



**Dissertation submitted as partial requirements for the degree of
MSc Professional Studies**

**Faculty of Health, Medicine and Society
University of Chester**

**Do the Rates of Burnout and Post-Traumatic Stress Disorder Symptoms in Jersey Midwives
Reflect those Identified in Midwives Worldwide? A Quantitative Study.**

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Date of Submission: 6th May 2025

Word count: 16,431

Declaration

I hereby declare that this dissertation is my own work and effort and that it has not been submitted elsewhere for any award. Where other sources of information have been used, they have been acknowledged.

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Abstract

Background: Midwives can experience traumatic births and perinatal events when providing care, with research indicating some will develop burnout and/or PTSD as a result. As both phenomena are linked with poor physical and mental wellbeing for individual midwives, absenteeism and the decision to leave midwifery are increased. This impacts the maternity service by reducing its retention of staff, patient experience, and overall quality, resulting in poorer maternal and neonatal outcomes. With burnout/PTSD having negative implications on both the individual midwives and wider maternity services, it is important to understand the prevalence of these phenomena in different areas globally.

Aims: This study aimed to describe the prevalence of burnout and PTSD in Jersey midwives for comparison with prevalences gained by earlier global research.

Method: A cross-sectional, online survey was conducted. Burnout was measured using the Copenhagen Burnout Inventory and PTSD by the PCL-5. 63 midwives employed in Jersey's only maternity service were sent an email link to the survey inviting them to participate.

Findings: 17.5% (n=11) of midwives responded to the survey. The small number of respondents resulted in non-statistically significant findings. 91% (n=10) of respondents demonstrated moderate-severe burnout in the Personal and Work domains, with 10% (n=1) demonstrating moderate-severe burnout in the Patient domain. 18% (n=2) were found to meet diagnostic criteria for PTSD, with a further 9% (n=1) demonstrating sub-clinical symptoms. Comparisons were made with prevalences from UK and global literature; however, the significance of these was limited by the low response rate.

Conclusion: The findings confirm that burnout and PTSD are present in a small number of Jersey midwives, though further research with a higher response rate is required to confirm the prevalence. Both phenomena have also been confirmed in midwives across the globe. With the implications of the phenomena resulting in poorer outcomes for midwives, women, and newborn babies, further research is needed to identify causal relationships and moderating factors that can be implemented to reduce their impact.

Chapter 1: Introduction & Background

1.1 Introduction

