthermore, due to the limited evidence available, the current review included specialist services for YP with intellectual disabilities. Future studies should research the effects of PBS within mainstream services and YP without a diagnosis of intellectual disabilities considering PBMS within intellectual disabilities services has been the primary focus of the PBS literature with inconsistent findings found across study designs within the community setting (Strydom et al., 2020, Lewis et al., 2021). Nevertheless, this systematic review provides an understanding of the literature which can be used preliminarily to evaluate the effectiveness and acceptability of PBMS in residential settings.

Future research

It is evident that additional research should be conducted with the use of rigorous outcome measures and designs to ensure that high-standard data is collected. This is because while the included studies may provide promising descriptive findings with some statistical significance

achieved, RCTs within community adult intellectual disability services have found mixed results, with one study finding that training staff in PBS did not lead to the reduction in CB when compared to treatment as usual, albeit with limitations of its own including difficulties with the full implementation of all PBS elements (Strydom et al., 2020). On the other hand, another RCT did report significant findings (Hassiotis et al., 2009). Additional well-powered research in this area would help to inform service provision within specific adolescent inpatient units. Ideally, this would be achieved by comparing outcomes during a baseline treatment as usual phase, and an intervention phase for one group, while another group is allocated to a waitlist-TAU phase. It is important to include randomization where possible as well as valid outcome measures such as the Behaviour Problem Inventory (Rojahn et al., 2001), the World Health Organization Quality of Life scale (Skevington, Lofty, & O'Connell, 2004) or the Health of the Nation Outcome Scale (Gowers et al., 1999) which has been validated within an adolescent inpatient sample (Harnett et al., 2005). However, ethical and practical barriers can make randomization of patients more difficult so randomizing services may be appropriate. This includes the YP's ability to consent to research and the fact that PBMS are often being implemented at a system-wide level. Therefore, additional single case experimental design research may provide appropriate and helpful information (additional research recommendations in Appendix C).

Clinical implications:

Clinically, the review's findings could be helpful for residential services that aim to reduce the reliance on restrictive practices in the management of CB, such as adolescent inpatient services and PICUs. PBS is in-line with the CQC best practice guidelines (Care Quality Commission,

2017). Considering the high level of need amongst YP within inpatient units, a FW-PBIS framework may be most beneficial as the tiered level system provides a proactive preventative approach for the whole, while focusing on individualized PBS plans for the YP that require additional, more specialist support. However, the studies in this review were conducted across a range of countries and population groups. This impacts the interpretation and application of the findings to NHS services considering that some services may have been privatized, with access to additional resources, and staff. The need for insurance to access services in some countries may influence the type of YP seen compared to the NHS. The interpretation of CB will likewise vary across cultures and populations. Furthermore, services (such as juvenile justice settings) in other countries may adhere to different governmental guidelines/restrictions that may not apply to the NHS. This systematic review was developed to synthesize evidence to support NHS adolescent inpatient units to make evidence-based decisions regarding the implementation of PBMS. However, this heterogeneity makes it difficult to generalize findings. It is therefore imperative that research is conducted within UK-based/NHS services as the PBS framework may look different.

Therefore, this review provides additional information to support adolescent residential services in making decisions regarding behaviour management strategies. It is important to ensure that future PBS application considers youth and staff voices as barriers to implementation have been noted (Jolivette et al., 2020). Therefore, it would be essential for services to implement a robust training plan for permanent and bank staff with routine refresher courses, use of appropriate outcome measures, audit cycles to monitor data, and the inclusion of assessments of intervention fidelity, as has been included in Jolivette et al., (2014) with the School-Wide Evaluation Tool.

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Part 2: Service Improvement Project

Staff Experiences of Post-Incident Support in an Adolescent Inpatient Unit

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Word count: 5476 (including table counted as 100 words)

Submission date: 05/08/2025

Target Journal: Occupational Medicine- *this is an international peer-reviewed journal that includes research regarding "workplace health and safety". It accepts papers from a variety of disciplines and research methods and uses Vancouver citations throughout. This paper will be formatted to the author guidelines when submission is sought for publication.*

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Abstract

Background: Emotionally charged incidences are common within adolescent inpatient units. Support provided to staff members is therefore crucial to maintain the wellbeing and mental health of employees. **Aims**: This study explored staff members' experiences of post-incident support provided by an adolescent inpatient unit. **Methods**: A retrospective audit was conducted to collect information on types of incidences and proportion of restraint incidences accounted for by staff members in an Adolescent Inpatient Unit. 14 interviews were conducted with staff and themes were drawn out using thematic analysis. **Results**: Five themes were identified: experiences during incidences, contextual barriers, views of informal support, views of formal support, and validation and reassurance. Descriptive statistics were utilized to provide an overall account of the audit data. **Conclusions**: Staff valued practical, immediate debriefs, one-to-one support for emotional processing, and informal support from various avenues. Validation and reassurance were the central component underlying helpful aspects of support. Nevertheless, improvements can be made, and so recommendations were shared with service leads to improve the support provision.

Introduction

There is no universal definition for what constitutes a "serious incident" in mental health settings. It is often defined by individual organizations depending on their context but are acknowledged as events that put patients, carers, and the public at risk of harm (1). In adolescent inpatient units, staff are frequently exposed to distressing incidences including self-harm (2), physical aggression (3), restrictive interventions (4), suicidal behaviours (5, 6) and YP being absent without leave (AWOL) (7).

Serious incidences can have significant impacts on staff, including experiencing moral distress, and questioning their judgement, decision-making, and ability to provide patient safety (8). Psychiatric nurses are susceptible to developing compassion fatigue, moral distress, burnout, and experience a general decline in wellbeing following incident exposure (9-11).

Staff are likewise affected by the clinical activities they carry out including seclusion, restraints, administering sedation medication, and nasogastric (NG) feeding (12-14). Heightened distress, "anxiety, guilt, and anger", and exposure to aggression are common experiences reported by staff conducting restraints for NG feeds, with some describing coping by detaching from procedures (14). Findings from adult wards suggest staff can experience long-term impacts including difficulties sleeping, hypervigilance, emotional exhaustion, and lack of motivation for work (15).

McCann and Pearlman's (1990) constructivist self-development theory (CSDT) posits one's understanding of a traumatic event is an individual process. It argues that a potential trauma might disrupt the individual's ability to draw on previous experiences to make sense of their current reality and make meaning from the event, disrupting one's schemas of safety, trust,

power/control, esteem, and intimacy (16, 17). We know from research on populations exposed to traumatic events that maladaptive appraisals have been associated with trauma symptoms such as those previously mentioned (18). As a result, professional and personal sources of support should be 'tapped' into for individuals to make sense of the trauma and recognise their own competencies (16) considering that the ability to integrate the stressful event and its context with one's belief system and experiences is crucial for it to be adaptively processed (19). This theory provides a lens through which to understand the unique impacts of trauma on the self and how disruptions to schemas may be repaired through post-incident support. For instance, being exposed to the restraining of a YP may negatively reshape a staff member's 'frame of reference', their identity and beliefs about the self being a 'care-provider', which may lead to anxiety, guilt, or questioning of their role and abilities, especially if their ability to tolerate distress has been impacted by previous experiences. Whether the support provided is seen to be helpful in making sense of the incident and to cope with the distress is important to understand further.

NICE guidelines recommend a post-incident debrief following aggression/violence where the emotional and physical impact on staff is addressed and supervision or signposting is provided for staff exposed to self-harm (20, 21). However, some report debriefs seldom being provided and identify systemic barriers to post-incident support being offered (22). Those that are in place are considered by some to be futile and poorly facilitated (8). Likewise, guidelines don't provide recommendations on informal support which is commonly sought (23). For instance, staff express contacting loved ones for emotional support, supervisors/management for practical support (8), and identify colleagues as a valued support system (24).

Recently some healthcare services (25) introduced Trauma Risk Management (TriM); an evidence based, psychologically-informed model which assesses and supports those who are

susceptible to developing PTSD symptoms following exposure to potentially traumatic incidences (26). However, its provision is dependent on the organization's definition of a serious incident.

The current study took place at the Highfield Unit (HU), a National Health Service (NHS) adolescent inpatient unit in South England for young people (YP) ages 11-18 with a variety of acute mental health difficulties. These YP often present with severe and complex needs such as self-harm, suicidal behaviour, severe neglect etc. that are considered difficult to manage within community services. The unit provides assessment and treatment of mental health difficulties predominantly using a Dialectical Behavioural Therapy model. The unit's ethos is to provide a supportive and safe environment for YP to make the fullest possible recovery by providing holistic evidence-based care. Staff at the unit are often involved in and manage incidences which may have physical and/or emotional consequences. While the service provides several support avenues, a need was identified by the lead psychologist to better understand staff experiences of support and improve its provision considering the ward's acuity. Therefore, the aim of the current study was to answer the following questions:

1) What is the frequency and type of serious incidences that occur in the service over a year?
2) What are the views of the staff at the HU on the current post-incident support provision? Do they find this process useful after experiencing an emotionally charged incident?
3) Are there barriers to accessing support post-incident?
4) Are there any recommendations to improve support for staff?

Emotionally charged incident (ECI) will henceforth be utilized to capture a range of incidences considered to be emotionally impactful. The definition was developed during a focus group with staff from the neighbouring psychiatric intensive care unit (PICU) as 'any incident involving a YP where staff involvement is needed to de-escalate the situation. This can include holds, restraints, use of sedation medication, NG feeding, self-harm, AWOL or any emotionally impactful incident for the staff.' This group also supported with the review and updating of recruitment materials (Appendix E) and interview questions.

Methods

Participants: HU staff were recruited through emails that contained a poster and a link to a Microsoft form survey. The primary researcher joined team meetings to promote the study and purposive sampling was utilized to ensure participation from a range of disciplines. Fourteen staff members agreed to participate in this study. This study was registered with AMaT as an audit and service improvement project and approved by the service's senior management and the Oxford Health Foundation Trust (OHFT) clinical audit team (Appendix F).

Procedure: Informed consent was gained via Microsoft forms and staff completed an online questionnaire to gather demographic information. Participants were contacted individually to conduct face-to-face or online semi-structured interviews (Appendix G). Interviews occurred between November 2023-March 2024, lasted on average 30 minutes, and were recorded through Microsoft teams using a secure OHFT mobile. All recordings were transcribed and anonymized for data analysis and to protect confidentiality.

Information on frequency/type of ECIs, restraints, and incidences per staff recorded between 01/03/2023 and 29/03/2024 was provided to the researcher by the service as anonymized data taken from the Trust Online Business Intelligence (TOBI); the HU's incident reporting software.

Data analysis

Thematic analysis (27) was utilized for the qualitative interviews. Interviews were transcribed verbatim. This allowed the researcher to become familiar with the interview material. Nvivo (28) was used to generate codes, "organising [the] data into meaningful groups" (27 pg. 88). Three interviews were co-coded by an assistant psychologist. Discrepancies were discussed and codes were modified accordingly. Finally, codes were organized into themes which were reviewed by the research supervisor. A reflexive journal was kept for the researcher to position herself and keep note of potential influences on the data (Appendix H).

Descriptive statistics were used to interpret all other data.

Results

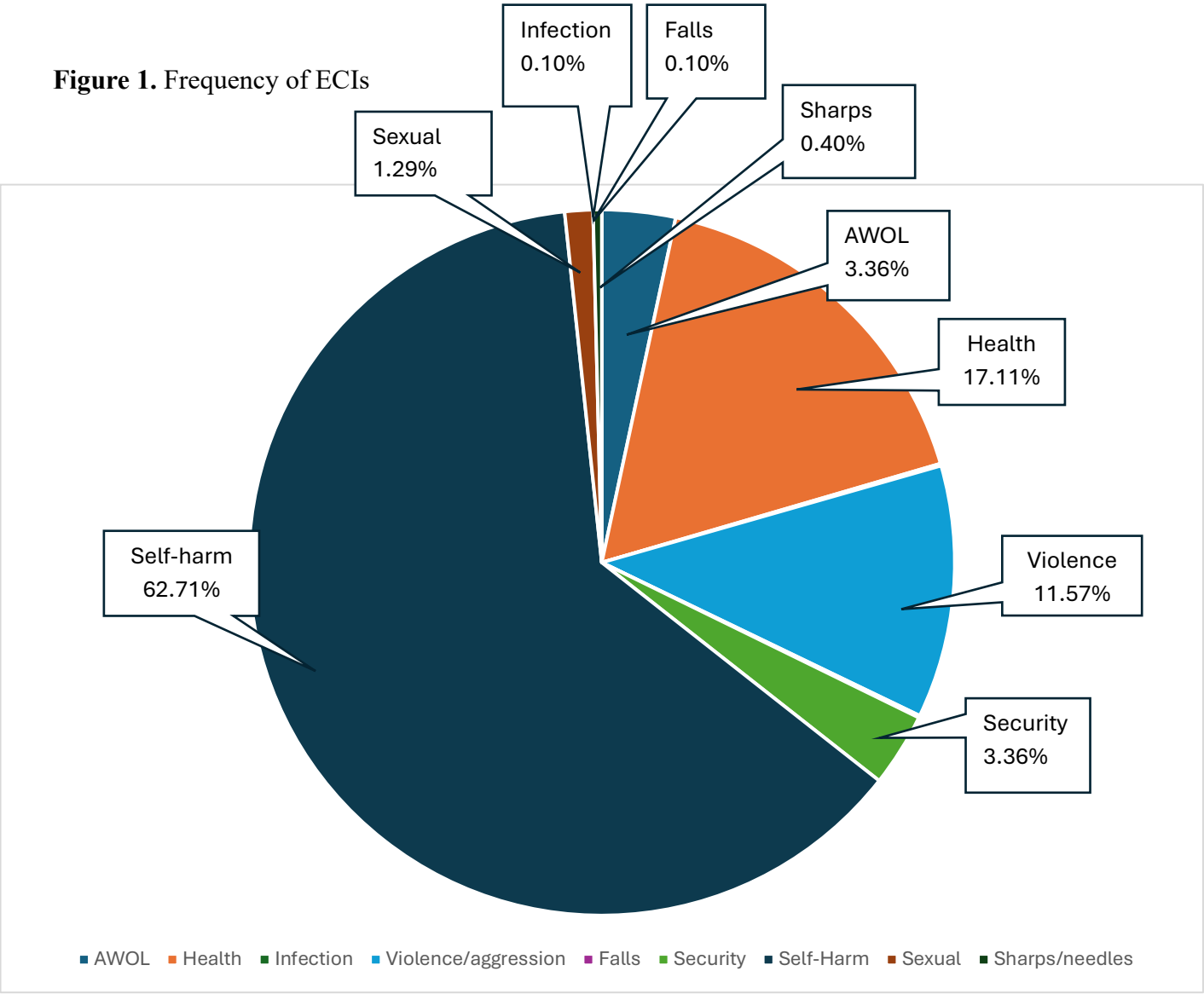
Demographic information:

On average, participants (n =14) were 31-years-old. 86% (n=12) were White, 57% (n=8) were health care assistants, 14% (n=2) were medics, and 29% (n=4) were qualified nurses. Most of the participants (71%; n=10) identified as female. Overall, the average time participants worked on the ward was 5.4 years.

Audit:

Incidences recorded on TOBI were comprised of a broad range of categories. The researchers agreed on a list of incidences considered to be emotionally charged to be included and excluded all other data (Appendix I). A total of 1011 ECIs (figure 1) were recorded during the audit, the most frequent being self-harm (62.71%) followed by health-related incidences, such as NG feeds (17.11%) (Appendix J).

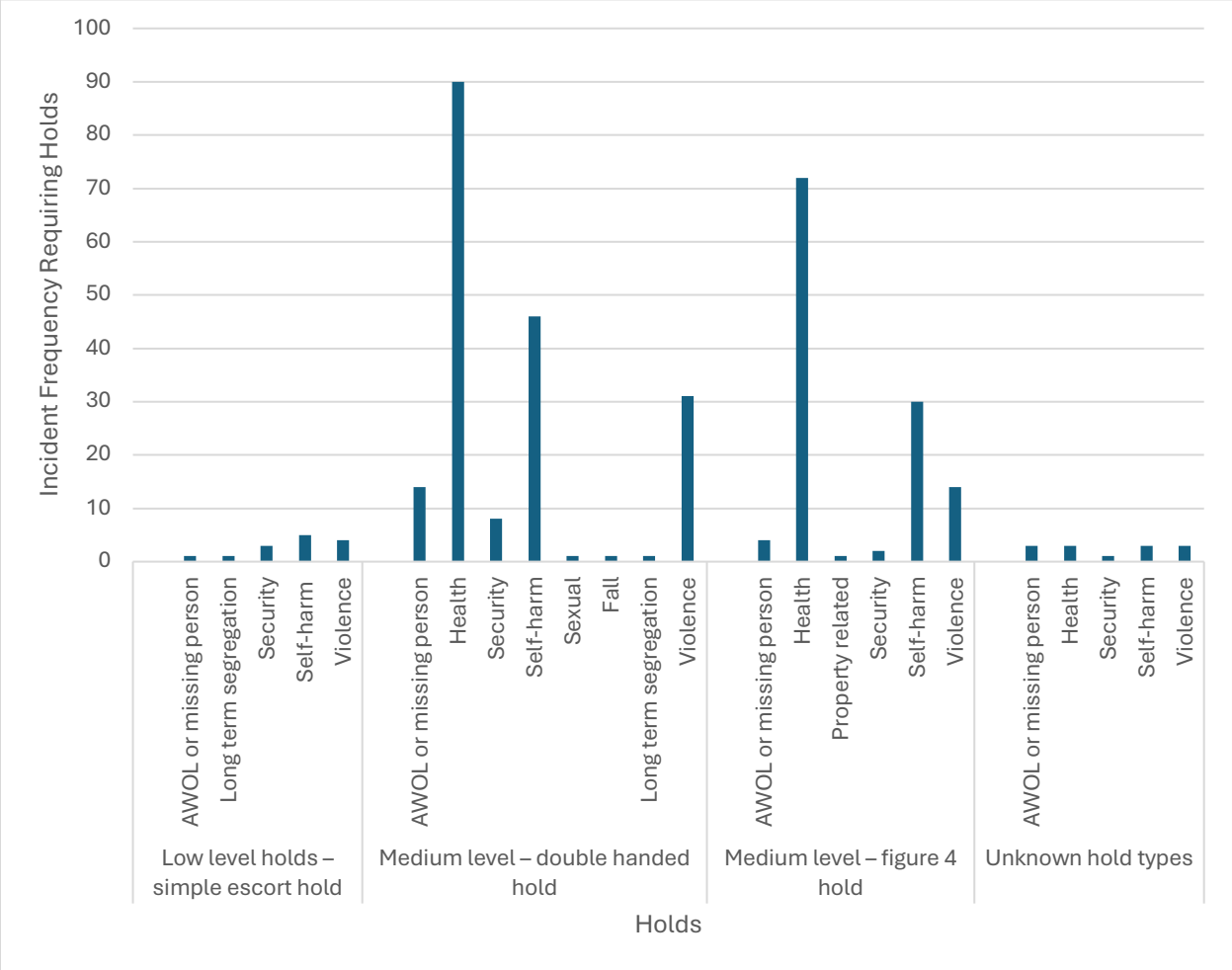
Figure 1. Frequency of ECIs



[1]*AWOL - attempted/risk of AWOL, detained-no leave, detained-escorted, not returned from leave; Health-related incidences - resisting NG feeds, resisting/refusing treatment, self-neglect, physical condition; Infection - staff exposure to bodily fluid; Violence/aggression - physical/verbal abuse, property damage; Falls - patient fall while mobilizing; Security - banned items/weapons, unsafe access, risk to staff, breach of environment, vandalism, deliberate property damage; Self-harm - ligatures, cutting, overdose, self-striking, re-opening wounds, ingestion of harmful items, other; Sexual - staff affected, allegations patient-to-patient, patients in compromising situation; Sharps/needles - contaminated needlestick/sharps injury staff.*

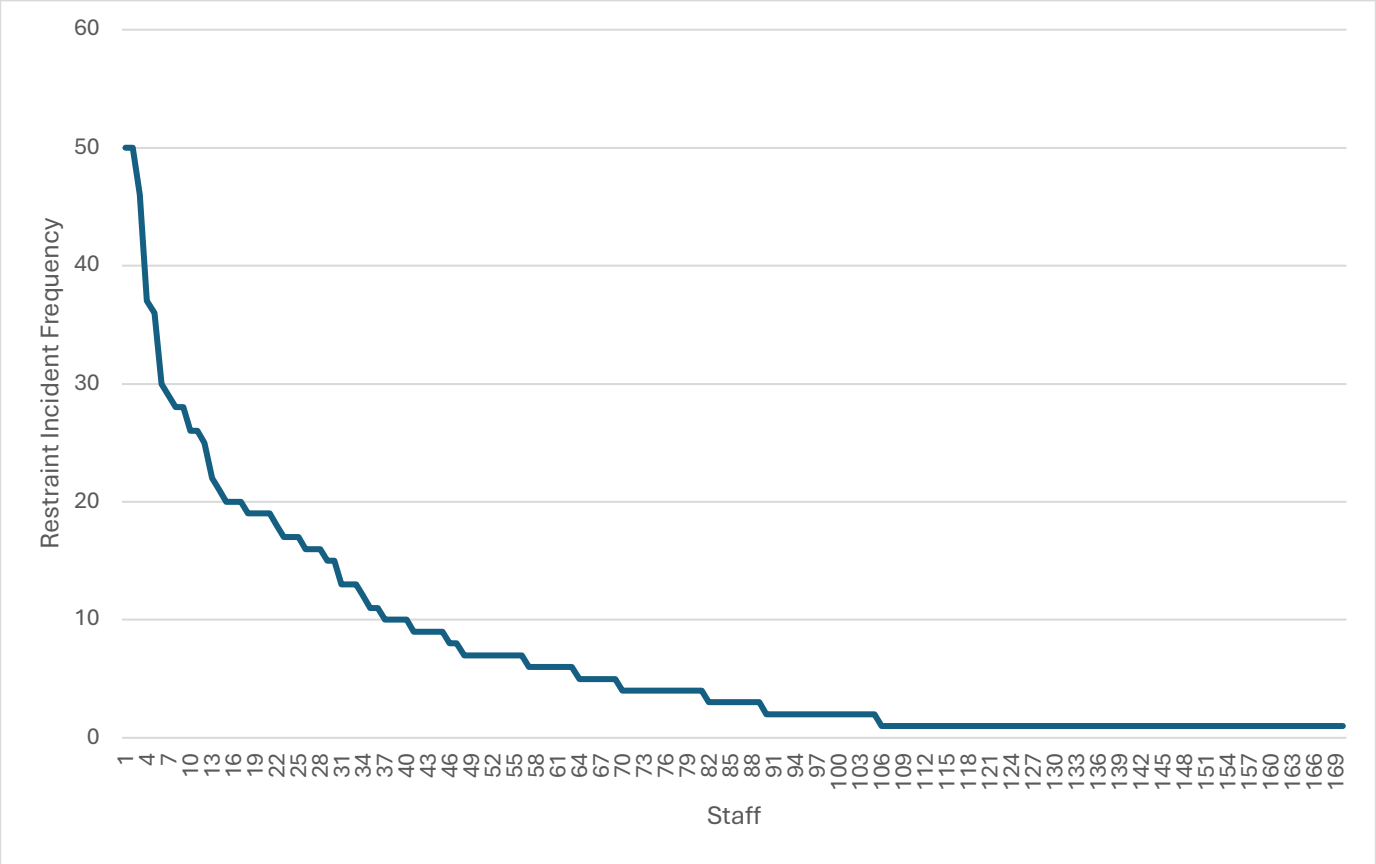
Furthermore, a total of 342 incidences requiring restraints were reported (figure 2). The most frequent being health-related incidences (such as NG feeds), accounting for 48% of all restraints.

Figure 2. Incidences of restraint



A total of 170 staff were involved in at least one incident of restraint throughout this period (figure 3). Some were involved in a higher number than others, with six staff members having been involved in 30 incidences or more.

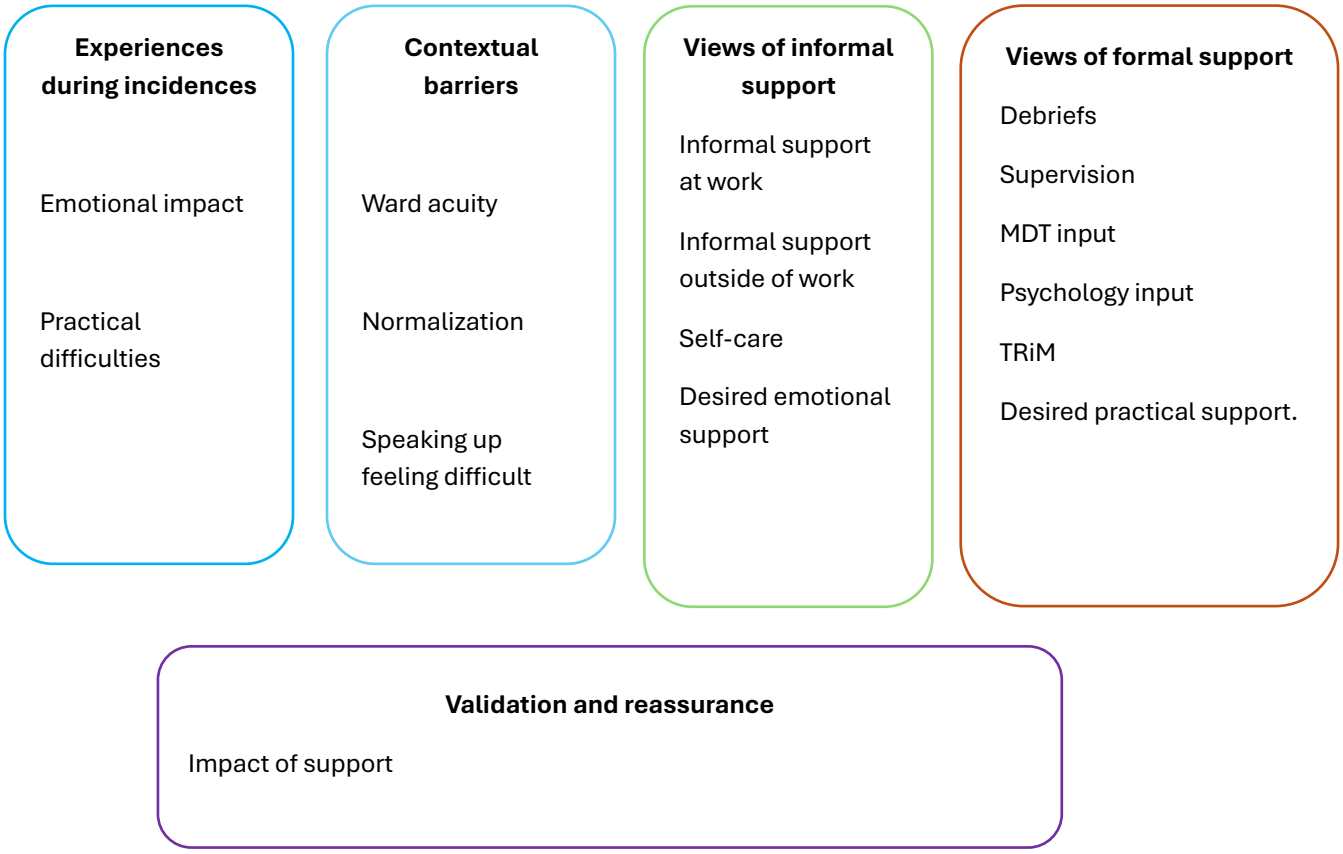
Figure 3. Frequency of restraint incidences per staff member.



Qualitative findings:

The thematic analysis identified five themes with individual subthemes (figure 4). Additional quotes are outlined in Appendix K.

Figure 4. Themes outline.



1. **Experiences during incidences:**

Staff recognized that certain types of incidences were more emotionally charged and easily recalled than others including self-harm, suicidal behaviours, violence/aggression, and NG feeds. Such incidences had an emotional impact on the staff who experienced difficult and often confusing feelings including anger, guilt, distress, and sadness that they had to compartmentalize for the sake of their work, the YP, and their colleagues: *"I've repressed my anger and as nurses you're not meant to be angry at a patient. But if you take it out of that context, and someone spits at you…anger is the absolute appropriate emotion to feel in that situation. But when you're a nurse, you're taking a lead on emotional[ly] charged incidences...you can't be angry"* (P13).

Staff also discussed being expected to participate in procedures against a YP's wishes, creating a sense of cognitive dissonance: *"You carry a bit of guilt as well because even though you know in your head that it's a life saving measure, still having to experience and inflict that kind of trauma on someone[…]sometimes can just feel really difficult to sit with"* (P2). Staff often questioned themselves and a few even experienced lingering symptoms*: "I was starting to have nightmares"* (P6).

ECIs were made more challenging when staff experienced practical difficulties during incidences such as a lack of communication and having limited experience: *"It was one of those situations that I've never come across before[…]it's also the first time that I have been the only person that was trained to do the majority of the things that needed to be done. So, it was bust, or I do it. So that was tricky."* (P9).

2. Contextual barriers

Ward acuity was a major barrier to the support provision: *"I think [ward acuity] affects our ability to think and to take a break, and as a system, as a unit, we're sort of back-to-back" (P13).* Some staff explained how difficult it is to take time to process the incident when there is high need and limited resources*: "high stress incidents tend to happen on a ward where it's incredibly stretched and busy in the first place and to prioritise your time above other patients doesn't often fit comfortably or naturally for staff"* (P11).

As ECI are frequent, many felt that a normalization of incidences began to emerge. For some, knowing that these incidences are *"part of being in a mental health ward"* (P1) helped them cope with distress. For a couple, the length of time spent in such roles seemed to impact

this notion. However, others expressed this normalization made it more difficult to seek support: *"it makes it harder for people to[…]not necessarily saying here, but it does make it harder for people to feel the need to seek support if they want it, because there might be a culture of, 'well everyone else is just getting on with it'"* (P12). Normalizing incidences as 'routine' can be detrimental to staff who may have been impacted: *"the staff member felt it was played down a bit[…]when it's a routine incident then I think sometimes the sort of individual can be a bit kind of forgotten"* (P1).

As a result, some found speaking up to be difficult as they were worried about *"bother[ing]" (P4)* people or it being perceived as *"a weakness",* that *"they can't manage the job"* (P5). The context in which support is provided impacts how able individuals feel to express distress: *"I know that not everyone's comfortable to say in a room full of people, 'actually no, I didn't like that'"* (P8). While overall things were felt to be *"quite good"* (P13), a few expressed that on occasion post-incident conversations would involve blame or criticism which contributed to the worries on speaking up: *"where emotions are heightened, people may be anxious or frustrated or angry, there can be an, 'oh you did this', and it can be[…]said in a way that's maybe not as helpful"* (P13).

3. Views of informal support

Informal support at work such as talking with colleagues was valued: *"there's a lot of checking in, whether or not that's in an official space like debrief or just informally in passing[…]which is really nice"* (P3). Additionally, offering distraction and acts of kindness were considered to be supportive: *"The HCAs that have been here a little bit longer that*

understand, might come make you a cup of tea[…]bring you a biscuit, which is always very appreciated." (P13). Staff found the team to be supportive, which helps encourage them to seek support: *"I've absolutely got no shame in asking the support. It's a very supportive ward"* (P3).

The importance of informal support outside of work was described by many as leaning on friends and family as a source of comfort: *"I have a very supportive wife"* (P7). Nevertheless, staff acknowledged the difficulties of seeking support from people outside of work due to feeling there was a lack of understanding of their experiences*: "even if I brought all of my family members here for two weeks, they're still not going to understand what I've been doing with my life in my career for [so many] years. They just won't get it"* (P9).

Self-care such as prioritising their own mental health and building coping strategies was seen as essential to maintain wellbeing such as engaging in activities that they enjoy: *"I loved gym[…]reading. Lots of that kind of thing. It cleared my head"* (P10).

Despite the positive attitude towards the informal support, staff discussed desired emotional support that was missing. This largely revolved around acknowledgement from supervisors/management and providing support without the expectation of staff requesting it considering this can feel difficult: *"I think it's about taking you aside, maybe just sitting you down and asking like, you know, 'we heard that it was different incident', you know, 'what happened?' Like, I think I would have preferred that, and then I would be able to talk to them about that. But if someone just asked me, 'are you OK?' I'm going to say 'yes, I'm OK'"* (P4).

4. Views of formal support

Debriefs are considered the main form of immediate support following an ECI which had helpful aspects included its timing; *"I think what was helpful was the immediacy of the debrief we did afterwards"* (P2). Having a chance to reflect with more experienced colleagues was likewise valued. One medic expressed the importance of joining debriefs despite not being part of the incident, not only to support their colleagues, but to gain a better understanding of the YP they care for*: "we are making decisions about management plan, and if we're not kind of hearing exactly how it is on ground, I can imagine it feels that people are making decisions which influence them without really getting it"* (P12). While it was agreed that immediate debriefs are helpful to discuss the incident and receive practical support, it can feel too soon to discuss emotional reactions*: "for me, when everyone asks me 'how are you, are you alright' like right after[…]I wasn't in it. I wasn't down from that intense moment. I'm still ready for something else to happen[…]I'm not really thinking, I'm really feeling at the moment. I'm just doing"* (P10). Staff expressed still experiencing adrenaline and finding it difficult to express their emotions, opting to tell their colleagues they are ok considering they must finish their shift. While debriefs are common, a few recalled incidences where no debriefs were provided and the impact this had*: "I felt very emotional after [the incident] because I'd really sort of tried very hard to really connect with [the YP][…]rather than waiting a month for my supervision, I probably could have done with having that conversation[…] separately with someone"* (P1). It was noted that oftentimes practical barriers made it more difficult to conduct or attend a debrief such as incidences occurring at night or towards the end of a shift, ward acuity, or number of staff involved. The question of *"who debriefs the debriefer?"* (P13) was also raised. Nurses discussed the pressure that is put on them following incidences, *"we tend to lead but we also tend to*

*debrief, so the nurses hold a lot of it" (*P11) and mentioned that more formal debrief support is missing: *"when you're either the nurse in charge or one of the most kind of senior ones on shift, no one checks in on you. Or they do, but they don't. It's more, informal, or like more like a colleague checking in on a colleague"* (P14).

Most staff found expressing their concerns and emotions in supervision to be a more supportive space*: "I have excellent supervision[…]she's very good at holding what I need her to and helping me sort of offload it."* (P11). They especially reflected on the importance of supervisors providing support outside of monthly sessions but mentioned it is often up to the staff member to request this.

MDT input was seen as a crucial element of support. However, the current structure of meetings (including reflection sessions) was felt to be difficult to access: *"the thing with reflections is that it happens at a time when we are swapping over from late to an early. So, there are a lot of people who are on a long day who can't access that one hour so if they miss it that week, it's like they carry it over to the next week and then you've already had so many more incidents in that week, did not process the ones before that"* (P4).

Staff acknowledged knowing that 1:1 psychology input is available for situations that were felt to be more difficult to manage but didn't provide further details of accessing this provision:*"like it's nice that it's there, even though I haven't really used it[…]I do like hearing [the emails] and reading that[…]it feels contained"* (P1).

Staff mentioned being referred to and accessing TRiM following specific incidences. TRiM was seen by a few as being a helpful and therapeutic space to help them work through the incident: *"It was pretty good actually. It really helped go through the process and how to put*

words in and expressed it" (P10). However, while one person wondered what prompted TRiM to become involved: (*"I feel like I don't know what's triggered [the referral]"* (P9)) another felt the support wasn't needed for that incident, and a few mentioned having little understanding of what TRiM meant when it was offered: *"It was kind of like, so briefly mentioned and I was so overwhelmed with like just like everything. I don't really remember understanding this[…] And then it was never, like followed up and so, I didn't really have [TRiM]. I think it was just mentioned, 'oh, we have support. You could talk to TRIM. You can talk to your supervisor' like a sort of throwaway comment rather than a, 'would you like this this?'"* (P5).

The general sentiment was that the staff felt supported: *"I think in general here, we are in incredibly supportive. I think we have an incredibly good group, good MDT, management in general."* (P6). Protecting MDT and reflection meetings, scheduling check-ins in private spaces, and prioritizing debriefs were some of the desired practical support staff expressed was missing. Another was increasing communication about the types of support available: *"Knowing that those avenues exist and clearly signposting who to e-mail or who to call"* (P6).

5. Validation and reassurance

The importance of receiving validation and reassurance was embedded across all themes and was valued whether it came from colleagues, supervisors, or senior management: *"I think the sort of the wider acknowledgement that the nursing team, so healthcare assistants and the qualified nurses, do the really tough bit of this job, and I think that's a wide acknowledgement by the MDT who quite often facilitate debriefs[…]it's very helpful"* (P11). Validation was felt to support the processing of meaning-making: *"like somebody going, 'you did what you could. You*

did well.' Then you feel like, OK. Right. You know? It's just nice to know that[…]because you do question yourself. So, in that regard it makes you feel better about the incident itself" (P6). When validation and reassurance were not provided, staff members noticed it was missing.

The impact of the support, formal or informal, became evident. Staff spoke about how the support affected the way they viewed the incidences (*"so just validated with me as a professional and it helped me move past it quite quickly"* (P11)), especially when experiences were acknowledged by senior colleagues in debriefs. Discussing difficult events and working through their roles in them was helpful and supported staff to continue on with their jobs: "*It made me feel that I'd done the best that could have been done"* (P13). This ultimately improved clinical practice: *"It gave me more sort of understanding of how to support [the YP] better the next time, how to communicate with them, and what to do differently"* (P4).

Discussion

This research aimed to understand staff experiences of the post-incidence support in an adolescent inpatient unit in the UK. The audit conducted provides key contextual information regarding the acuity of the ward. For instance, high frequency of ECIs were found to occur over the one-year period, with the majority being due to self-harm and health-related incidences. Restraints occurred most frequently as a response to health-related incidences with some staff involved in a higher proportion of restraints than others. Staff interviews were also conducted which resulted in five key themes: 'experiences during incidences', 'contextual barriers', 'views of informal support', 'views of formal support', and 'validation and reassurance'.

Links to research

The audit's findings are in line with previous research in which incidences of aggression, self-harm, and restraints are frequent within adolescent inpatient services (7, 29). These incidences were likewise the most emotionally impactful for the HU staff and resulted in staff questioning themselves and experiencing emotional distress, which is supported by previous research (8) Nuances such as the juxtaposition between the guilt and sadness experienced when going against the patient's wishes and knowing that the procedure and use of restraints is necessary for the YP's safety/health has been found in studies of adult populations (30). Such incidences were common considering the audit demonstrated that some staff were involved in more restraints than others. Differences in exposure may be due to factors such as shift timings (restraints are common later in the day), policy knowledge (31), years working on the ward (interviewees indicated permanent staff may be more exposed to ECI), or job role (interviewees highlighted different exposures in the nursing team and medics). Some HU staff mentioned long-lasting effects as they experienced nightmares and hypervigilance. While in-line with research in adult wards (15, 32), adolescent PICU nurses experienced lower levels of secondary traumatic stress (33). This may be due to the greater staff-to-patient ratio in a PICU, or potentially due to staff difficulties in identifying symptoms. The CSDT identifies that the impact of a traumatic incident is partly determined by previous experiences/resources as not everyone will develop mental health difficulties following such an event. Therefore, some individuals may be at greater risk of developing trauma symptoms following incident exposure. This is supported by a systematic review that identified various risk factors for PTSD in mental health nurses including type of exposure, cumulative exposure to aggression, quality of training, mental health difficulties/emotional reactivity, burnout, to name a few (34).

With regards to the support provision, HU staff value immediate debriefs. However, there were different views as to whether this space should be geared towards immediate safety and incident practicalities or emotional processing. This is because some felt that they had yet to come down from the adrenaline long enough to reflect on its effects and were aware of the need to return to work. Problem-focused elements of debriefs have been found to be imperative considering ward acuity and post-incident mandatory tasks (8, 30). However, the current sample felt emotional processing was safer in supervision, reflective/MDT groups, or informal chats with colleagues. It is possible that such support helps staff connect with each other and see themselves as being competent clinicians which may serve to repair any disruptions to their frame of reference or cognitive schemas (16). Perceived social support has been inversely associated with perceived stress in mental health nurses (35) and PTSD symptoms in other populations (36). TRiM was found to be a helpful but poorly understood process. According to the CSDT, "trauma is defined by the individual rather than by the facts of the event" (17 pp. 190). When staff reported being referred to TRiM following incidences that were 'serious enough' it highlighted that what the service perceives as an ECI may differ to staff perceptions. Some staff may, for instance, have assimilated the event into their existing schema and engaged with the appropriate coping strategies to manage their distress, while others who were impacted may have been missed. This highlights the need for high-quality general post-incident support for all staff and ways to identify those that require additional support considering the risk factors identified above.

Exposure to ECI was seen by the HU staff as a 'part of the job' and staff expressed feeling that the ward was doing its best to provide support in the context of high acuity and staffing difficulties which is in-line with previous research (37). However, for some, this normalization

made it more difficult to express the incidence's impact for fear that they would seem like they weren't coping with the job's pressure. Fearing the repercussions of help-seeking and the stigma of being seen as 'weak' by colleagues is a common experience amongst inpatient clinicians (38). Additionally, staff spoke about the value of informal support. Conversations with colleagues were frequently sought and felt, by some, to be sufficient to cope with distress which is a consistent finding (24, 30). Family/friends were seen as a source of comfort but due to worries about breaking confidentiality and family/friend's difficulties understanding staff experiences they expressed it being challenging to lean on them for complex emotional support. Not confiding in family/friends for work issues is common (37), however, reasons for this haven't been explicitly stated until now.

Interestingly, whether it came from formal or informal support, validating emotions and providing reassurance of staff actions/feelings was seen as crucial. This is consistent with previous research in which receiving praise and recognition from colleagues, specifically senior clinicians, as well as from family/friends had significant impacts for staff professionally and personally (24, 38). Exposure to ECI's was found to make the HU staff question themselves and previous literature has shown that self-blame and criticism have been associated with greater PTSD symptoms and general psychological distress (39, 40). When viewed through the CSDT, trauma responses result from disturbances to cognitive schema's, thereby support that addresses these areas may help repair maladaptive appraisals (16, 18). Providing validation/reassurance and creating a supportive environment, may have allowed the HU staff to make sense of the incident and reduce its impact. This might have been by improving their ability to be self-

compassionate which has been associated with post-traumatic growth through "positive reframing, active coping, and instrumental support" (39 pp.161).

Strengths and Weaknesses

Compared to other studies (8), interviewing across professions with different ECI exposures provided a well-rounded picture of staff views while the audit provided information regarding service context. However, due to ward pressures, interviews were relatively short and only around 25% of staff were interviewed meaning experiences from other professions were not included (e.g., allied health professionals) as has been done in previous research (41). There may have also been a selection bias with those more impacted by ECIs choosing to participate which has been cited to be a common difficulty in qualitative literature (14, 41). Furthermore, interpretation of the findings may be impacted by the researcher's presence although attempts were made to account for this, as codes and themes were discussed with other researchers.

Implications

These findings have implications for staff support/wellbeing and service development. It is clear that when meaningful post-incident support is provided (informal or formal), staff can draw upon personal, social, and environmental resources to cope (serving perhaps as a stabilization phase), which may allow them to address disruptions to schemas caused by the ECIs to tolerate post-incident distress (16, 17). Adequate supervision, training, and informal support have been found to improve coping, job satisfaction, and morale of inpatient staff (42-44).

Future research

Considering HU staff are repeatedly exposed to ECIs, it would be helpful to explore the relationship between number/type of exposure and support needs, understand the frequency and type of incidences triggering TRiM referrals, as well as the effectiveness of TRiM. It may likewise be helpful to understand the rates of mental health difficulties (including PTSD) amongst staff utilizing validated measures.

Recommendations

Recommendations were developed based on staff ideas (table 3) to improve wellbeing considering the barriers they continue to face. These recommendations included the creation of a support provision leaflet, weekly psychology-led support sessions, changes to debriefs, addition of reflective practice sessions/peer support groups, consideration of gender in rota creations, and continuation of research, as well as highlighting the importance of validation and reassurance. The findings were disseminated to the HU during a management meeting. Feedback was collected and recommendations were modified accordingly.

Table 3. Service recommendations.

Practical Recommendations	Feedback
Creation of a support provision leaflet that is updated every 6 months and added to the induction resources for new staff members and medical/nursing/psychology students (who may not be aware of support avenues when beginning placement) with information regarding types of support available, how to access the support, who the debrief champions are, the purpose and referral process for TRiM, and types of external support staff can access.	The HU expressed this leaflet was a good idea as they noted that the various support avenues can become confusing for staff and felt it was important for a document to be created that staff can keep rather than distributing information via emails that are easily lost. They likewise agreed to provide such leaflets to new students/trainees.
Making staff aware of who the debrief/wellbeing champions are in the service along with an introduction to their role would be helpful to model a culture where seeking support is not stigmatized.	The HU expressed that there had been a gap in identifying the new debrief champions and that they agree it is important for the team to get a sense of who the new debrief champions are and what their role entails.
Immediate short debriefs should occur following incidences but could be more focussed on practicalities of the incident including staff safety and areas of improvement while fostering a non-judgemental safe space and encouraging emotional support to be sought via supervision, reflection meetings, MDT etc.	The HU felt this was a good recommendation considering the findings and mentioned that there is a psychologist who would be particularly interested in this as they are working on improving the quality of the debrief process.

Nurses leading the debriefs could likewise be provided with a structure for the immediate debriefs to aid with consistency.	
Psychology team could provide weekly pop in support sessions to provide the space for additional support to discuss incidences if needed downstairs in the ward area to allow for better accessibility. All psychology team members could be added to a rota to reduce the burden of one clinician holding this space every week.	The HU felt that there was a good probability that such pop in sessions could be facilitated.
Reflection meetings could be held twice a week at different times to allow more staff members to join. These meetings should be a protected time for all staff.	Recommendation will be taken on board by the HU team.
Peer support groups to be conducted once a month.	It was agreed during the management meeting that creating a formal space for peer support might take away from the valued informal peer support often sought and could be difficult to facilitate.
Medics/other professionals could join debriefs, if possible, despite not being directly involved in the incident to provide support to the nursing team and improve communication of important incidences and support with clinical practice.	Recommendation will be taken on board by the HU team.
For all staff to keep in mind that private confidential spaces might be preferred when checking-in with others.	This recommendation was acknowledged by the team.

Keeping in mind male:female ratios when rotas are being created due to the fact that some YP may require all female staff which increases the pressure put on those individuals, while others discussed being exposed to difficult situations supporting YP of the opposite sex. Providing staff with appropriate spaces to discuss the impact of such events was felt to be important.	The HU staff agreed that this was a good recommendation but noted it can sometimes be difficult. Nevertheless, they agreed this is an area that they would like to continue working on and asked for the recommendation to remain.
Additional audit/research projects could be conducted to investigate… - The relationship between number and type of exposure and support needs amongst staff. - The frequency of TRiM referrals and types of incidences triggering referral process to provide additional information on how these incidences are being identified. - The frequency of debrief provision and the potential factors that may have made it more difficult for the debrief to take place.	The HU team likewise identified a need to further understand why some staff are more exposed to ECIs than others and mentioned being curious to break the data down further into professions and length of time working on the ward.
Emotional Recommendations	
All staff members to be aware of the value and importance of validation and reassurance in formal and informal settings.	Recommendation will be taken on board by the HU team.
Staff keeping in mind the importance of attending debriefs even if the incident was not emotionally charged for them as their experience and support is seen to be valued amongst other team members. For this to be encouraged by management.	Recommendation will be taken on board by the HU team.

For the service to continue communicating the importance of staff wellbeing and encourage help-seeking behaviours.	Recommendation will be taken on board by the HU team.
For managers to keep in mind the pressure on the nurses leading debriefs and to provide follow-up support to them to discuss the process considering they hold a majority of the initial run off of emotions.	Recommendation will be taken on board by the HU team.
Supervisors and management keeping in mind that staff are likely to express that they are ok if asked immediately following an incident. To take into consideration booking a slot for staff to know that it is available should they need to discuss the incident further. Staff have expressed the wish to ‘have support thrown at [them] and for it to be up to [them] to say no” (P5) rather than it being up to them to request the support if needed.	Recommendation will be taken on board by the HU team.

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Part 3: Theory-Driven Research Project

Understanding the relationship and impact of civilian reintegration, meaning making and moral injury in UK military veterans: A Theory-Driven Research Project

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Word count: 5636 (tables of more than 100 words were counted as 100).

Submission date: 05/08/2025

Target Journal: Military Psychology – *this is an internal journal focusing on research pertaining to psychology within the military context. This paper will be formatted to the author guidelines when submission is sought for publication.*

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Abstract

Moral injury (MI) is a psychological difficulty in which a person experiences significant shame and guilt as well as potential spiritual conflict following exposure to incidents that have transgressed one's moral code. Previous research indicates significant levels of MI among military veterans. Qualitative studies have alluded to the potential influence of reintegration difficulties on the onset of moral injury symptoms. However, no quantitative research has been conducted on this topic thus far. The current study aimed to understand the relationship between moral injury, meaning making, and reintegration into civilian life in UK military veterans exposed to potentially morally injurious events (PMIEs). Participants were recruited online via social media and were asked to complete an anonymous online survey including key questionnaires; 174 veterans participated in the study. It was hypothesized that those with high exposure to PMIEs would have lower levels of meaning making, less adaptive reintegration into civilian life, and higher symptoms of moral injury. Results showed significant group differences with all hypotheses supported. The clinical implications of this research are discussed within the context of the findings and its limitations.

Introduction

Due to the nature of their duties, military personnel are often exposed to challenging experiences that can significantly impact their mental health. These includes life-threatening, fear-based events often associated with post-traumatic stress disorder (PTSD; Wittchen et al., 2012), as well as morally distressing situations such as committing or failing to prevent harm, or witnessing violence, hardship, and injustice which have been associated with the development of moral injury (MI; Currier et al., 2015).

MI is not considered a diagnosis but rather a mental health difficulty that results in symptoms of shame, guilt, loss of hope, anger, isolation, changes in self-perception, and spiritual struggles due to exposure to potentially morally injurious events (PMIEs) (Griffin et al., 2019; Houle et al., 2021). A PMIE occurs when one's moral code has been transgressed by being the perpetrator of an event, being unable to stop it, or witnessing an event that went against one's core moral beliefs (Litz et al., 2009). PMIEs are common amongst military populations, such that over 60% of a sample of deployed Canadian soldiers reported being exposed to at least one (Hansen et al., 2021). Greater exposure to PMIEs has been associated with greater severity of MI symptoms in U.S veterans (Hamrick & Bravo, 2020). In treatment-seeking UK veterans, exposure to some adverse military events has led to greater reporting of MI symptoms (Williamson et al., 2021). However, it is unclear whether these events were potentially morally injurious and whether this finding generalizes to non-treatment-seeking samples. This indicates a need to further explore the relationship between PMIEs and MI in such veterans.

This is important as the main working model of MI, developed by Litz and colleagues (2009) and influenced by PTSD theories such as the social-cognitive, emotional process, and cognitive theories of PTSD, posits that MI cannot occur without transgressing one's moral code, followed by an awareness of the incongruity between one's beliefs and the transgression. Nevertheless, exposure to a PMIE by itself is necessary but not sufficient for MI to develop (Biscoe et al., 2023). Instead, it is the meaning made of the event that is theorized to be essential for the development of MI.

Meaning making

Park (2010) stipulates that following stressful events, it is the individual that will determine its meaning; if the meaning assigned contradicts/challenges one's wider narrative, it can lead to distress. Therefore, how able one is to mend the discrepancies between one's fundamental beliefs/values with the specific stressful event determines whether one is able to adaptively integrate the event into one's wider narrative and reduce the distress experienced (Currier et al., 2015; Park, 2010). As it relates to MI, Litz et al's (2009) model proposes that if meaning made results in maladaptive attributions that are stable (persists), internal (attributed to a personal characteristic), and global ("not context dependent"), it likely results in shame, guilt, anxiety, and anger. Other authors (Currier et al., 2015) describe this as having fewer adaptive abilities to integrate the event into their broader narrative. As a result, strategies including rumination, isolation, and suppression are utilized to cope, which further delays the updating of the meaning made of the event (Murray & Ehlers, 2021).

The way one understands and makes meaning of the event seems to, in part, explain the activation of MI symptoms after exposure to a PMIE (Currier et al., 2015). Veterans with the greatest PMIE exposure demonstrated decreased abilities to make meaning in a way that would allow them to adaptively integrate the discrepancies experienced, which subsequently impacted their mental health (Currier et al., 2015). Qualitatively, veterans with MI describe that following PMIE exposure and the experience of "moral dissonance", their previously held beliefs about themselves, the military, and its purpose were altered (Williamson et al., 2020 pp.5). Furthermore, we know from literature conducted on refugees that how meaning is made when exposed to PMIEs can have different impacts on the types of symptoms endorsed overtime (Nickerson et al., 2022).

In previous studies, PMIEs exposure has therefore been associated with greater difficulties making sense of the event and adaptively incorporating it into one's life story. However, it is important to further quantitatively explore and understand the relationship between PMIE exposure and meaning making within UK veterans. In this study, low levels of meaning making will refer to greater difficulties adaptively integrating the PMIEs into one's narrative or meaning making process. However, meaning making may not be the only factor impacting the development of MI.

Re-integration into civilian life:

In the presentation of their model, Litz et al (2009) argue that while individuals are in a military context, the shared military moral compass developed based on the rules of engagement,

training, and the overall comradery experience might impact one's experience of a stressful event. Once the context shifts, such as to a peacetime civilian context, so might their moral compass and the meaning made of the event, leading to greater difficulties integrating the PMIE into their life story and seeing it as a moral transgression. Some authors note that this is not currently addressed in the model itself (Held et al., 2019).

We know from the PTSD literature that social context impacts how individuals make meaning of traumatic stressors, with some authors suggesting one's social context is "the very source of meaning itself" (Brinn & Auerbach, 2015 pp.82). In fact, Danish soldiers were found to experience varying degrees of reintegration difficulties depending on PTSD symptomology (Karstoft et al., 2015). While PTSD and MI are distinct constructs, they are comorbid and share some symptoms (Barnes et al., 2019; Bryan et al., 2018; Koenig et al., 2020) and so it may therefore be theorized that social context, especially during reintegration, may likewise be crucial in MI.

Qualitative studies provide some support for the proposed hypothesis that reintegration may be important for MI; despite veterans realising they had transgressed their moral code during or immediately after the event, MI symptoms were not experienced until their return to civilian life where they were faced with reminders of what had occurred (Held et al., 2019). Another study found that while a veteran may have perceived their military experience as being noble, exposure to a PMIE and for some, the reintegration process itself, changed this perception (Williamson et al., 2020). Difficulties reintegrating into civilian life may therefore play an important part in

one's meaning making process of PMIEs that occurred during their service, thereby increasing the risk of developing MI. However, to understand whether reintegration is important within the MI model, it is first crucial to understand whether reintegration difficulties are associated with PMIE exposure as MI cannot occur without such exposure. One study by Danson and colleagues (2025) describes the impact of PMIE exposure on reintegration; ""David" described how his experience of being forced by his leadership to hide incidents of corruption and sexual abuse impacted his ability to trust others upon reintegrating" (Danson et al., 2025 pp.6) leading to social isolation. There is therefore some qualitative data that suggests PMIE exposure may be associated with greater difficulties reintegrating, but this has yet to be tested in a published quantitative study, to this author's knowledge.

Rationale

While there is evidence suggesting that meaning making is key in the development of MI, some qualitative studies have suggested that the veteran's reintegration also plays a role. A veteran's reintegration into civilian life is a key transition point where their context and social support goes through drastic changes. However, whether reintegration difficulties are important to MI has yet to be quantitatively explored in a sample of UK military veterans. The aim of this study was therefore to understand the relationships between moral injury, meaning making, and reintegration within UK military veterans who were exposed to different levels of PMIEs.

Research Questions and Hypotheses

The study has been designed to test the following hypotheses:

- H1a) Those in the high intensity exposure group will score higher on MI than those with lower intensity exposure to PMIEs (indicating greater symptom severity) – *confirming previous research*
- H1b) Those with high intensity exposure to PMIEs will score lower on meaning making than those with low intensity exposure to PMIEs (indicating less adaptive integration of an event) – *confirming previous research*
- H1c) Those in the high intensity exposure group will score lower on the reintegration measure than those with lower intensity exposure to PMIEs (indicating lower level of adjustment).
- H2) Reintegration will explain a significant portion of the variance in MI.

Methods:

Participants

This study recruited UK veterans; defined as any person who has served at least one day in the British Armed Forces and is no longer in active service. For this study, regular reservists were included. Participants were required to be 18-years or older, currently living in the UK, and not currently serving in another country's military. Sample size was calculated with G-power which demonstrated a sample of 159 being sufficient to obtain 80% power (alpha of 0.05) and an effect

size of 0.25. A medium effect size was calculated based on previous research (Aldridge et al., 2019; Houle et al., 2021).

Patient and Public Involvement.

Three UK veterans participated in a focus group where they supported with the development of the project. Participants worked in the OpCourage Veterans' Mental Health and Wellbeing Service; however, they were recruited based on their lived experience as veterans rather than their job (Appendix N).

Procedure

Recruitment occurred through social media with a recruitment poster circulated online that contained a brief description of the study and a link to a Qualtrics survey. This survey contained a participant information sheet and inclusion criteria questions (Appendix O). If all criteria were met, participants were asked to fill out demographic questions as well as four psychometric questionnaires. This study was anonymous.

Ethics

This project was provided with ethical approval from the University of Oxford Central University Research Ethics Committee (CUREC) (reference number: R92110).

Measures

Potentially Morally Injurious Events

The Moral Injury Events Scale (MIES) (Nash et al., 2013): this 9-item self-report scale aims to capture exposure to PMIEs on a 6-point Likert scale which runs from 1 (strongly disagree), to 6 (strongly agree). Higher scores indicate greater perceived intensity of events (range between 9-54). The current scale has good convergent and discriminant validity and is considered reliable among military populations (Plouffe et al., 2023).

Moral Injury

The Moral Injury Symptom Scale (Koenig et al., 2018)– Military Version Short Form (MISS-M-SF): This 10-item scale measures symptoms of MI. Each item is rated from 1 to 10. Five items are reverse scored, and all items are summed for total scores between 10-100. Higher scores indicate greater symptom severity. The MISS-M-SF is considered a reliable and valid measure among military populations (Koenig et al., 2018).

Reintegration

Military-Civilian Adjustment and Reintegration Measure (M-CARM) (Romaniuk et al., 2020): This 21-item self-report measure assesses a veteran's reintegration into civilian life. A 5-point Likert scale is used ranging from 1 (Disagree) to 5 (Agree). The sum of all items is calculated (with 13 items reverse scored). Total scores range from 21-105 with greater scores meaning a higher level of psychological adjustment and cultural reintegration. This scale has been shown to

have strong internal consistency (a = 0.90) and test-retest reliability (r = 0.93) among Australian veterans (Romaniuk et al., 2020).

Meaning making

The Integration of Stressful Life Events Scale (ISLES) (Holland et al., 2010): This 16-item self-report scale assesses one's ability to adaptively integrate an event, in this case a PMIE, into their overall life narrative. A 5-point Likert scale ranging 1 (strongly agree) to 5 (strongly disagree) is used. One item is reverse scored. Total sum ranges from 16-80. Greater scores indicate better integration of a life event. The ISLES demonstrates strong validity among American Veterans of 0.79 and 0.97 in both comprehensibility and footing in the word subscales (Currier et al., 2011).

Design and Analysis

For this cross-sectional study, demographic characteristics were descriptively analysed. The MIES scale was split into thirds utilizing percentiles to form the following categories: high (scores of 33 and above; n = 56), medium (scores between 20-32; n = 58), and low intensity exposure (scores 19 and below; n = 60) to PMIEs. The percentiles were formed from the data collected. The MIES does not report cut-offs or thresholds. A visual inspection of the data likewise did not provide any obvious splits. Exploratory analyses were conducted to understand the relationships across all data, including the demographic variables. All data was analysed using SPSS.

Primary analysis:

To test H1, an ANOVA was conducted with MI symptoms (MISS-M-SF) as the dependent variable and PMIEs exposure group (high, medium, low) as the independent variable. For the second hypothesis, the ANOVA's dependent variable was meaning making (ISLES). For the third hypothesis, the ANOVA's dependent variable was reintegration (MCARM). For statistically significant results, follow-up post-hoc pairwise comparisons were analysed to understand where the significance lies.

To test H2 a hierarchical regression analysis was run to determine whether reintegration explains a significant proportion of the variance in MI after accounting for PMIE exposure, years in service, years since discharge, meaning making, and reintegration.

Results

Descriptive data:

The sample included 174 UK veterans of which 92% were over 40-years-old, 92% were White, 89% identified as male, 71% had spent more than 10 years in the military, 76% had been discharged more than 10 years ago, and 82% were not currently in therapy (Table 1). Interestingly, the data indicates that the high exposure to PMIEs group had the greatest number of non-White individuals. Furthermore, this group likewise had the greatest number of participants who were currently accessing therapy while the medium exposure group had the greatest number of participants who were not accessing therapy.

Table 1. Demographic data by PMIEs exposure group

	Low exposure PMIEs (n = 56)		Medium exposure PMIEs (n = 58)		High Exposure PMIEs (n = 60)	
	N	**%**	**N**	**%**	**N**	**%**
Age						
18-28	-	-	-	-	1	1.7
29-39	6	10.7	2	3.4	5	8.3
40+	50	89.3	56	96.6	54	90.0
Gender						
Male (including transgender men)	51	91.1	52	89.7	51	85.0
Female (including transgender women)	4	7.1	5	8.6	8	13.3
Prefer not to say	1	1.8	1	1.7	1	1.7
Ethnicity						
White	56	100	54	93.1	51	85.0
Black, Black British, Caribbean or African	-	-	1	1.7		
Asian or Asian British	-	-	-	-	1	1.7
Other ethnic group	-	-	1	1.7	2	3.3
Prefer not to say	-	-	2	3.4	3	5.0
Mixed or multiple ethnic groups	-	-	-	-	3	5.0
Years in military						
1-3	-	-	2	3.4	1	1.7
4-7	15	26.8	8	13.8	10	16.7

8-10	6	10.7	5	8.6	4	6.7
10+	35	62.5	43	74.1	45	75.0
Years since discharge						
0-3	2	3.6	3	5.2	7	11.7
4-7	7	12.5	5	8.6	4	6.7
8-10	2	3.6	3	5.2	9	15.0
10+	45	80.4	47	81.0	40	66.7
Accessing therapy						
Yes	7	12.5	2	3.4	18	30.0
No	49	87.5	55	94.8	39	65.0
Prefer to say	-	-	1	1.7	3	5.0

Prior to the analysis, a correlational matrix was conducted to determine the level of association between each of the continuous variables (Table 2). All variables were found to be significantly correlated to each other.

Table 2. Correlational matrix – Pearson's correlations

	Exposure to PMIE	MI symptoms	Meaning making	Reintegration
Exposure to PMIE	-			
MI symptoms	0.742**	-		
Meaning making	- 0.637**	- 0.798**	-	
Reintegration	- 0.515**	- 0.723**	0.693**	-

Notes: p values of < 005 indicated with an *; values of < 0.001 indicated with an **

Spearman's correlations were run to test the association between the demographic ordinal variables of 'years in military' and 'years since discharge', with the continuous variables MI, meaning making, and reintegration (Table 3). 'Years since discharge' was significantly associated with meaning making and PMIEs exposure, however, no other significant associations were found.

Table 3. Spearman's correlations

	MI	Meaning Making	Reintegration	Exposure to PMIEs
Years in military	0.059	-0.075	-0.029	0.102
Years since discharge	-0.111	0.168*	0.104	-0.152*

Notes: p values of < 0.05 are indicated with an *

Considering the significant differences in sample size across the levels of the 'accessing therapy' variable, Mann-Whitney U tests were conducted to understand the difference in MI, meaning making, and reintegration between those who were and were not in therapy. The 'prefer not to say' group was dropped for the analysis due to small sample size (N = 4). Visual analysis

indicated that the distribution of scores for the two groups was not similar across any of the dependent variables. The analysis demonstrated statistically significant differences between groups for MI, meaning making, reintegration, and PMIE exposure (Table 4).

Table 4. Mann-Whitney U Test for accessing therapy with two levels

	MI			Meaning making			Reintegration			PMIE Exposure		
	Mean rank	**U**	**Z**	**Mean rank**	**U**	**Z**	**Mean rank**	**U**	**Z**	**Mean rank**	**U**	**Z**
Accessing therapy – Yes (N = 27)	116.74	1087**	-3.597	48.72	2923.5**	4.235	64.43	2499.5*	2.426	108.83	1300.5*	-2.688
Accessing therapy – No (N = 143)	79.60	1087**	-3.597	92.44	2923.5**	4.235	89.48	2499.5*	2.426	81.09	1300.5*	-2.688

Notes: p values of < 0.05 indicated with an * and values of < 0.001 indicated with an **

The assumptions of all the following analyses were examined. Where small deviations were felt to be within the robustness of the test, the analyses proceeded (Appendix P). Descriptive data on questionnaire scores by PMIE exposure group can be found in Table 5.

Table 5. Mean questionnaire scores across PMIEs groups

	Low exposure PMIEs (n = 56)		Medium exposure PMIEs (n = 58)		High Exposure PMIEs (n = 60)	
	M	**SD**	**M**	**SD**	**M**	**SD**
MI symptoms	34.14	12.76	42.29	12.80	63.75	14.34
Meaning Making	61.36	14.54	54.36	12.10	39.95	11.78
Reintegration	70.89	16.96	62.33	13.66	50.48	12.98
MIES	14.05	3.93	25.60	3.37	40.98	6.59

H1a) Those in the high exposure group will score higher on MI than those with lower exposure to PMIEs (indicating greater symptom severity)

To determine if MI symptoms were significantly different between PMIE exposure groups, an ANOVA was conducted. A statistically significant difference between groups was found $F(2, 171) = 76.911$, $p < 0.001$.

Post-hoc tests indicate an increase in symptoms from the low exposure group ($M = 34.143$, $SD = 12.761$) to the medium exposure group ($M = 42.293$, $SD = 12.801$) with a mean difference of -8.150 95% (-14.059, -2.41), $p = 0.004$ and the high exposure group ($M = 63.750$, $SD = 14.342$) with a mean difference of -29.607 95% CI [-35.468, -23.747], $p < 0.001$. An increase in MI symptoms from the medium exposure group to the high exposure group with a mean difference of -21.457 95% CI [-27.265, -15.649], $p < 0.001$ was also found.

H1b) Those with high exposure to PMIEs will score lower on meaning making than those with low exposure to PMIEs (indicating less adaptive integration of an event)

To determine if meaning making was significantly different between PMIE exposure groups an ANOVA was conducted. Meaning making was found to be significantly different between groups $F(2, 171) = 42.250$, $p < 0.001$.

Post-hoc comparisons show a decrease of scores from the low exposure group ($M = 61.357$, $SD = 14.541$) to the medium exposure group ($M = 54.362$, $SD = 12.104$) with a mean difference of 6.995, 95% [1.311, 12.680] which was statistically significant ($p = 0.011$). There was likewise a decrease of scores from the low exposure group to the high exposure group ($M = 39.950$, $SD = 11.777$) with a mean decrease of 21.407, 95% CI [15.769, 27.045] which was statistically significant ($p < 0.001$). A decrease in scores from the medium exposure group to the high exposure group was found with a mean decrease of 14.412 95% CI [8.825, 19.999] which was statistically significant ($p < 0.001$).

H1c) Those in the high exposure group will score lower on the reintegration measure than those with lower exposure to PMIEs (indicating lower level of adjustment)

To determine if reintegration was significantly different between PMIE exposure groups, an ANOVA was conducted. As the homogeneity of variance assumption was not met ($p = 0.030$), the Welch test was utilized to interpret results. Reintegration levels were found to be significantly different across groups, Welch $F(2, 111.591) = 28.178$, $p < 0.001$.

Post-hoc comparisons using the Games-Howell test show a reduction in reintegration level from the low exposure group (M = 70.893, SD = 16.960) to the medium exposure group (M = 62.328, SD = 13.662) with a mean difference of 8.565 95% CI [1.694, 15.436], $p = 0.010$ and compared to the high exposure group (M = 50.483, SD = 12.980) with a mean difference of 20.410 95% CI [13.707, 27.112], $p < 0.001$. A reduction in reintegration levels from the medium exposure group to the high exposure group with a mean difference of 11.844 95% CI [6.021, 17.673] was also found, $p < 0.001$.

H2) Reintegration will explain a significant portion of the variance in MI.

A hierarchical multiple regression was conducted to understand if the addition of meaning making and reintegration improved the prediction of MI over and above the PMIE exposure, 'years in military', 'years since discharge', and whether participants were in therapy.

Model 1 was found to be statistically significant ($p < 0.001$). The addition of meaning making (model 2) led to a statistically significant increase in R^2 of 0.176, $F(1, 168) = 110.310$; $p < 0.001$. The addition of reintegration (model 3) to the prediction of MI led to a statistically significant increase in R^2 of 0.039 $F(1, 167) = 28.248$; $p < 0.001$. Overall, the full model (model 3) was statistically significant $R^2 = 0.770$, $F(6, 167) = 93.288$, $p < 0.001$, adjusted $R^2 = 0.762$.

Table 6. Hierarchical Multiple Regression

MI						
	Model 1		Model 2		Model 3	
Variable	B	β	B	β	B	β
Constant	20.670*		59.991**		70.513**	
Yr in military	0.308	0.014	0.104	0.05	0.252	0.012
Yr since discharge	0.328	0.017	1.140	0.058	1.064	0.054
Therapy	-3.182	- 0.070	0.081	0.002	- 0.708	- 0.016
MIES total	1.108**	0.732	0.597**	0.395	0.544**	0.360
ISLES			- 0.652**	- 0.557	- 0.448**	- 0.382
MCARM					- 0.302**	- 0.277
R^2	0.555		0.731		0.770	
F	52.677**		91.462**		93.288**	
R^2 *change*	0.555		0.176		0.039	
F change	52.677**		110.310**		28.248**	

Discussion

While models (Litz et al., 2009) have been proposed to explain MI's development and evidence has shown that an individual's ability to make meaning of PMIEs is crucial (Currier et al., 2015), the role of reintegration into civilian life had yet to be quantitatively explored. The current study analysed the relationship between meaning making, reintegration, and MI in a sample of UK military veterans who had been exposed to varying degrees of PMIEs.

In support of the first hypothesis, MI severity was found to significantly differ across groups with individuals in the high intensity PMIEs group experiencing higher severity of MI symptoms than those in the medium and low groups. This is supported by the literature in other veteran populations (Hamrick & Bravo, 2020) and is in-line with conceptualizations of MI that suggest

that cumulative PMIE exposure is thought to increase the difficulties experienced (Grimell & Nilsson, 2020).

A significant difference between the groups in levels of meaning making was likewise found. In fact, as predicted, veterans exposed to high intensity PMIEs were found to have lower levels of meaning making than those in the medium and the low groups providing support for the second hypothesis. This finding is in-line with previous research (Currier et al., 2015) in which those who were exposed to the most amount of PMIEs, were also found to score lower on the ISLES indicating greater difficulties integrating the event into their wider narrative.

In-line with the third hypothesis, there was a significant difference in reintegration levels found between the groups. As predicted, those in the low intensity PMIEs group demonstrated higher levels of psychological and social adjustment in comparison to the medium and high groups. In fact, reintegration explained a significant proportion of the variance in MI, over and above the effects of meaning making, PMIE exposure, and demographic variables thus providing support for the study's fourth hypothesis. However, it must be noted that the MCARM has only been validated within Australian veteran populations.

This research replicates previous findings which support Litz and colleagues' (2009) MI model in which meaning making is of crucial importance. While previous research (Karstoft et al., 2015) has found reintegration difficulties are different depending on PTSD symptom trajectories, the current study is one of the first to provide quantitative evidence to suggest that a veteran's

experience reintegrating into civilian life is important to MI, as reintegration difficulties differ depending on the level of PMIE exposure during the military. As proposed by William Howe (2023), the nature of the experiences that military personnel are likely to engage in, such as combat, leads them to alter their own moral framework to create/fit into a 'military identity' during their service. This 'military identity' is developed based on shared experiences and military values whereby a distinction is made between military and civilian moral codes; an individual may therefore be able to make sense of their actions within the context of the military moral code (Litz et al., 2009; Peris et al., 2024). Nevertheless, it is proposed that experiencing "moral pain" from the military during a time of change such as reintegration into civilian life, may perhaps make it more difficult to reconcile the discrepancies between civilian and military moral codes (described by some as a 'reverse culture shock') (Drescher & Farnsworth, 2020; Harwood-Gross et al., 2023; Koenig et al., 2014). This could lead to the experience of MI symptoms and further social withdrawal.

While the current study provides some interesting findings, it is important consider the participants demographics when interpreting them. The majority of participants were White male veterans, over the age of 40, who had spent more than 10 years in the military and had been discharged more than 10 years ago. This limits the generalizability of the findings, for instance, for veterans of different ethnic backgrounds and genders considering that previous research has found that White veterans are exposed to less PMIEs compared to other veteran groups which the authors suggest indicates that ethnic minority veterans have a greater likelihood of experiencing PMIEs (Wisco et al, 2017).

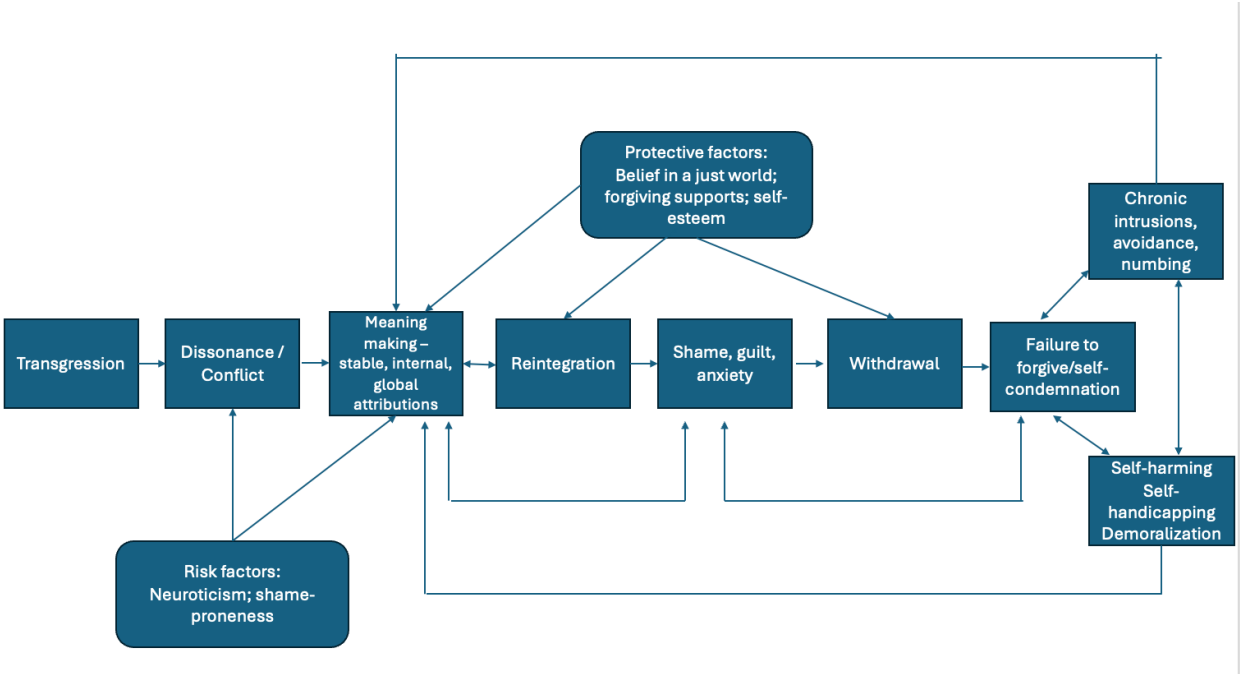
Limitations

The abovementioned results should be interpreted within the context of the study's limitations. The MIES was chosen as it is a widely used measures of PMIE exposure (Houle et al., 2021; Levi-Beltz et al., 2022). However, its main criticism includes the addition of questions that seem to be measuring the impact of exposure (*"I am troubled by…")* which could conflate PMIE exposure with MI symptoms and may impact the measure's structural validity (Frankfurt & Frazier, 2016; Houle et al., 2024; Litz 2025). This makes it difficult to uncover whether group differences in meaning making and reintegration are driven by MI symptoms rather than by exposure in the current study. This should also be taken into consideration when interpreting the hierarchical regression as the contribution of meaning making and reintegration may have been underestimated because of MIES being included in model 1. However, further exploratory analyses demonstrated the overall model remains significant with small changes in variance explained by key variables, when re-run omitting the three MIES items related to outcomes, and when the MIES is omitted all together (see appendix Q).

Regarding the MISS-M-SF, it is difficult to ascertain whether participants were keeping in mind a PMIE and not another non-morally injurious experience considering this is not clarified within the measure's instructions. One systematic review highlights that this creates difficulties ensuring that the symptoms being reported are reflective of MI and not general distress (Griffin et al., 2025). Future research may consider utilizing the Moral Injury Outcome Scale which accounts for this limitation (Houle et al., 2024; Litz et al., 2022).

There is likewise the lack of a clear understanding of the directionality of effect. This is due to the single timepoint design of the study. A model update (Figure 5) is therefore tentatively proposed which accounts for the potential bidirectional relationship between meaning making and reintegration. A veteran may be exposed to a PMIE and make sense of their experiences in the moment considering the context, culture, and morals of the military. During reintegration, an individual's military identity and moral code may be disrupted as the social context shifts thereby altering the meaning made of the PMIEs that may lead to MI symptoms. On the other hand, exposure to a PMIE which is unable to be integrated into one's wider narrative in the moment, may lead to the development of MI which can make reintegration into civilian life more difficult thereby leading to a worsening of symptoms post-discharge. Future research should endeavour to understand this proposed model further utilizing a longitudinal design where pre- and post-discharge ratings are gathered.

Figure 5. Proposed MI model



Additionally, due to ethical considerations, demographic data was grouped to protect the participants' identity which limits the ability to accurately understand participant characteristics. Providing an opportunity to enter responses rather than selecting from narrow categories would have provided a better overview of the sample. This would have also allowed for the ability to include covariates in the analysis that were on a continuous scale which would have led to a more rigorous analysis as their potential influence could have been controlled for. Furthermore, this study did not screen for PTSD or other mental health difficulties for several reasons. Firstly, it was important to conduct the study anonymously and therefore measures that led to clinical diagnoses were not felt to be ethically appropriate. Furthermore, it was important to limit participant dropout and burden from too many measures. Finally, this study did not specifically look at PTSD within its research questions. As a result, it is not possible to conclude that the group differences found aren't influenced by other mental health difficulties or demographic characteristics. The exploratory correlational analyses demonstrate that there were significant differences in MI symptoms, meaning making, and reintegration levels across participants who were currently in therapy and those who were not. The literature has shown the positive impact of therapy on symptom severity when compared to waitlist controls (Ennis et al., 2021). Nevertheless, the differences in sample sizes between the therapy groups in the current study should be taken into consideration when interpreting the results. Curiously, 'years since being discharged' from the military only significantly correlated with meaning making and exposure to PMIEs, while 'years in the military' was not significantly correlated with any other variables. Nevertheless, these associations are weak. Therefore, limited inferences can be made, and future research would benefit from investigating this further. While previous studies have found mixed results regarding the impact of controlling for army characteristics in the analysis (Currier et al.,

2015; Levi-Belz et al., 2022), it is worth exploring further and controlling for them in future research as they relate to MI and reintegration. The confidence intervals for some of the analyses were likewise large indicating less reliability of the estimates (Hazra, 2017).

Furthermore, information regarding branch of the military, deployment, and the kind of PMIES they were exposed to would have been helpful to include considering previous research has found that different types of PMIES are related to the endorsement of different MI symptoms (Litz et al., 2018).

Future directions

Future research should prioritize longitudinal studies following individuals through the military and discharge to provide a causal/temporal interpretation of events and contribute further to the testing of the current theoretical perspective for MI. Reintegration measures should be developed or validated for UK veterans and future research should aim to develop a detailed understanding of the associations between reintegration and type of PMIE exposure (Litz et al., 2018). Controlling for demographic/military characteristics as well as social support should be included in the analysis. Social support has been found to buffer the relationship between exposure to PMIEs and experiences of suicidal ideation (Levi-Belz et al., 2022).

Implications

These findings have important clinical implications. The military can utilize these findings to implement methods of identifying individuals at risk of developing further difficulties, prior to their discharge from the military by curiously exploring veterans' military experiences in a sensitive, safe, and non-judgemental way. This might allow for appropriate support to be put in place prior to discharge. Psychoeducation around reintegration difficulties and its link to MI should likewise be provided to veterans and their families/carers to improve awareness and early identification of difficulties prior to discharge. A report by the charity Healthwatch Essex, found that thorough post-discharge support plans have been found to reduce worry and fear around reintegration into civilian life (Potts, 2021). The findings of this study likewise have relevance for mental health clinicians who may be in contact with veterans in the NHS or across third-sector organizations. Services should consider exploring how veterans have made sense of their military experiences and the impact this has on MI symptoms. In fact, this is a central part of a new therapy, Restore & Rebuild, which has shown early promising findings in UK veterans (Williamson et al., 2024). However, exploration of reintegration difficulties should also be considered in the formulation and treatment of MI. This includes understanding a veteran's sense of purpose and value post-military, their social connection/support, and sense of isolation rather than solely focusing on the practical aspects of reintegration such as employment and housing.

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Executive Summary:

Moral injury is a psychological difficulty that has been shown to happen when a person is directly involved in, sees, or is unable to stop an event that goes against their morals. This is often referred to as a potentially morally injurious event (PMIE). It's *potentially* morally injurious as the event itself doesn't automatically trigger the development of symptoms.

There has been research which has shown that the way a person makes meaning of the potentially morally injurious event is important for the development of a type of mental health difficulty called moral injury. Meaning making refers to a person's ability to make sense of the stressful event and integrate it within their wider belief system. Moral injury is associated with symptoms such as shame, guilt, anger, and sometimes difficulties around one's spirituality or views of themselves and/or others. However, there have been some reports that have indicated that how a veteran reintegrates into civilian life, might also be important to the development of moral injury.

This study wanted to establish whether difficulties reintegrating into civilian life, the meaning made of the event, and moral injury symptoms are different across individuals who may be exposed to different intensities of potentially morally injurious events. UK veterans were recruited online through social media and those that agreed to participate, were asked to complete an anonymous online survey which included four questionnaires. These questionnaires asked veterans about their level of exposure to PMIEs, the severity of moral injury symptoms they experience, their ability to make meaning of these stressful life events, and their experience of their psychological/cultural reintegration into civilian life. There were 174 participants that completed all the questionnaires. Depending on their responses on the measure that asked about

their level of exposure to PMIEs, they were split into three groups: low, medium, and high exposure to PMIEs.

It was predicted that those the veterans in the high exposure to PMIEs group (those that exposed to a higher intensity of potentially morally injurious events) compared to the other two groups, would have more difficulties integrating that event into their life narrative, experience more difficulties reintegrating into civilian life, and experience more symptoms of moral injury. It was also predicted that difficulties with reintegration into civilian life, would predict moral injury symptoms over and above other factors such as their meaning making abilities. The questionnaire findings were analysed and the results provided support for the abovementioned predictions as…

- Those in the high intensity exposure to PMIEs group showed lower levels of meaning making abilities e.g., more difficulties integrating that event into their overall narrative.
- Those in the higher intensity exposure to PMIEs group showed more symptoms of moral injury.
- Those in the higher intensity exposure to PMIEs group showed greater difficulties reintegrating into civilian life.
- Reintegration into civilian life predicts moral injury over and above meaning making and other demographic/military characteristic or level of exposure to PMIEs.

These findings demonstrate that the level of reintegration into civilian life is an important aspect of moral injury which has implications for individuals who will soon be discharged from the military, as well as for mental health services who may work with veterans

experiencing moral injury. Nevertheless, this should be investigated further to understand whether reintegration is impacting moral injury symptoms or vice versa.

Connecting Narrative:

The following section contains a reflection of the three research projects included in this thesis. Despite seeming like separate projects, they all share the same underlying theme, trauma. In the SRL, we looked at the effectiveness of PBMS in adolescents residential settings, many of whom have experienced prior traumas. For the SIP we investigated support for staff who were continuously exposed to serious incidences which could be considered potentially traumatic, as part of their role. Finally, for the TDRP, moral injury amongst military veterans was investigated. This is an area of research I have always been interested in and the doctorate allowed me to pursue this interest in various areas of mental health and across populations.

Systematic Review of the Literature

I found this project one of the most difficult ones to engage in. Firstly, finding a topic that had enough information to synthesize but which did not have an updated systematic review, was challenging. I wanted to ensure that it was a topic I was interested in considering the amount of time that goes into a systematic review. PBS was something I had known a little about but only within the context of intellectual disabilities. I have always found this framework to be important but never had thought about its applications to other populations. The ability to delve into the research for its application in children and adolescent residential services was therefore fascinating. However, combing through research to find studies that were implementing PBS-type interventions proved difficult and I found myself feeling frustrated. Nevertheless, when I began to look at the data extracted from the included studies, I was able to explore its effectiveness within this context and population which is important considering that young

people's behaviours might be deemed as being 'challenging' despite many of them having had previous traumatic experiences and have difficulties communicating their needs. In fact, some of the current practices of managing 'challenging behaviours' could end up re-traumatizing the young people rather than supporting them which is why it is essential that residential services for adolescents implement evidence-based, effective, and socially valid strategies/interventions. The findings of this project have applicability across adolescent residential services from social care to the NHS and allowed me to see the benefits of conducting systematic reviews considering their ability to synthesize information and identify gaps in the literature which I am keen to continue researching.

Service Improvement Project:

As I began to work within the NHS, I began to take note of the emotional, psychological, and physical toll that it can take. It made me question the level of exposure to traumatic events that different professions might face depending on the clinical setting they work in. As I began to look for a service improvement project, I came across my external supervisor who detailed the level of exposure to serious incidences that their clinicians are expected to manage. However, we wanted to go beyond knowing that clinicians in acute adolescent inpatient settings are more likely to be exposed to serious incidences which can be psychologically and emotionally impactful. We wanted to understand what the service was doing to support them and what could be improved, with the hopes of not only improving the wellbeing of the staff, but also their ability to remain within their roles long-term and ultimately, their ability to support the young people they work with to provide them with a safe environment. Speaking directly with the staff

to understand their experiences felt like the right way to go to provide the service with first-hand accounts, which made the project more meaningful. I found it difficult to hear some of the staff's stories but felt appropriately supported through this project by my supervisors. This made me reflect on how difficult it would have felt for staff hold such experiences alone when working on the ward and the importance of receiving professional support. I was taken aback by the resilience of each participant and their willingness to share their experiences which to me, indicated that this was something they felt passionate about and wanted to contribute towards.

Theory Driven Research Project

I became interested in veteran's mental health during my master's thesis, where I investigated the effectiveness of psychotherapy for complex PTSD and wanted to continue my doctorate research with this population. Through my initial research, I began to note the varying type of traumatic experiences that veterans may be exposed to over and above the fear-based life-threatening stressors which are often referred to in the literature. This introduced me to stressors relating to moral transgressions. However, creating a project around this proved to be difficult for a few reasons. Understanding what part of the moral injury model we wanted to investigate without replicating the findings of previous research was challenging. Furthermore, I ran into various recruitment difficulties which triggered a sense of uncertainty as to whether I would be able to meet the sample size for appropriate statistical power. I began to wonder whether the lack of participation initially, indicated that the project was something that the community did not find helpful and wondered if my assumption of it being easier to participate if the study was anonymous, was erroneous considering the sensitive nature of the potentially morally injurious

events that these veterans had been exposed to. Nevertheless, through reflection and problem-solving with my supervisors, I was able to recruit to my target number and see the amount of people that felt that this project was important and worth it. Having an in-depth understanding of the factors that might impact the development of MI is crucial and made me reflect on the clinical impacts that this study might have by the military, charities and NHS services, many of whom see veterans who experience moral injury.

Acknowledgements

Firstly, I would like to thank all the participants across the three projects. Without you, these projects would not be as meaningful. A further thank you for all the individuals with lived experience who supported me with ensuring that the studies were all relevant.

I would like to thank my research tutors, Dr. Fiona McFarlane and Dr. Ciorsdan for the invaluable support they have provided me. It has been a pleasure to work alongside and to learn from you professionally. Thank you to Dr. Danielle Shore for all the support meetings and emails for my statistical analysis. Your enthusiasm is infectious, and I aspire to develop your knowledge of statistics. Thank you to Dr. Matt Hotton for always being willing to respond to my emails and provide advice when needed. A big thank you to Dr. Samuel Lloyd-White and Dr. Adele Stevens. Your support on these projects as external supervisors was invaluable. Thank you for being a sounding board and helping me to explore the clinical applications of this research.

I would like to thank my course tutor, Dr. Annabel David. Thank you for coming in and being willing to meet with me to support me through the course both personally and professionally from the get-go.

Alexandra, Nicola, Amy, Liam, Francis, Siamara, Saskia, and Carys: I cannot thank you enough for supporting me through this process, for always being a listening ear, making me laugh, and for your advice. Thank you for being the loveliest of friends. I am thankful we have gone through this together.

Finally, but certainly not least, thank you to my family – Ma, Pa, Santi, Joaqui, y Oscar. Thank you for being the most incredible support system I could have asked for. Your love, patience, and humour has made everything feel easier. I couldn't have done it without you. Los amo!

Appendices

Appendix A: Individual Search Criteria for SRL

PsycINFO

1.	(adolescen* or youth* or "young person" or "young people" or teen* or child* or "under 18" or Minor* or Juvenile* or boy* or girl* or Pediatric* or Paediatric*).ab,id,mh,sh,ti.
2.	(PBS or "positive behavio* support" or "positive behavio* intervention*" or "behavio* manage*" or "functional analysis" or "behavio* analysis" or "Applied Behavio* Analysis" or "Behavio* Support*" or PBIS or "positive behavio* intervention support*" or "modified positive behavioral interventions and support" or MPBS or M-PBS).ab,id,ti.
3.	positive behavior support/ or behavior modification/ or behavior change/ or behavior problems/
4.	functional analysis/
5.	applied behavior analysis/
6.	2 or 3 or 4 or 5
7.	(aggression or aggressive* or violence or violent or "challenging behavio*" or "behavio* that challenge*" or "behavio* of concern" or "disruptive behavio*" or Behavio* or Anger or Angry or "Conduct Disorder*" or Disruptive* or Rage* or Agonistic or Fight* or Misconduct* or Misbehavio*).ab,id,ti.
8.	aggressiveness/
9.	exp aggressive behavior/
10.	exp violence/
11.	exp behavior problems/
12.	exp anger/
13.	conduct disorder/
14.	7 or 8 or 9 or 10 or 11 or 12 or 13
15.	(Inpatient* or "inpatient unit*" or "inpatient ward*" or "psychiatric ward*" or "Psychiatric Unit*" or "psychiatric hospital*" or "residential care" or "residential school*" or "secure setting*" or "residential unit*" or PICU or "psychiatric intensive care unit" or "pediatric mental health unit*" or Hospital* or "Group Home*" or "Institutional School*" or "residential treatment" or GAU or "general adolescent unit" or "borstal young offender* institute*" or "secure CAMHS" or "secure child and adolescent mental health service*" or "forensic CAMHS" or "forensic child and adolescent mental health service*" or "juvenile detention" or "low-secure unit" or "residential program*").ab,id,ti.
16.	psychiatric hospitals/ or psychiatric units/
17.	residential care institutions/ or group homes/ or institutional schools/
18.	psychiatric hospitalization/
19.	15 or 16 or 17 or 18
20.	1 and 6 and 14 and 19

Medline

1.	(adolescen* or youth* or "young person" or "young people" or teen* or child* or "under 18" or Minor* or Juvenile* or boy* or girl* or Pediatric* or Paediatric*).ab,kw,ti.
2.	adolescent/ or child/
3.	Minors/
4.	1 or 2 or 3
5.	(PBS or "positive behavio* support" or "positive behavio* intervention*" or "behavio* manage*" or "functional analysis" or "behavio* analysis" or "Applied Behavio* Analysis" or "Behavio* Support*" or PBIS or "positive behavio* intervention support*" or "modified positive behavioral interventions and support" or MPBS or M-PBS).ab,kw,ti.
6.	behavior therapy/ or applied behavior analysis/
7.	5 or 6
8.	(aggression or aggressive* or violence or violent or "challenging behavio*" or "behavio* that challenge*" or "behavio* of concern" or "disruptive behavio*" or Behavio* or Anger or Angry or "Conduct Disorder*" or Disruptive* or Rage* or Agonistic or Fight* or Misconduct* or Misbehavio*).ab,kw,ti.
9.	aggression/ or agonistic behavior/ or problem behavior/
10.	Violence/
11.	Problem Behavior/
12.	anger/ or rage/
13.	Conduct Disorder/
14.	Rage/
15.	8 or 9 or 10 or 11 or 12 or 13 or 14
16.	(Inpatient* or "inpatient unit*" or "inpatient ward*" or "psychiatric ward*" or "Psychiatric Unit*" or "psychiatric hospital*" or "residential care" or "residential school*" or "secure setting*" or "residential unit*" or PICU or "psychiatric intensive care unit" or "pediatric mental health unit*" or Hospital* or "Group Home*" or "Institutional School*" or "residential treatment" or GAU or "general adolescent unit" or "borstal young offender* institute*" or "secure CAMHS" or "secure child and adolescent mental health service*" or "forensic CAMHS" or "forensic child and adolescent mental health service*" or "juvenile detention" or "low-secure unit" or "residential program*").ab,kw,ti.
17.	psychiatric department, hospital/ or residential facilities/ or group homes/
18.	16 or 17
19.	4 and 7 and 15 and 18

Embase

1.	(adolescen* or youth* or "young person" or "young people" or teen* or child* or "under 18" or Minor* or Juvenile* or boy* or girl* or Pediatric* or Paediatric*).ab,kw,ti.
2.	adolescent/ or juvenile/
3.	child/ or boy/ or girl/
4.	"minor (person)"/
5.	1 or 2 or 3 or 4
6.	(PBS or "positive behavio* support" or "positive behavio* intervention*" or "behavio* manage*" or "functional analysis" or "behavio* analysis" or "Applied Behavio* Analysis" or "Behavio* Support*" or PBIS or "positive behavio* intervention support*" or "modified positive behavioral interventions and support" or MPBS or M-PBS).ab,kw,ti.
7.	behavior modification/
8.	behavior change/
9.	6 or 7 or 8
10.	(aggression or aggressive* or violence or violent or "challenging behavio*" or "behavio* that challenge*" or "behavio* of concern" or "disruptive behavio*" or Behavio* or Anger or Angry or "Conduct Disorder*" or Disruptive* or Rage* or Agonistic or Fight* or Misconduct* or Misbehavio*).ab,kw,ti.
11.	aggression/ or aggressiveness/ or anger/
12.	disruptive behavior/
13.	violence/
14.	conduct disorder/
15.	10 or 11 or 12 or 13 or 14
16.	(Inpatient* or "inpatient unit*" or "inpatient ward*" or "psychiatric ward*" or "Psychiatric Unit*" or "psychiatric hospital*" or "residential care" or "residential school*" or "secure setting*" or "residential unit*" or PICU or "psychiatric intensive care unit" or "pediatric mental health unit*" or Hospital* or "Group Home*" or "Institutional School*" or "residential treatment" or GAU or "general adolescent unit" or "borstal young offender* institute*" or "secure CAMHS" or "secure child and adolescent mental health service*" or "forensic CAMHS" or "forensic child and adolescent mental health service*" or "juvenile detention" or "low-secure unit" or "residential program*").ab,kw,ti.
17.	psychiatric department/ or psychiatric intensive care unit/
18.	mental hospital/
19.	residential care/
20.	residential home/
21.	16 or 17 or 18 or 19 or 20
22.	5 and 9 and 15 and 21

Web of science – All databases

(((TS=(adolescen* OR youth* OR "young person" OR "young people" OR teen* OR child* OR "under 18" OR Minor* OR Juvenile* OR boy* OR girl* OR Pediatric* OR Paediatric*)) AND TS=(PBS OR "positive behavio* support" OR "positive behavio* intervention*" OR "behavio* manage*" OR "functional analysis" OR "behavio* analysis" OR "Applied Behavio* Analysis" OR "Behavio* Support*" OR PBIS OR "positive behavio* intervention support*" OR "modified positive behavioral interventions and support" OR MPBS OR M-PBS)) AND TS=(aggression OR aggressive* OR violence OR violent OR "challenging behavio*" OR "behavio* that challenge*" OR "behavio* of concern" OR "disruptive behavio*" OR Behavio* OR Anger or Angry OR "Conduct Disorder*" OR Disruptive* OR Rage* OR Agonistic or Fight* OR Misconduct* OR Misbehavio*)) AND TS=(Inpatient* OR "inpatient unit*" OR "inpatient ward*" OR "psychiatric ward*" OR "Psychiatric Unit*" OR "psychiatric hospital*" OR "residential care" OR "residential school*" OR "secure setting*" OR "residential unit*" OR PICU OR "psychiatric intensive care unit" OR "pediatric mental health unit*" OR Hospital* OR "Group Home*" OR "Institutional School*" OR "residential treatment" OR GAU OR "general adolescent unit" OR "borstal young offender* institute*" OR "secure CAMHS" OR "secure child and adolescent mental health service*" OR "forensic CAMHS" OR "forensic child and adolescent mental health service*" OR "juvenile detention" OR "low-secure unit" OR "residential program*")

Scopus

(TITLE-ABS-KEY (inpatient* OR "inpatient unit*" OR "inpatient ward*" OR "psychiatric ward*" OR "psychiatric unit*" OR "psychiatric hospital*" OR "residential care" OR "residential school*" OR "secure setting*" OR "residential unit*" OR picu OR "psychiatric intensive care unit" OR "pediatric mental health unit*" OR hospital* OR "group home*" OR "institutional school*" OR "residential treatment" OR gau OR "general adolescent unit" OR "borstal young offender* institute*" OR "secure camhs" OR "secure child and adolescent mental health service*" OR "forensic camhs" OR "forensic child and adolescent mental health service*" OR "juvenile detention" OR "low-secure unit" OR "residential program*")) AND (TITLE-ABS-KEY (aggression OR aggressive* OR violence OR violent OR "challenging behavio*" OR "behavio* that challenge*" OR "behavio* of concern" OR "disruptive behavio*" OR behavio* OR anger OR angry OR "conduct disorder*" OR disruptive* OR rage* OR agonistic OR fight* OR misconduct* OR misbehavio*)) AND (TITLE-ABS-KEY (pbs OR "positive behavio* support" OR "positive behavio* intervention*" OR "behavio* manage*" OR "functional analysis" OR "behavio* analysis" OR "applied behavio* analysis" OR "behavio* support*" OR pbis OR "positive behavio* intervention support*" OR "modified positive behavioral interventions and support" OR mpbs OR m-pbs)) AND (TITLE-ABS-KEY (adolescen* OR youth* OR "young person" OR "young people" OR teen* OR child* OR "under 18" OR minor* OR juvenile* OR boy* OR girl* OR pediatric* OR paediatric*))

TO REMOVE MEDLINE FROM THE SEARCH RESULTS:

(TITLE-ABS-KEY (adolescen* OR youth* OR "young person" OR "young people" OR teen* OR child* OR "under 18" OR minor* OR juvenile* OR boy* OR girl* OR pediatric* OR paediatric*)) AND (TITLE-ABS-KEY (pbs OR "positive behavio* support" OR "positive behavio* intervention*" OR "behavio* manage*" OR "functional analysis" OR "behavio* analysis" OR "applied behavio* analysis" OR "behavio* support*" OR pbis OR "positive behavio* intervention support*" OR "modified positive behavioral interventions and support" OR mpbs OR m-pbs)) AND (TITLE-ABS-KEY (aggression OR aggressive* OR violence OR violent OR "challenging behavio*" OR "behavio* that challenge*" OR "behavio* of concern" OR "disruptive behavio*" OR behavio* OR anger OR angry OR "conduct disorder*" OR disruptive* OR rage* OR agonistic OR fight* OR misconduct* OR misbehavio*)) AND (TITLE-ABS-KEY (inpatient* OR "inpatient unit*" OR "inpatient ward*" OR "psychiatric ward*" OR "psychiatric unit*" OR "psychiatric hospital*" OR "residential care" OR "residential school*" OR "secure setting*" OR "residential

unit*" OR picu OR "psychiatric intensive care unit" OR "pediatric mental health unit*" OR hospital* OR "group home*" OR "institutional school*" OR "residential treatment" OR gau OR "general adolescent unit" OR "borstal young offender* institute*" OR "secure camhs" OR "secure child and adolescent mental health service*" OR "forensic camhs" OR "forensic child and adolescent mental health service*" OR "juvenile detention" OR "low-secure unit" OR "residential program*") AND NOT INDEX (medline))

Appendix B: Quality assessment for SRL

Quantitative:

	Q1	Q2	Q3	Q4	Q5	Q6	Q7	Q8	Q9	Q10	Q11	Q12	Q13	Q14	Total
(Bush et al 2023)	2	2	NA	1	NA	NA	NA	NA	NA	NA	NA	NA	2	1	0.8
(Dean et al., 2018)	2	1	1	2	NA	NA	NA	1	1	2	0	0	2	2	0.64
(Field et al., 2004)	1	2	NA	2	NA	NA	NA	NA	NA	NA	NA	NA	0	0	0.5
(Grey et al., 2017)	2	2	NA	2	NA	NA	NA	NA	NA	NA	NA	NA	0	1	0.7
(Haynes et al., 2017)	2	2	1	1	NA	NA	NA	1	1	1	0	0	2	2	0.59
(Jonikas et al., 2004)	1	1	1	2	NA	NA	NA	1	2	2	0	0	2	1	0.59
(Kalke et al., 2014)	1	1	1	2	NA	NA	NA	1	1	2	0	0	1	2	0.55
(Killick et al., 2007)	2	1	2	1	NA	NA	NA	1	1	2	1	0	2	2	0.68
(Lawrence et al., 2024)	2	2	NA	2	NA	NA	NA	NA	NA	NA	NA	NA	1	2	0.9
(Luiselli et al., 1996)	1	1	NA	2	NA	NA	NA	NA	NA	NA	NA	NA	0	1	0.5
(Meyers et al., 1999)	1	1	NA	2	NA	NA	NA	NA	NA	NA	NA	NA	0	1	0.5
(Moyes et al.., 1985)	2	0	1	1	NA	NA	NA	0	2	2	0	0	0	1	0.41
(Reynolds et al., 2016)	2	2	2	1	NA	NA	NA	1	2	1	1	0	2	2	0.73
(Reynolds et al., 2019)	2	2	2	1	NA	NA	NA	1	2	2	2	0	2	2	0.81

(Romani et al., 2024)	2	1	1	2	NA	NA	NA	2	1	2	0	0	2	2	0.68
(Schmidt et al., 2014)	2	1	NA	2	NA	NA	NA	NA	NA	NA	NA	NA	0	1	0.6
(Sheridan et al., 2009)	2	1	NA	1	NA	NA	NA	NA	NA	NA	NA	NA	0	1	0.5

Qualitative:

	Q1	Q2	Q3	Q4	Q5	Q6	Q7	Q8	Q9	Q10	
Jolivette et al (2014)	2	1	2	2	1	2	2	2	1	0	0.75
(Jolivette et al., 2015)	2	2	2	2	1	2	2	2	1	0	0.8
(Jolivette et al., 2020)	2	1	2	2	1	2	2	2	1	0	0.75

Appendix C: Research recommendations for SRL

PBS elements	Research elements
Functional analysis/assessment Antecedent, behaviour, consequence chart. Understanding triggers.	Clear aims and research questions
Individualized behaviour management plan including… - Important information about the YP such as communication preferences, interests, difficulties, strengths, - Outline of the relevant triggers and function of the behaviour. - Behavioural management strategies that have been collaboratively selected with the YP. - Parameters around using restrictive measures which should be discussed and agreed upon with the service, the YP, and the parents.	Clear description of the setting and population including sampling methods.
Skills training such as… - Problem solving - Emotional literacy - Building of coping strategies	Inclusion of a control group (e.g., intervention vs waitlist). - Randomization of groups if possible. If not, randomization of services.

- Anger management - Practical life skills	
Provision of meaningful reinforcers for appropriate behaviours that are collaboratively chosen with the young person and their families.	In depth description of intervention – including who provided the intervention, where the intervention was implemented, how data was collected, examples of the PBS plan elements etc.
Collaborative strengths-based approach	Use of validated outcome measures if possible for behaviour outcomes as well as QoL and other mental health meausres. Clear description of idiosyncratic measures if included.
Primary aim to reduce the use of restrictive interventions and improve QoL.	Clear description of analysis Inclusion of statistical analysis (rather than descriptive results being presented). Provision of necessary statistical information including p-values (avoidance of saying results are significant if p-values aren't presented in the results section).
Data-driven approaches	Sufficient demographic and clinical characteristics for each group.
Avoidance of negative language, threats, consequences for behaviuors.	Detailed discussion including indicating both positive and negative findings, placing the

	findings in the context of the literature, outline of limitations and strengths, and implications for clinical p

Appendix D: Journal Author Guidelines for SRL

The author guidelines have been copied directly from the Journal website.

2. Aims of the journal

The International Journal of Positive Behavioural Support is a peer reviewed publication that aims to:

- lead the further development and evolution of PBS internationally;
- promote good practice in the use of PBS by bridging the gap between
- academic research and PBS practice;
- contribute to the evidence base for PBS, with a particular focus on improving
- quality of life;
- encourage collaborative PBS research and practice with professionals, family
- carers and the people that they support.
- While the primary focus of the journal is the use of PBS approaches in supporting
- children and adults with intellectual disability, submissions concerning PBS with
- other populations are welcomed.

The journal particularly welcomes submissions authored by, or with, people who have intellectual disabilities, autistic people or people with lived experience of PBS.

The journal publishes the following types of papers:

- Research papers;
- Discussion/concept papers;
- Practice papers;
- Brief reports.

Each of these has specific guidance, so please ensure you follow the guidance for your type of paper.

3. Research papers

The journal welcomes the following types of research papers:

- Single case studies.
- Group studies.
- Accounts of wider organizational change.
- Systematic reviews.
- Qualitative studies.
- Mixed method studies.

All submissions should include data that evidence the impact of described interventions, or the outcome of systematic reviews. In addition to papers describing more traditional experimental methodologies, manuscripts that report routine data collected by services or as part of dedicated audits are welcome.

The journal will feature both quantitative and qualitative research studies.

Systematic reviews of existing literature that have relevance to research and practice in PBS will also be considered. The review should describe the procedures employed to select the literature that is reviewed; address the methodological strengths and limitations of the literature; summaries the major findings; and present implications for research and/or practice.

Research papers should be no more than 7,000 words including references, tables, figures, appendices and follow the structure outlined below – *Please note the word count of the current systematic review is following course guidelines but will be edited down to the journals word count requirement once submitted for publication.*

Format and structure of research papers

All research papers submitted to the International Journal of Positive Behavioural Support should include:

- Cover page: This should have only the title and any subtitle; this is so submissions can be reviewed anonymously.
- The authors' details should be supplied on a separate sheet and should include names and institutional affiliations, including country/region, of all contributing authors. The author for correspondence must be clearly identified and should include their contact details, including address, email and telephone number.
- Summary: A summary of the contents of the manuscript of around 150 words, under four headings: Background; Method; Results; Conclusions. Do not include references in the summary.
- Keywords: Up to six that are relevant to the content of the manuscript to aid indexing, citing and online searches.
- Main text: The main part of the paper, which should have appropriate subheadings.
- References
- Tables, figures, and appendices: Tables, figures, and/or appendices should be placed after the references. The position of tables, figures, and/or appendices should be indicated within the text by use of Table 1, Figure 1, Appendix A, etc.
- Tables, figures and/or appendices should be presented in this order. They should be designed using Harvard Style formatting guidelines.

5. Submitting a paper

To submit a paper to the International Journal of Positive Behavioural Support ,

please send your manuscript by email attachment to ijpbs@bild.org.uk.

Manuscripts should be sent as a Word document and should not be write

protected. Articles are accepted for publication only at the discretion of the editors.

6. Style

Language and terminology, Jargon, or unnecessary technical language, should be avoided. Non-discriminatory language should be used.

The journal accepts a range of terms for challenging behaviour, including

behaviours of concern, behaviours that challenge, and challenging behaviour.

The journal uses the term intellectual disability, not behaviourbility. The journal uses UK English spelling.

Abbreviations and symbols: As far as possible avoid abbreviations, except for terms in common use. All symbols and abbreviations should be clearly explained. Abbreviations should not be used when they refer to people, e.g., intellectual disabilities, not ID. Abbreviations that are common enough to be in the dictionary (e.g., USA or IQ) are acceptable.

References: The journal follows the Harvard reference style. This system uses the authors' names and date of publication in the body of the text. In the reference section of the manuscript, references are sequenced alphabetically by author.

- Examples: 'The author has highlighted the implications of this research in another paper (Davies, 1996). Other writers have commented on related issues, notably Bartholomew (1991, 1999) and McClean (1991).'

Names and dates are enclosed in parentheses unless the authors' names are part of the sentence. If two papers are cited by the same author, and both are published in the same year, the first should be referenced as (Bartholomew, 1991a), then (Bartholomew, 1991b), and so on.

When citing two or more articles enclosed in parentheses, then authors are cited in chronological order by year of publication.

- Example: Positive Greetings at the Door (PGD) is compatible with the aim of building capable environments and enhancing quality of life, core aims in the delivery of PBS (Carr, 2007; McGill et al., 2010; Gore et al., 2013; Cook et al., 2018).

When citing a single article enclosed in parentheses with four or more authors then 'et al.' is used after the first author.

- Example: ‘Positive Behaviour Support (PBS) is a values-led, person-centred framework that uses a proactive approach to optimise care, whilst reducing behaviours that are challenging to support and the need for restrictive interventions (Webber et al., 2012; Gore et al., 2013).’

The full citation is listed at the end of the article, which is arranged in alphabetical

order by author. Journal names are given in full and are italicised, as are book

names.

- References would be cited as follows: Journal citation with volume number and issue number: Sigman, M D, Kasari, C, Kwon, J and Yirmiya, N (1995) ‘Responses to the negative emotions of others by autistic and normal children’, Child Development , 33(3), 435-439.
- Journal citation with only volume number: Gore, N J, McGill, P, Toogood, S, Allen, D, Hughes, J C, Baker, P, Hastings, R P, Noone, S J and Denne, L D (2013) ‘Definition and scope for positive behavioural support’, International Journal of Positive Behavioural Support , 3, 14–23.
- Book: Happe, F (1995) Autism: a n i ntroduction to p sychological t heory . Cambridge, MA: Harvard University Press.
- Book chapter: McGill, P and Toogood, A (1994) ‘Organising community placements’, In E Emerson, P McGill and J Mansell (eds.) Severe learning disabilities and challenging behaviours: d esigning high quality services . London: Chapman and Hall, pp. 232-

Hyphenation

- Turn the hyphenation function off.
- Tables, figures and figure captions
- Tables and figures should have short, descriptive titles, and be clearly numbered
- consecutively, e.g., Table 1, Table 2, etc., in order of their appearance in the text. All
- tables and figures should be listed after the references. They should be given a
- short caption. All footnotes to tables and figures and their source(s) should be
- typed below the table or figure. Tables and figures should be designed using
- Harvard Style formatting guidelines.

Tables

- Tables must, as far as possible, include only essential data and be self-explanatory.
- All column headings should clearly define the data presented. Use a tab, not
- spaces, to separate data points in tables; if using a table editor, ensure each data
- point is in a unique cell, do not use carriage returns within cells.

Figures

- All graphs, drawings and photographs are considered figures and should be
- numbered in sequence. Each figure should have a caption and all captions should
- be typed together on a separate page at the end of the manuscript and numbered
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- Lengthy quotations (exceeding 40 words) should be indented in the text. It is the
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Proofs will be sent via email as an Acrobat PDF file. The email server must be able

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- All submissions to the International Journal of Positive Behavioural Support are reviewed by the editors for adherence to the submission criteria and to decide whether they are suitable for peer review. Following this they are sent for peer review.
- Editors will consider the peer reviewed reports when making a decision but are not bound by the opinions or recommendations contained within. A concern raised by a single peer reviewer or the editor may result in the manuscript being rejected.
- Authors will receive peer review reports together with the editorial decision on their
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- Where an editor is on the author list or has any other competing interest regarding a specific manuscript, another member of the Editorial Board will be assigned to oversee peer review.

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You should only submit your research to us if the following conditions are met:

- The work is original.
- The work has not been submitted elsewhere and is not under consideration
- with any other publication.
- The work does not include libellous, defamatory or unlawful statements.
- Permission has been cleared for any third party material included.
- Authorship has been agreed prior to submission and no one has been ‘gifted’ authorship or denied credit as an author (ghost authorship).
- The research has been conducted with the highest standards of rigour and integrity.
- For manuscripts reporting studies that involve human participants, a statement identifying the ethics committee that approved the study and confirmation that the study conforms to recognised standards is required, for example: Declaration of Helsinki; US Federal Policy for the Protection of Human Subjects; or European Medicines Agency Guidelines for Good Clinical Practice. It should also state clearly in the text that all persons gave their informed consent prior to their inclusion in the

study or, in the case where there is a lack of capacity, that appropriate ‘best interest’ considerations have been made according to the legal jurisdiction of the participant. Participant anonymity should be preserved.

- Photographs need to be cropped sufficiently to prevent human participants being recognised (or an eye bar should be used). Images and information from individual participants will only be published where the authors have obtained the individual's free prior informed consent.
- Authors do not need to provide a copy of the consent form to the publisher; however, in signing the author license to publish, authors are required to confirm that consent has been obtained.

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A Declaration of Conflicting Interests policy refers to a formal policy a journal may

have to require a conflict of interest statement or conflict of interest disclosure

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The Committee on Publication Ethics (COPE) states in its Guidelines on Good

Publication Practice (2003) that: ‘Conflicts of interest arise when authors, reviewers, or editors have interests that are not fully apparent and that may influence their judgments on what is published. They have been described as those which, when revealed later, would make a reasonable reader feel misled or deceived.’ Many scholars, researchers and professionals may have potential conflicts of interest that could – or could be seen to – have an effect on their research. As a result, some journals require a formal Declaration of Conflicting Interests enabling a statement to be carried within the paginated published article. A potential conflicting interest might arise from relationships, allegiances or hostilities to particular groups, organisations or interests, which may influence excessively one’s judgements or actions. The issue is particularly sensitive when such interests are private and/or may result in personal gain.

Articles will be evaluated fairly and will not necessarily be rejected when any

competing interests are declared. Examples of conflicts of interest might include the following, although it is not an exhaustive list:

- Having received fees for consulting.
- Having received research funding.
- Having been employed by a related company.

- Holding stocks or shares in a company which might be affected by the publication of your paper.
- Having received funds reimbursing you for attending a related symposia or talk.

If there are other interests which the reasonable reader might believe has affected

your research, you may also wish to declare them.

*Please note that it is not expected that details of financial arrangements be disclosed when a competing interest is declared.

How do I make a declaration?

Please include such a declaration at the beginning of your manuscript, using the heading 'Declaration of Conflicting Interest'. If no conflict exists, please state that 'The Author(s) declare(s) that there is no conflict of interest'. Author s' obligations regarding conflicting interests

- All forms of financial support, including pharmaceutical company support, are acknowledged in your Contribution.
- Any commercial or financial involvements that might present an appearance of a conflict of interest related to the Contribution are disclosed in a covering letter accompanying the Contribution, and all such potential conflicts of interest will be discussed with the Editor as to whether disclosure of this information with the published Contribution is to be made in the journal.
- You have not signed an agreement with any sponsor of the research reported in the Contribution that prevents you from publishing both positive and negative results or that forbids you from publishing this research without the prior approval of the sponsor.
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Editor obligations regarding conflicting interests:

The same obligations equally apply to editors or guest editors writing an editorial

that will be published in the journal. Additional Information You may find the following useful resources to refer to for more information on Conflict of interest policies, existing codes of practices and more general good practice in relation to journal publication ethics:

- View the guidelines published on good publication and the Code of Conduct by the Committee of Publication Ethics (COPE).

- View the example published by the International Committee of Medical Journal Editors (ICMJE).
- View a Common Standard for Conflict of Interest Disclosure, published by
- Center for Science in the Public Interest.

Appendix E: Recruitment Survey for SIP

The information sheet, consent form, and demographic questions were presented together in a Microsoft Forms questionnaire that the participants could access using their work emails.

Information Sheet:

Full title: Exploring Staff Experiences of Support Following an Emotionally Charged Incident at the Highfield Adolescent Inpatient Unit: A Service Improvement Project

This study aims at understanding staff experiences of the support offered and provided by the Highfield Adolescent Unit following an emotionally charged incident with the hopes of making recommendations to the service for improvement.

What is an emotionally charged incident? An incident involving a young person who's distressed, unable to de-escalate themselves, or is a risk to themselves/others which requires staff input and has an impact on the staff member's wellbeing. This can include incidences involving physical holds/restraints, medication, NG feeding, self-harm, AWOL etc.

Who is conducting the research? Candelaria Martinez Sosa, a Trainee Clinical Psychologist completing a Doctorate of Clinical Psychology at the University of Oxford along with two Clinical Psychologists, Dr. Samuel Lloyd-White and Dr. Ciorsdan Anderson.

Who can join the study? Anyone who currently works at the Highfield Adolescent unit.

Why should I take part? We hope to give you a voice to express your own experiences. This will help us develop recommendations for the service to improve the post-incident support you receive.

What do I have to do? Take part in an online or face-to-face interview about your experience of the current support in place for staff who have experienced an emotionally charged incident. The interviews will last around an hour to an hour and a half each.

How will my information be managed? The interviews will be recorded (without cameras if preferred) and later transcribed. To ensure confidentiality, any identifiable information will be removed. This information will be kept in a secure OneDrive along with non-anonymized information such as consent forms and the recordings that will only be accessible by the research team. You have the right to withdraw from the study before the analysis of the data (which will occur in late January '24) by letting the research team know. A pseudonym will be created for the transcript by the researchers to locate your data. In the case that you wish to withdraw, all your data will be immediately deleted. All data will be kept for three years and then destroyed.

Your safety and wellbeing: This is of the utmost importance to us. Should any concerns around your safety or risk be raised during the interviews, it is my duty of care to inform the lead Clinical Psychologist, Dr. Samuel Lloyd-White, who is a supervisor on this project. Dr Lloyd-White will then contact you to follow up and ensure that appropriate support is in place. I will inform you prior to doing so.

What are the risks of participating? We are aware that some of the questions in the interview may evoke difficult or distressing memories and discussing these incidences may be emotionally charged. There will be the option for a debrief following the completion of the interview if required. Should you require further support, information on how to access in-house and external staff support services will be provided.

What will happen after the study? At the end of the study the findings and recommendations will be shared with the team. The aim of the research team is to publish the findings in a psychological journal to broaden the understanding of post-incident support in inpatient CAMHS settings.

If you have any questions regarding the above information or the project, please email the Trainee Clinical Psychologist (Candelaria.Martinez@oxfordhealth.nhs.uk) .

Consent form:

1. I confirm that I have read the information page for the above study and have had the opportunity to consider the information, ask questions, and have had these questions answered to my satisfaction.
    a. Yes
2. I confirm that I understand that my participation in this research project is voluntary, and I am free to withdraw at any point before the data is analysed (end of January 2024) and request my data to be deleted without giving any specific reason (a pseudonym will be created by the researchers to locate your data).

    a. Yes

3. I understand that the interviews will be recorded, transcribed, and kept secure by the researchers and that any identifiable information will be removed to protect my confidentiality.
    a. Yes
4. I understand that my data will be stored for three years after the completion of the study.
    a. Yes
5. I understand that should there be any concerns about my, or anyone else's safety, Dr. Samuel Lloyd-White will be contacted and informed.
    a. Yes
6. I understand that this study will be submitted for publication.
    a. Yes
7. Considering the above information and that on the information sheet, I agree to take part in the above study.
    a. Yes, and I agree and consent to take part in the above study.
8. Please enter your full name:
9. Please enter your Oxford Health email address (this is so the researcher can contact you to set up the interview).
10. What is today's date?

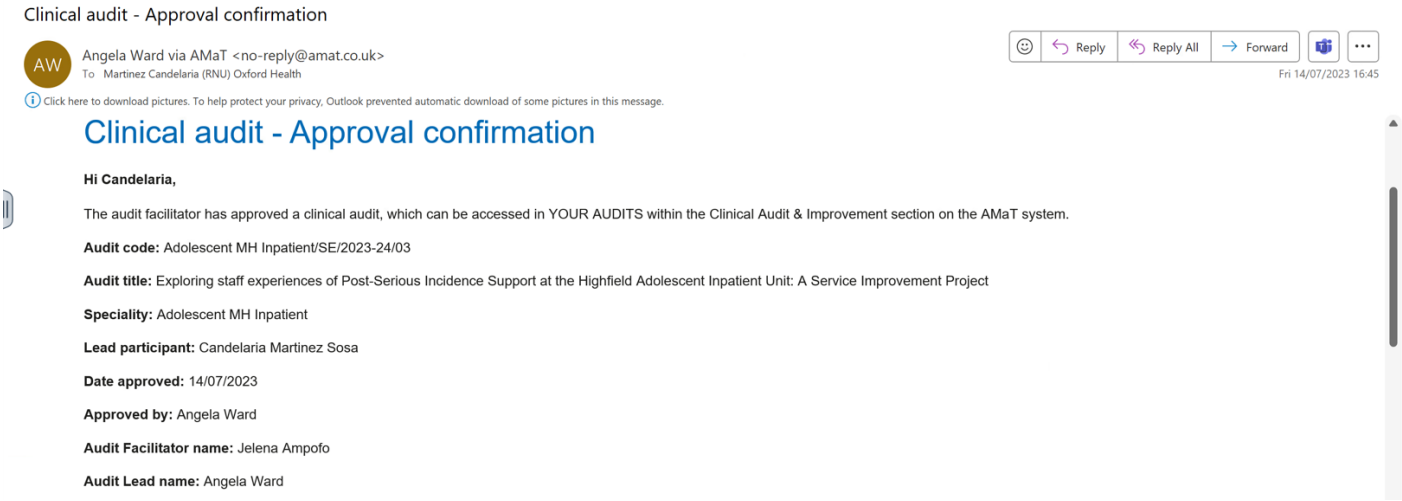
Demographic questions.

1. What gender do you identify with?
    a. Male (including transgender men)
    b. Female (including transgender women)
    c. Non-binary
    d. Prefer not to say
    e. Other
2. Please indicate your ethnicity below.
    a. Asian or Asian British
    b. Black, Black British, Caribbean, or African
    c. Mixed or multiple ethnic groups
    d. White
    e. Other
    f. Prefer not to say
3. What profession are you in?
    a. Registered nursing staff
    b. Healthcare assistants
    c. Allied Health professional (occupational therapist, assistant psychologist, psychological wellbeing practitioner etc.)
    d. Medic
    e. Qualified psychologist
4. How long have you been qualified for? *It must be noted that this question was followed up with an email regarding length of time spent on the ward considering some individuals*

may have been working on the ward in other roles and HCAs do not require qualifications.

a. Under 6 months
b. 6months – 1 year
c. 1-4 years
d. 4-10 years
e. 10+

Appendix F: Ethical Approval for SIP



Clinical audit - Approval confirmation

AW Angela Ward via AMaT <no-reply@amat.co.uk>
To Martinez Candelaria (RNU) Oxford Health

Reply | Reply All | Forward

Fri 14/07/2023 16:45

Click here to download pictures. To help protect your privacy, Outlook prevented automatic download of some pictures in this message.

Clinical audit - Approval confirmation

Hi Candelaria,

The audit facilitator has approved a clinical audit, which can be accessed in YOUR AUDITS within the Clinical Audit & Improvement section on the AMaT system.

Audit code: Adolescent MH Inpatient/SE/2023-24/03

Audit title: Exploring staff experiences of Post-Serious Incidence Support at the Highfield Adolescent Inpatient Unit: A Service Improvement Project

Speciality: Adolescent MH Inpatient

Lead participant: Candelaria Martinez Sosa

Date approved: 14/07/2023

Approved by: Angela Ward

Audit Facilitator name: Jelena Ampofo

Audit Lead name: Angela Ward

Appendix G: Interview Questions for SIP

Below is a copy of the structured interview questions that were included in the study. Please note that as this was a semi-structured interview, the researcher was able to ask further questions to each participant to elicit more information if and when needed.

1. Tell me about a time you have witnessed or been a part of an emotionally charged incident involving a young person?
2. What was your reaction to this incident (any thoughts or feelings or anything that you did)?
3. What happened after the incident?
4. What is your understanding of the post-incident support available currently?
5. What was the nature of the support you received following the incident? Who did you speak to, what did you do afterwards?
    a. From work
    b. From your personal life
6. (Supplementary detail question if not provided in Q5): If you received support from the service, how long after the incident did you receive the support and in what context (group, individual, peer etc.)?
7. How did the support you receive make you feel about the incident?
8. What are the reasons for why you sought that type of support?
9. What was helpful and unhelpful about the support you received?
10. Was there anything that made it more difficult to access formal support from the service?

11. If you would have liked something different to have happened what would that have been?

Appendix H: Position statement/reflection for SIP

I am a 26-year-old White woman from South America. I grew up moving to various countries but have spent the entirety of my adult life living in the United Kingdom. While I have experience working with children and adolescents, I do not have any direct experience working in CAMHS inpatient wards, nor conducting research with staff. For the current study I am aligning myself with a critical realistic epistemological stance considering the nature of the project and the search for an understanding of the current support being provided for staff following an ECI. Considering my personal and professional background, I kept a reflexive log following each interview to detail my thoughts, feelings, and experiences, and to be able to position myself within the research taking place.

Throughout the research process, I kept a reflexive log to help position me within the data. One of the reflections I made following the interviewing process is how easily I would often slip into a therapeutic mode while interviewing. As is part of the semi-structured interview, I had flexibility to enquire or explore certain areas more than other and to ask for clarification. When reading through the transcriptions of the interviews, I found myself often getting swept up in the story, providing validation, summarizing responses, and sometimes asking clarifying questions to better understand the story which are all elements that I bring with me from my clinical background. I reflect now on how my job role and training might have influenced the interviews in both positive and negative ways. Throughout the interviews, it felt as though staff were comfortable to share difficult experiences and explore their emotional impacts with me which provided rich details and important findings. Conversations felt like they flowed quite naturally. On the other hand, while asking follow-up questions was helpful to check my understanding, I

wonder whether it might have likewise restricted the depth of responses that the interviewees provided. This reflection is something I will continue to keep in mind as I conduct research in the future along with how my personal and therapeutic style might interact with the interview process. Keeping a reflexive log was helpful to identify potential impacts on the research and to provide me with a space to digest and reflect on the conversations I was having.

Appendix I: List of Incident Categories Excluded from the Audit (SIP)

The following incident categories were excluded from the audit following discussions with the research supervisors on their relevance to the project.

- Poor discharge/transfer from OHFT
- Poor admission onto ward
- Over 18 years on adolescent unit
- Collision with object (staff)
- Caught/trapped/shut on (patient)
- Delay in providing care/treatment/follow up.
- Record keeping, treatment/care errors.
- Standard of care/treatment provided.
- Poor communications (patients affected)
- Breach of patient confidentiality
- Medical devices not checked/cleaned.
- Non-medical devices
- Faulty equipment non-medical device.
- Patient fall (if accidental)
- Patients fall while mobilizing/walking in dept or ward (*if not considered to be emotionally impactful for the staff – this was determined by the internal supervisor who would further investigate the incident*)
- Faint/dizziness/collapsed.
- Staff fall.
- Fire (accidental)

- Fire false alarm (smoking activation)
- False alarm (steam/heat/cooking activation)
- Fire risk (other)
- Health (burns and scalds)
- Medicines storage/security
- Prescribing incident
- Medicines administration/supply to patient
- Sharps/needlestick injury to patient.

Appendix J: Incident Tables – Additional Information for SIP

Table: Incidents recorded during research period per incident type.

Incident type	Number of incidents (%)
AWOL or missing person (incl. attempted or risk of AWOL, detained-no leave, detained-escorted, or not returned from leave)	34 (3.36)
Health (incl. patient resisting NG feed or resisting/refusing treatment, self-neglect, physical condition)	173 (17.11)
Violence/aggression (incl. physical and verbal abuse, violence to property)	117 (11.57)
Security (incl. banned items, weapons, unsafe access, risk to staff safety, breach of environment, vandalism, and deliberate damage to property)	34 (3.36)
Self-harm (incl. ligatures, cutting, overdose, self-striking, re-opening wounds, ingestion of harmful items, other types).	634 (62.71)
Sexual (incl. inappropriate touching staff affected, sexual assault on staff, allegations made patient to patient, and patients found in compromising situations)	13 (1.29)
Sharps/needles (incl. contaminated needlestick or sharps/instruments injury on staff)	4 (0.40)
Falls (fall while mobilizing patient)	1 (0.10)

Infection control (incl. staff exposure to bodily fluids)	1 (0.10)
Grand Total	1011 (100%)

Table: Incidences of restrictive practice

Level and type of restrictive practice	**Number of incidences**
1. Low level holds – simple escort hold	**14**
AWOL or missing person	1
Long term segregation	1
Security	3
Self-harm	5
Violence	4
2. Medium level – double handed hold	**192**
AWOL or missing person	14
Health	90
Security	8
Self-harm	46
Sexual	1
Fall	1
Long term segregation	1
Violence	31
3. Medium level – figure 4 hold	**123**

AWOL or missing person	4
Health	72
Property related	1
Security	2
Self-harm	30
Violence	14
4. **Unknown hold types**	**13**
AWOL or missing person	3
Health	3
Security	1
Self-harm	3
Violence	3
Grand total	**342**

Appendix K: Additional Quotes for SIP

Theme	Quote
Experiences during incident	**Emotional impact** • "I think there was one recently maybe, like two months ago where I was assaulted, or I was being kicked by a young person that was quite difficult" (P2) • "I've been working for over X years, so I've dealt with suspended ligatures, um you know battery ingestion, um AWOL incidents like everything"(P6) • "One specific one was a young person had tied a ligature um, and we have to cut it off" (P10) • "I remember the first time I saw patient um being transferred in holds to be NG feeds and she was screaming and shouting…it was the first time I'd witnessed it and I found it really hard to watch" (P12) • "That emotional side of you know, holding on to someone and them saying, you know and then asking you to get off. Um yeah, that could be quite difficult" (P1) • "But yeah, it's, it doesn't feel like a natural thing to put someone in hold, especially a child." (P3)

	• "That was quite sad and quite tense. Intense for it to be…because I think that was the first time I had someone go really limp" (P10) • "It was very scary I would say in that moment because I, because I wasn't sure, like, what could it lead to? The incident could lead to" (P4) **Practical difficulties** • "We decided as a team that only female staff would be involved in restraint and in the de-escalation…Um and that put quite a lot of pressure on us because on those shifts, when the roster's done and the team is allocated, they don't necessarily take into account the male female ratio." (P3) • "On Saturday when I was working, there were only three permanent staff, most were bank and agency. So, if then something happens a) you don't have that support already 'cause people…and it's not their fault. I'm not saying it's their fault. It's just they're not used to the ward, they're used to the way we work, they're not used to that kind of…and we you don't have that working relationship that you normally have. Um so, at that point it just becomes more difficult." (P6) • "We were on a ward which we'd never worked on. We didn't know how it functioned, we didn't know which door open which door, and we didn't have any access to it." (P9)

	• "I think the third thing was that the communication to the placement team wasn't done properly about the risks that the young person can pose" (P4).
Contextual barriers	**Ward acuity** • **"**I think it's, it's extremely high at the minute. Staff are sort of struggling. Um I think that affects our ability to, to think and to take a break and as a system, as a unit we, we're sort of back-to-back" (P13) • **"**The acuity is pretty high, we're dealing with a lot of incidents like back-to-back. So I think it would be really difficult today to kind of schedule in a debrief because we don't have the staff, we don't have the time." (P2) • **"**I called out for help because there was someone in the corridor…Um there was a bit of a delay in them attending, which wasn't ideal" (P5) **Normalization** • **"**I think we get complacent because we think we do it every day." (P8) • **"**You've got to take that [suicide] as a realistic part of work." (P7) • **"**But it's just like, oh yeah great, it's part of the job that you hate but, yeah." (P14) **Speaking up feeling difficult**

	• "these things happen a lot and um maybe um it's seen it a bit every day so um because it happens a lot and it's seen a bit every day, I guess some people may feel less inclined to kind of ask about it." (P1) • "in a group, a room of six people it just doesn't seem it's going to be...I'm not sure who would really be the first to come to say that they were affected." (P3) • "I think…I don't think I could go ask her for help" (P10)
Views of informal support	**Informal support at work** • "We've got a really good office now um, so I've got some um some extra disciplines which is really helpful, kind of psychology, medics, psychology and medics actually. Um used to be a dietician but not anymore, and that's a really helpful space. We just…it's really informal, but it's really helpful. So, kind of talk about things, reflect on things, get a few pers-, perspectives, offload." (P12) • "a lot...some of my colleagues are like my friends now. So, I say, like, they were really helpful to talk to" (P5) • "Then the other nurse actually offered the cup of tea, which was really, really helpful…I think people making the tea was probably more important (laughs)." (P7) • **"**The distractions and the informal support from them was really helpful." (P9)

	Informal support outside of work • **“**Lots of that kind of thing. It cleared my head.” (P10) • **“**Signed up for tennis, which is a good outlet.” (P12) • **“**My husband is probably my biggest support.” (P11) • **“**I live with friends, and it's a really lovely and supportive housemate and she, she kind of knew that these nights were becoming a pattern and (inaudible)…every time I got home from nights she would make my bed and like put in a hot water bottle...I felt super supported” (P13) **Self-care** • **“**I just made sure I had to, I was doing lots of self-care in the day, well I was asleep, so having a good sleep and then having a good meal and like.” (P3) • **“**I had my own break physically and mentally yeah” (P9) • “Used to have quite a long debriefing every evening, but I think people, you know, you gotta balance that between going off and sometimes it’s actually quite late and um wanting to get away from the unit because actually there's been a full on day you don't want to stay an extra 5-10 minutes because you've had enough.” (P7) **Desired emotional support** • “I think it would have been nice had it been remembered um you know that there were still people in there” (P1)

	• "It's a dream, my view is that senior, like the people above here should be coming and, not specifically me, but all of the nursing team saying, "hi how are you? How are you, how are you getting on?" (P13) • "maybe just the, the pe-, the nurses in charge and management who are present in the instance to have maybe acknowledge that some of us HCAs had um, been really involved with it" (P3)
Views of formal support	**Debriefs** • "But I think a lot of us at that point are still...your adrenaline hasn't gone down and you're still like, yeah, I don't know how it is for others response but for me, I am still at work. I do need to go back out there and I, so I don't want to like talk about my feelings and stuff because then I'm going out there, a mess" (P6). • Time, people's availability, when…and sometimes the incidences happen and you're just like…yeah that was the incident whereas actually it probably is impactful, but you just forget about it or you've moved on or there's something else more pressing" (P14). • "I prefer maybe next day debriefs just because it gives me time to process what happened, what went through my mind, how I was feeling and everything" (P4)

	• "I think it was supportive being told to have a debrief. Like you are going to have one." (P5) **Supervision** • "I've got really good supervisor and I feel very comfortable with being able to speak to them about anything." (P10) • "I talked to my supervisor about it like the same day" (P2) • "I find it very easy because we both have a very good relationship and whenever I'm in an incident and I feel find it very difficult, I will e-mail her and there's like an immediate supervision that we book" (P4) **MDT input** • "I think the Thursday afternoon group is good. It's led by, led by uh X, who's a former family therapist here so that, that's actually quite supportive because it's regular." (P7) • "The difficulty we have is that when we are NG feeding it goes in at 2:00 PM and we lose our slot for meetings." (P8) • "Sometimes you're not able to go to them, like if you're in the wrong day, wrong shift." (P2) **Psychology input** • "I wasn't in. And then, yeah, and then that's when X (psychologist) emailed me saying, let's talk. I think that's it." (P10)

	• "If somebody's gone through something quite difficult, we could always refer to our clinical psychology team. I know Dr. X (psychologist) did a lot of it. Our family therapist did a little bit of it as well." (P11) **TRiM** • "It was like…it felt great. It was like an hour's free therapy. I'll, I'll be trimmed again, please. I think I'm very positive about it because it was done by an experienced family therapist." (P13) • "I've used TRIM a couple of times since they've started it. Once with an internal person from here um but isn't part of the nursing team, so it was actually really helpful to, yeah, do it with them and then not feel like actually what I'm going to say is going to really unsettle you" (P9) • "I feel like I almost dealt with it before I wouldn't have had to have TRiM support" (P2) • "I think it would have been helpful if it was pushed on me because I wouldn't have ask for it." (P5) **Desired practical support** • "In an ideal world they [critical meetings] would be more protected" (P11) • "I think we should be doing debriefs more routinely and I think with all of the MDT…even if they weren't involved…Not only so the medics can know what's going on, if we haven't been

	involved in that incident, but so that we can all think together." (P12) • "So just realising that some people don't like the immediate debrief and just giving some chances a couple of days later and just go through it a little bit more." (P6) • "I know a couple of [the medical students] have um started placement here, found it quite hard and ended up having a couple of days off[...]so maybe it's something about just in the kind of, thinking wider about the support that we offer medical students who come on placement[…]just preparing them for what they might see and and letting them know about the avenues of support" (P12).
Validation and reassurance	• "I think that that's the most important. To have someone to listen, validate, um well for me anyway" (P13) • "We had really experienced staff and if they're feeling the same way like "this is really, really bad" like it kind of normalises the feelings that you're experiencing almost?...So that was almost helpful in a way like it validated the feelings I was feeling." (P2) • "I think it just made me feel better that I could say it, speak about it, "That was horrible. That was absolutely not nice" but its over now and if it happens again, I'm able to speak about it again if I need to" (P10)

	• "I think it just sort of took away the, the knee jerk worry that I'd somehow overstepped a professional boundary." (P11)

Appendix L: SIP Lay Summary

Staff working in adolescent inpatient settings are often involved in or see emotionally charged incidences on a daily basis. Emotionally charged incidences refer to events such as aggression, violence, witnessing self-harm or suicide attempts, having to engage in physically restraining patients, as well as involuntary re-feeding of patients. Not only does this have a negative impact on the mental health and wellbeing of the patients themselves, but also on the staff. This is particularly the case at the Highfield unit. The service has made efforts to provide support for staff members, but there was little information as to whether they found this useful, helpful, or enough. This project hoped to understand the staff's experiences receiving support from the service following emotionally charged incidences. This included interviewing 14 staff members from different professions within the service as well as gathering data to understand how often staff are exposed to such incidences to provide additional context. Five themes were identified through this process which included: experiences during incidences, contextual barriers, views of informal support, views of formal support, and validation and reassurance. The staff provided valuable information with regards to the areas of support that were found to be helpful or which required modifications. Recommendations for improvement of the staff support program were developed and presented to the leadership team.

Appendix M: Journal guidelines / requirements for SIP

Key learning points:

What is already known:

- Staff in adolescent inpatient units are exposed to distressing/emotional incidences which have a negative impact on mental health and wellbeing.
- While guidelines suggest support be provided to staff, it is often missing or insufficient.

What this study adds:

- Understanding of staff experiences of emotionally charged incidences and views on support provision.
- Context and ward acuity of the types of ECIs staff are exposed to at the HU.
- Recommendations to improve the post-incident support provision.

What impact might this have?

- Provides the service with a view of the experiences of their staff and integrate their feedback into improving the support provision which may improve staff wellbeing, and clinical practice.

Competing interests: There are no competing interests.

Funding: This project did not require any funding.

The author guidelines have been copied directly from the Journal website.

Aims and scope

Occupational Medicine is an international peer-reviewed journal which provides vital information for the promotion of workplace health and safety. The key strategic aims of the journal are to improve the practice of occupational health professionals through continuing education and to raise the profile of occupational health with key stakeholders including policy makers and representatives of employers and employees.

Topics covered include work-related injury and illness, accident and illness prevention, health promotion, occupational disease, health education, the establishment and implementation of health and safety standards, monitoring of the work environment, and the management of recognized hazards. Contributions are welcomed from practising occupational health professionals and research workers in related fields.

Occupational Medicine is committed to equity, diversity, and inclusion. We are passionately committed to improving health equity. We recognise that many groups are under-represented in research including women, people of colour, and socially disadvantaged populations. We are committed to increasing diversity and inclusion in research and publishing.

Occupational Medicine requires the equal and respectful treatment of all people. We will not tolerate discrimination or bias based on, but not limited to, sex, gender identity, disability, age, nationality, race, sexual orientation, belief system, political philosophy, or economic status. Behaviour contrary to these principles by an author, reviewer, or member of the Editorial Board, will be investigated as a potential violation of our code of ethics.

Preparing your manuscript

General guidelines on preparing your manuscript for publication can be found on OUP's Preparing and submitting your manuscript page. Specific instructions for *Occupational Medicine* can be found below.

Manuscripts must be submitted online. Once you have prepared your manuscript according to the instructions below, please visit the online submission system. The journal has fast turnaround times, aiming to make a decision after peer review within 7 weeks and keep authors updated with the progress of their paper. The journal does not consider manuscripts or abstracts for potential suitability prior to formal submission.

Funding

Details of all funding sources for the work in question should be given in a separate section entitled 'Funding'. This should appear before the 'Acknowledgements' section. The following rules should be followed:

The sentence should begin: 'This work was supported by …'

The full official funding agency name should be given, i.e. ‘the National Cancer Institute at the National Institutes of Health’ or simply 'National Institutes of Health' not ‘NCI' (one of the 27 subinstitutions) or 'NCI at NIH’

Grant numbers should be complete and accurate and provided in brackets as follows: ‘[grant number ABX CDXXXXXX]’

Multiple grant numbers should be separated by a comma as follows: ‘[grant numbersABX CDXXXXXX, EFX GHXXXXXX]’

Agencies should be separated by a semi-colon (plus ‘and’ before the last funding agency)

Where individuals need to be specified for certain sources of funding the following text should be added after the relevant agency or grant number 'to [author initials]'.

An example is given here: ‘This work was supported by the National Institutes of Health [P50 CA098252 and CA118790 to R.B.S.R.] and the Alcohol & Education Research Council [HFY GR667789].

Our publisher, Oxford University Press, will deposit all NIH-funded articles in PubMed Central. Authors must ensure that manuscripts are clearly indicated as NIH-funded using the guidelines above.

In order to meet your funding requirements authors are required to name their funding sources, or state if there are none, during the submission process. Further information about complying with funder mandates.

Pre-submission language editing

You may wish to use a language-editing service before submitting to ensure that editors and reviewers understand your manuscript. This is not a mandatory step but may help to ensure that the academic content of your paper is fully understood by journal editors and reviewers. Language editing does not guarantee that your manuscript will be accepted for publication. If you would like information about such services please visit our Author Resources page. There are other specialist language editing companies that offer similar services and you can also use any of these. Authors are liable for all costs associated with such services.

EASE Guidelines for Authors and Translators of Scientific Articles to be Published in English

European Association of Science Editors (EASE) has developed a set of guidelines as an aid to authors and translators preparing scientific articles for publication in English. The guidelines are available on the EASE website.

Style

All original research accepted by *Occupational Medicine* is required to conform to our standard format and style. Authors must follow the style indicated in the template in conjunction with these Instructions for Authors. Ensuring your paper meets these criteria before submission will increase the likelihood of your paper being accepted and the speed with which it is published. If your paper does not meet these requirements, it will be returned to you for revision before the formal review process begins, so lengthening the time to review your submission.

Papers should conform to the Uniform Requirements for Manuscripts Submitted to Biomedical Journals according to the Vancouver style (available from the British Medical Journal, London WC1H 9JR, UK).

Avoid the use of capitalization except for proper names, e.g. National Health Service, consultant occupational physician.

Please use British English spellings – e.g. centre not center, sulphur not sulfur and labelled not labeled. For words ending in -ise/yse or -ize follow this style: use -ise/yse for devise, surprise, comprise, revise, exercise, analyse; use -ize for recognize, criticize, minimize, emphasize, organize, ionize, polarize, parametrize (note the spelling of this word in particular).

Avoid the use of quotation marks except where a direct quote of speech or writing is made.

Authors are advised to only use abbreviations if absolutely necessary. Abbreviations should be spelled out after their first use in the text. Please avoid the use of abbreviations that are not accepted by international bodies or are ambiguous.

P values should only be quoted as follows: NS, $P < 0.05$, $P < 0.01$ and $P < 0.001$. These can be indicated using * ** or *** in tables.

All percentages should be quoted without decimal places. Tables should use the following format: n (%).

SI units should be used except for measurement of blood pressure (mmHg).

Metric units should be used, or metric equivalents quoted.

Structure

Original papers and short reports should be structured into Introduction, Methods, Results and Discussion only. Please do not use any other subheadings as these will be removed.

Your Discussion must be structured starting with a statement of your principal findings followed by strengths and weaknesses of the study, strengths and weaknesses in relation to other studies, discussing particularly any differences in results, meaning of the study: possible mechanisms and implications for clinicians or policymakers, unanswered questions and future research. We do not require a separate conclusion but suggest one or two concluding sentences at the end.

Cover letter

You must provide a covering letter with your manuscript to include the following information:

Relevant details of any prior or duplicate publication.

A statement of the roles played by each author, e.g. data analysis, experimental design.

A declaration of any possible conflicts of interest and/or funding.

A signed statement that the paper has been read and approved by all authors.

Full details for contacting the corresponding author.

Formal and documented ethical approval from an appropriately constituted research ethics committee is required for all studies involving people, medical records, and anonymised human tissues. A statement on ethical approval should be included in the Methods section of your article.

Authors should confirm written patient consent is available for all case reports.

Titles

The journal editorial policy aims at having short article titles with a maximum of 10 words. Please note that your title might be changed by the editorial team before publication.

Text abstracts

Text abstracts must be written in English. The abstract must be less than 250 words and structured into Background, Aims, Methods, Results and Conclusions.

Teaser text

All original articles, case reports, commentaries, guidelines, and editorials require a short summary of no more than 75 words. Please note this is in addition to the abstract. This ‘teaser text’ should give a flavour of the article, clearly summarising the focus and findings in a way that is understandable to non-expert readers. The teaser text will appear on the table of contents on the journal’s website. Summaries should be submitted as part of the main manuscript file, under the heading ‘Teaser text’, and before the abstract.

Key learning points

Original papers, commentaries, case reports, guidelines, and perspectives must contain three statements, which should be brief, descriptive and precise.

What is already known about this subject: In a maximum of three bullet point sentences (no more than 50 words each), please summarise the state of knowledge on this topic before your study was initiated and say why this study needed to be done.

What this study adds: In a maximum of three bullet point sentences (no more than 50 words each), provide a succinct answer to the questions “What do we now know as a result of this study that we did not know before?” and “What key message do you want to share with readers?”

What impact this may have on practice or policy: In a maximum of three bullet point sentences (no more than 50 words each) please provide a brief statement on the possible impact this may have on day to day occupational medicine practice and/or policy.

Tables and charts

The journal permits a maximum of 6 tables or figures in long format papers and 2 tables or figures in short format papers.

Tables should be presented on separate pages with a suitable caption at the top of each table. Column headings should be as brief as possible and give units of measure in parentheses. Vertical lines are not needed. Footnotes should not be used in the text. Footnotes to tables should be placed at the bottom of the table to which they refer.

Tables should be constructed and labelled in such a way that they may be understood without reference to the text.

Large tables that will occupy more than two printed pages will not be published within the article. Please present such tables as ‘Supplementary Material’. See section on Supplementary material below.

Flow Charts should be presented on separate pages with a suitable caption at the top of each chart. For consistency within the journal authors should consider following the Process Mapping Guidelines for flow chart preparation.

Figures

Figures can be supplied in either colour or black and white format. There are no additional charges for the use of colour figures. Figures should be constructed and labelled in such a way that they may be understood without reference to the text.

Figure accessibility and alt text

Incorporating alt text (alternative text) when submitting your paper helps to foster inclusivity and accessibility. Good alt text ensures that individuals with visual impairments or those using screen readers can comprehend the content and context of your figures. The aim of alt text is to provide concise and informative descriptions of your figure so that all readers have access to the same level of information and understanding, and that all can engage with and benefit from the visual elements integral to scholarly content. Including alt text demonstrates a commitment to accessibility and enhances the overall impact and reach of your work.

Good alt text should be objective and:

Concise: Given the time-consuming nature of screen reader use, strive for alt text under 100 words, and preferably around 25 to 30 words.

Consistent: Maintain language consistency with the main body of text.

Unique: Avoid repeating information found in captions or surrounding text. For images entirely explained by captions or text, consider labeling them as decorative indicating that their purpose is primarily ornamental rather than conveying additional information.

Clear: Spell out contractions, abbreviations, numbers, and non-Latin characters. Present information in a logical and consistent sequence.

Relevant: Align descriptions with the image's context, intent, and the focus of the text, and title. Different purposes within a work may warrant distinct alt text descriptions.

Simple: Because screen readers don't interpret formatting, refrain from using formatting (e.g., bullet points) in alt text.

Inclusive: Ensure your text doesn't contain additional information that a sighted person would miss.

Standalone: Screen readers indicate that alt text replaces an image, so avoid phrases like "Image of..." or "Graphic of..."

Complete: Conclude alt text with a full stop/period, allowing for a pause before the screen reader continues.

Additional considerations:

Grouped images and multi-panel figures: When images are grouped, provide alt text for individual figures rather than a collective description.

Punctuation: Screen readers are unable to interpret all types of punctuation, so only use the following: periods, commas, semi-colons, colons, parentheses, brackets, quotation mark, and sashes

Art works: Although starting with a generic "picture of" or "image of" is redundant, it can be beneficial to specify a particular type of image in art works (sculpture, painting, drawing, etc.).

Graphs: Summarize the graph by emphasizing key details, trends, and relationships in the data. If significant, explicitly list underlying values in a logical order. Avoid redundancy if key values have already been discussed in the text. Use full units like "kilometers" for accurate pronunciation by screen readers.

To submit alt text with your article, include it alongside figure captions as in the example below:

Figure 1 caption: L'Exposition Manet au Musée de l'Orangerie in 'Une Rétrospective d'Édouard Manet a Été Inaugurée Hier au Musée de l'Orangerie', *L'Excelsior*, 19 June 1932. (Photo: Bibliothèque Nationale de France.). Published in Michela Passini, A Microhistory of Heritage Creation Processes: The Impressionists Exhibited at the Orangerie (1930–1937), *Oxford Art Journal*, Volume 46, Issue 2, August 2023, Pages 241-259, https://doi.org/10.1093/oxartj/kcad023

Alt text: Decorative photograph of a vintage French journal cover featuring an article from 1932.

You can find more guidelines on how to draft good alt text at the following links:

Are there guidelines for describing complex images? | DO-IT (washington.edu)

Accessibility at Penn State | Charts & Accessibility (psu.edu)

References

References should be indicated in the text as numbers in brackets, placed in line with the text and in order of appearance. The following format should be used:

Madan I, Walker-Bone K. Evaluation of a musculoskeletal training package for occupational health practitioners. *Occup Med (Lond)* 2013; 63: 579-582.

Palmer K and Brown I. A general framework for assessing fitness for work. In: Palmer K, Brown I, Hobson J. *Fitness for Work: The Medical Aspects*. Oxford: Oxford University Press, 2013.

References should be easily accessible. Therefore, authors should avoid where possible referring to the following:

Submitted articles awaiting acceptance

Doctoral theses

Book reviews

Abstracts of papers presented at meetings (unless published in peer reviewed journals)

Supplementary material

Supporting material that is not essential for inclusion in the full text of the manuscript, but would nevertheless benefit the reader, can be made available by the publisher. There is no extra charge for the publication of online-only supplementary data/tables/figures. Such material should not be essential to understanding the conclusions of the paper but should contain data that is additional or complementary and directly relevant to the article content. Such information might include more detailed methods, extended data sets/data analysis, or additional figures/tables.

All text and figures must be provided in suitable electronic formats. A maximum of 10 files is acceptable to make up the Supplementary material unit for the article. All material to be

considered as supplementary material must be submitted at the same time as the main manuscript for peer review. It cannot be altered or replaced after the paper has been accepted for publication. Please number Supplementary tables, figures and boxes with an S prefix (e.g. Supplementary Table S1, Supplementary Figure S1, Supplementary Box S1). Also ensure that the supplementary material is referred to in the main manuscript where necessary.

Article types

The article types accepted by the journal are listed below. The section on Preparing your manuscript includes instructions for each element, such as abstracts, key learning points, tables, and figures.

All word counts are exclusive of abstracts, teaser text, references, figure legends, and text in tables.

Original papers

Original papers can be submitted in long or short format. Authors must follow the style indicated in the template in conjunction with these Instructions for Authors.

Abstract: (maximum 250 words using the following headings only: Background, Aims, , Methods, Results and Conclusions)

Teaser text: maximum 75 words

Key learning points: three key statements, maximum 50 words each

References: maximum 40 in long format papers, maximum 20 in short format papers

Tables/figures: maximum 6 tables/figures in long format papers, maximum 2 tables/figures in short format papers

Word count: maximum 3000 for long format papers, 1000 words for short format papers

After publication

Changes to published papers

The journal will only make changes to published papers if the publication record is seriously affected by the academic accuracy of the published information. Changes to a published paper will be accompanied by a formal correction notice linking to and from the original paper.

As needed, we follow the COPE guidelines on retractions.

For more information and details of how to request changes, including for authors who wish to update their name and/or pronouns, please see OUP's policy on changes to published papers.

Promoting your work

As the author, you are the best advocate for your work, and we encourage you to be involved in promoting your publication. Sharing your ideas and news about your publication with your colleagues and friends could take as little as 15 minutes and will make a real difference in raising the profile of your research.

You can promote your work by:

Sharing your paper with colleagues and friends. If your paper is published open access, it will always be freely available to all readers, and you can share it without any limitations. Otherwise, use the toll-free link that is emailed to you after publication. It provides permanent, free access to your paper, even if your paper is updated.

Signing up for an ORCID iD author identifier to distinguish yourself from any other researchers with the same name, create an online profile showcasing all your publications, and increase the visibility of your work.

Using social media to promote your work. To learn more about self-promotion on social media, see our social media guide for authors.

Find out how Oxford University Press promotes your content.

Appendix N: PPI Involvement Description for TDRP

The researcher met with three UK veterans virtually prior to beginning the project. These individuals were crucial in the development of the project. They provided a clear understanding of the different types of veterans and the language utilized when referring to veterans. This was crucial information to include in the PIS which they reviewed in detail and provided feedback for. They likewise reviewed the four questionnaires to be included. This helped us in identifying whether the questionnaires were appropriate and understandable and whether any language within the questionnaire had to be updated. The veterans also provided the trainee with information with regards to the best form of recruitment and charities to reach out to for support.

Appendix O: Survey Materials for TDRP

Please note that these materials were presented within a Qualtrics survey.



How does returning to civilian life impact moral injury in UK military veterans?

Participant Information sheet:
Central University Research Ethics Committee (CUREC) Approval
Reference: R92110/RE005

V3 (28.11.24)

You are being invited to take part in a research project. Before you decide, it is important for you to understand why the research is being done and what it will involve. Please take time to read the following information carefully and discuss it with others if you wish. Ask us if there is anything that is not clear or if you would like more information. Take time to decide whether you wish to take part.

1. Who is considered a veteran?

Any person who is an ex-serving member of the UK armed forces (including regular reservists)

2. General Information

We know that, as veterans, you may have been exposed to difficult events during your service. As a result, you may have experienced symptoms of Moral Injury. Moral injury is a mental health difficulty, not a diagnosis, where individuals experience feelings of shame, guilt, anger, hopelessness, loss of trust in oneself and others, and sometimes religious or existential conflict because of being exposed to what's called a potentially morally injurious event (PMIE). A PMIE is an event where an individual has done or seen something that they feel goes against their moral beliefs or values.

We also know that as veterans, whether you have been exposed to PMIEs or not, reintegrating back into civilian life can be complicated and sometimes difficult. Thus, this research aims to understand whether, and/or how well veterans reintegrate back into civilian life after the end of service impacts their experience of Moral Injury (MI) symptoms. It is also important to note that

you **do not** have to have Moral Injury to participate in the study.

To participate in this study, you must be...
- A military veteran (an ex-member of the UK Armed Forces)
- Living in the UK
- 18 years or older
- Not currently serving in another country's military.

Please read through this information before agreeing to participate (if you wish to) by ticking consent boxes below.

You may ask any questions before deciding to take part by contacting the researcher (details below).

This research is being completed under the supervision of Dr. Fiona McFarlane (Clinical Psychologist) and Dr. Adele Stevens (Clinical Psychologist).

3. What do I have to do?
You will be asked to complete some questions about yourself, such as your age, gender, ethnicity, years of military service etc., as well as complete some questionnaires about your military service and emotional wellbeing. The questions you will be asked to answer will ask you about some of your experiences in the military including asking about any experiences of having witnessed or been a part of an incident that you felt went against your moral code. You will also be asked how you have understood those experiences, your well-being and how you've integrated back into civilian life. This should take about 6-12 minutes. No background knowledge is required, and all questions can be answered in a scale format (you will not be asked to provide any details about any events). If you would like to receive a summary of the results, we will ask you to provide an email address. This will be collected separately and never be linked to your responses. This is also optional.

4. Do I have to take part?
No. Please note that participation is voluntary. If you do decide to take part, you may withdraw at any point for any reason before submitting your answers by closing the tab on the browser. No partial or incomplete data will be kept. Because participation is anonymised (not linked to any personal details), once you click submit, you will be unable to withdraw your data from the study.

All questions require a response, please answer to the best of your ability. For some demographic questions, there will be a 'prefer not to say' button.

5. What are the risks and benefits of participating in this study?
Participating in the study will provide the researchers with information that can be used to better understand moral injury. The hope is that the results will not only help guide future research, but that they will also be helpful for the military, charities, and NHS clinics when they provide support for veterans after they are discharged from the military and reintegrate back into civilian life.

We recognise that thinking about previous military experiences could raise or trigger some difficult or distressing emotions and/or memories. Participation in this study is entirely voluntary. If you are particularly concerned about it bringing up difficult emotions or memories, please consider what time of day you complete the survey and whether anyone is around for support if needed. At the bottom of each page, and upon completion of the questionnaires, there will be information on national services and support you can access should you need to. **We unfortunately cannot provide any 1:1 support following this survey.**

6. How will my data be used?
All responses to questionnaires will be anonymous. If you would like to receive a summary of the findings at the completion of the study, you will be able to follow a link to a separate survey where you can add your email address to be contacted. Please note that this is optional, and your email address would not be linked to your data in any way. The email addresses will be deleted as soon as the summary of the findings have been sent out. We will take all reasonable measures to ensure that data we do collect remains confidential.

The responses you provide will be stored in a password-protected electronic system approved by the University of Oxford. The Data will be held on University servers for 3 years after the publication of the work of the research, in accordance with the University of Oxford regulations.

The results will be written up for Candelaria Martinez Sosa's Doctorate of Clinical Psychology (DClinPsy) Thesis, which will be deposited both online and in print in the Oxford University Research Archives where it will be publicly available to facilitate its use in future research. We also hope to report our findings in peer-reviewed academic journals, present them to the relevant professionals at conferences, or use them to create reports for external organisations. This may be two or three years after the end of the study. You will not be identified or identifiable in any reports or publications arising from the study.

7. Who will have access to my data?
The data will be primarily accessed by the research team. However, other responsible members of the University of Oxford may be given access to the data for monitoring, audit, and/or IT support purposes.

We might also use the anonymous data in future studies, and to share data with other researchers (e.g. in online databases). Your confidentiality will be protected.

8. Who has reviewed this research?
This research has been reviewed by, and received ethics clearance through, a subcommittee of the University of Oxford Central University Research Ethics Committee R92110/RE005

9. Who do I contact if I have a concern, or I wish to complain?
If you have a concern about any aspect of this research, please speak to Candelaria Martinez Sosa (candelaria.martinezsosa@gtc.ox.ac.uk) or her supervisor Dr. Fiona McFarlane (fiona.mcfarlane@hmc.ox.ac.uk). We will acknowledge your concern and do our best to answer your query within 10 working days to give you an indication of how your concerns will be dealt with. If you remain unhappy or wish to make a formal complaint, please contact the University of Oxford Research Governance, Ethics & Assurance (RGEA) team at rgea.complaints@admin.ox.ac.uk or on 01865 616480.

Consent form (on a separate page of the Qualtrics survey)

If you have read the information above and agree to participate with the understanding that the data you submit will be processed accordingly, please tick the following boxes below to start. Please note, the following criteria must be met in order for you to participate in the study.

Are you 18 years of age or over?

☐ I am 18 years of age or over

☐ I am NOT 18 years or over

Are you a Veteran of the UK armed forces (or a regular reservist)?

☐ I am a Veteran of the United Kingdom armed forces (or a regular reservist).

☐ I am NOT a Veteran of the United Kingdom armed forces (or a regular reservist)

Are you currently living in the United Kingdom?

☐ I am currently living in the United Kingdom.

☐ I am NOT currently living in the United Kingdom

Are you currently serving in another country's military?

☐ I am NOT **currently** serving in another country's military.

☐ I AM currently serving in another country's military

Do you understand the extent of your participation in this study and your right to withdraw?

☐ I understand that my participation is voluntary, and I can withdraw from the study at any point **BEFORE** submitting the questionnaires without any reason or penalty. Following the submission of the questionnaires I understand that I will not be able to withdraw my data from the study.

☐ I DO NOT understand the extent of my participation in this study and my right to withdraw.

Have you read the information sheet and consent to participating in the study?

☐ I have read the information outlined above, understand how my data will be collected and used, and agree to take part in the study.

☐ I have NOT read the information outlined above and I DO NOT consent to participating in the study.

Demographic questions (on a separate page of the Qualtrics survey)

You will now be asked to fill out four questionnaires about your military service and emotional wellbeing. This should take you approximately 6-12 minutes. Please ensure you answer each question as incomplete answers will not be accepted.

What is your age?

- 18-28
- 29-39
- 40+

What gender do you identify with?

- Male (including transgender male)
- Female (including transgender female)
- Non-binary
- Prefer not to say.
- Other

How many years did you spend in the military?

- 1-3
- 4-7
- 8-10
- 10+

How many years have passed since you've been discharged from the military?

- 0-3
- 4-7
- 8-10
- 10+

What is your ethnicity?

- Asian or Asian British
- Black, Black British, Caribbean or African
- Mixed or multiple ethnic groups.
- White
- Other ethnic group

- Prefer not to say

Are you currently accessing therapy?).

- Yes
- No
- Prefer not to say

Signposting information (located at the end of each page on Qualtrics)

For support, please see the National Charities you can access below. Please also seek support from your GP who can recommend local services for you to access such as veteran specific services or talking therapies in your area (also known as Improving Access to Psychological Therapies - IAPT).

- Combat Stress: https://combatstress.org.uk

- Walking with the Wounded: https://walkingwiththewounded.org.uk/

- Help for Heroes: https://www.helpforheroes.org.uk/

- SSAFA: https://www.ssafa.org.uk/

- Royal British Legion: https://www.britishlegion.org.uk/

Appendix P: Statistical Assumptions for TDRP

ANOVA 1: ISLES (dependent variable)

An inspection of the boxplot indicated the presence of an outlier. This outlier was not removed from the data as ANOVA results with and without the outlier included were both significant ($p < 0.05$) and no plan was created a-priory on the management of outliers. Scores were normally distributed for the medium ($p = 0.559$) and high exposure groups ($p = 0.062$) however, not for the low exposure group ($p = 0.004$). Considering ANOVAs are robust to deviations of normality, especially considering the nearly equal groups and with large sample sizes, the analysis was continued. Homogeneity of variances, as assessed by Leven's statistic was not significant indicating the assumption was met ($p = 0.064$).

ANOVA 2: MISS-SF (dependent variable)

An inspection of the boxplot indicated the presence of one outlier. This outlier was not removed from the data as ANOVA results with and without the outlier included were both significant ($p < 0.05$) and no plan was created a-priory on the management of outliers**.** According to the Shapiro-Wilk test, scores were normally distributed for the high exposure group ($p = 0.222$) but not for the low and medium exposure group ($p = 0.042$ and $p = 0.006$ respectively). A decision was made to run the ANOVA regardless considering it is robust to deviations of normality, especially when there are equal or nearly equal groups and large sample sizes. Furthermore, visual inspection of the QQ plots and histograms looked approximately normally distributed. The homogeneity assumption was met according to the Levene statistic ($p = 0.454$).

ANOVA 3:

An inspection of the boxplot indicated no presence of outliers. Scores were normally distributed for all exposure groups as indicated by the Shapiro-Wilk test ($p > 0.05$). Homogeneity of variance was not met ($p < 0.05$) and so the Welch statistic was interpreter as well as the Games-Howell post-hoc tests.

Hierarchical regression:

There was independence of residuals with a Durbin-Watson statistic of 1.834. Visual inspection of the studentized residual plots against the predicted values indicated linearity of the data. Linear relationships between the continuous dependent variables and each independent variables were established through visual analysis. Homoscedasticity was likewise assessed through visual inspection of a scatterplot of studentized residuals vs unstandardized predicted values and the assumption was met. While there was a strong linear relationship between PMIE exposure and MI, meaning making and MI and reintegration level and MI, and the coefficients table indicated some multicollinearity, the tolerance statistics were all greater than 0.1 (with the lowest being 0.394) and the VIF statistics of the full model were all less than 10 (highest VIF statistic being 2.540). There were no studentized deleted residuals or standardized residuals of ± 3 SD, all leverage values were less than 0.2, and there were no Cook's values above 1. Visual inspection of the Q-Q plots indicates normality of the data.

Appendix Q: Additional Hierarchical Regressions

Table 1: MIEs included without questions 2, 4, 6

MI						
	Model 1		Model 2		Model 3	
Variable	B	β	B	β	B	β
Constant	23.499*		63.970**		74.967**	
Yr in military	0.177	0.008	0.026	0.001	0.194	0.009
Yr since discharge	0.187	0.009	1.118	0.056	1.042	0.053
Therapy	-4.551	-0.100	-0.415	-0.009	-1.087	-0.024
MIES total	1.615**	0.695	0.821**	0.353	0.708**	0.304
ISLES			-0.694**	-0.592	-0.512**	-0.437
MCARM					-0.283**	-0.259
R^2	0.507		0.718		0.751	
F	43.515**		85.403**		83.867**	
R^2 *change*	0.507		0.210		0.033	
F change	43.515**		125.118**		22.230**	

Table 2: MIEs not included

MI						
	Model 1		Model 2		Model 3	
Variable	B	β	B	β	B	β
Constant	60.375**		90.792**		100.043**	
Yr in military	1.538	0.072	0.422	0.020	0.565	0.027
Yr since discharge	- 1.187	- 0.060	0.999	0.050	0.924	0.047
Therapy	- 7.749*	- 0.170	0.022	0.000	- 0.910	- 0.020
ISLES			- 0.944**	- 0.806	- 0.670**	- 0.573
MCARM					- 0.359**	- 0.329
R^2	0.040		0.639		0.695	
F	2.376		74.809**		76.577**	
R^2 *change*	0.040		0.599		0.056	
F change	2.376		280.390**		30.831**	

*Note: N = 174. *p < 0.05. **p < 0.001.*

Appendix R: TDRP Journal Guidelines

Impact statement:

It has been known that one's ability to make sense of a potentially traumatic event can impact the development of various mental health difficulties, such as moral injury, which is associated with symptoms such as shame, guilt, and sometimes difficulties around one's spirituality. However, there have been some reports that have indicated the how a veteran reintegrates into civilian life might also be important to the development of Moral injury. This study found that UK veterans who were exposed to high levels of potentially morally injurious events were found to have more difficulties making meaning of that event, experienced greater difficulties reintegrating into civilian life, and experience more symptoms of moral injury. These findings have implications in the identification of military personnel at risk of developing moral injury symptoms pre-discharge and can prove useful when creating military discharge support plans.

The author guidelines have been copied directly from the Journal website.

Article Types

Research Articles

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

Should be no more than 30 pages, inclusive of:

Abstract

Tables

References

Figure or table captions

Footnotes

Endnotes

Should contain an unstructured abstract of 250 words.

At least 5 keywords. Read making your article more discoverable, including information on choosing a title and search engine optimization.

Authors should prepare manuscripts for blind review in accordance with the Publication Manual of the American Psychological Association (7th ed.). Articles not prepared for blind review in accordance with the Publication Manual will not be reviewed. Each submission must include (1) an unblinded and (2) a blinded copy of the manuscript (described above). All manuscripts should

be prepared so that they have clearly articulated goals that serve to organize the introduction, method, results, and discussions. The introduction should review relevant research and theories and conclude with a clear articulation of a testable research hypothesis or research question. The methodology should include a complete description of demographic characteristics (e.g., gender, age, race/ethnicity, education) and military career information (e.g., occupational field, years of service) of the participants; provide a thorough and concise description of all measures (e.g., lead stem with sample items, response alternatives, scoring procedures, and M, SD, reliability, and validity information); and include an explicit statement addressing confidentiality safeguards. The results section should include appropriate descriptive and inferential statistical analyses with reports of effect sizes (or strength of relationships) and confidence interval for significant and non-significant findings. The discussion section should elaborate on the unique contributions of the study to include linkages and extension from previous research and theory and address limitations and future directions. A separate title page should be prepared and include (a) the title of the manuscript; (b) names and institutional affiliations of all authors exactly as they are to be printed; and (c) name, mailing address, telephone and fax numbers, and e-mail address of the corresponding author. An e-mail address must be included on the cover page. Authors should also prepare a cover page that is included with the blind review copy of the manuscript. Public significance statements. As part of your submission, we ask that you prepare an impact statement of two to three sentences that summarizes your study in plain English for the educated public. The statement should be written in simple, nontechnical, and compelling terms that highlight the relevance and implications of your research. Please do not copy the abstract for this purpose. The aim of the statement is to summarize the article's findings and highlight their importance to human behavior within and beyond the military environment (e.g., understanding human thought, feeling, and behavior and/or assisting with solutions to psychological or societal problems). The public significance statement will enable authors to have greater control over how their work will be interpreted by key audiences. A useful guide may be found at: http://www.apa.org/pubs/authors/guidance.aspx. Please include the public significance statement in your manuscript file after the abstract.

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Stage 1 Registered Reports should not exceed 20 pages, inclusive of abstract, tables, references, and figures/table captions.

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Should be no more than 3000 words.

The abstract structure should be as follows: Introduction, Methods, Results, Discussion.

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The abstract structure should be as follows: Introduction, Methods, Results, Discussion.

Should be between 2500 and 4000 words in length.

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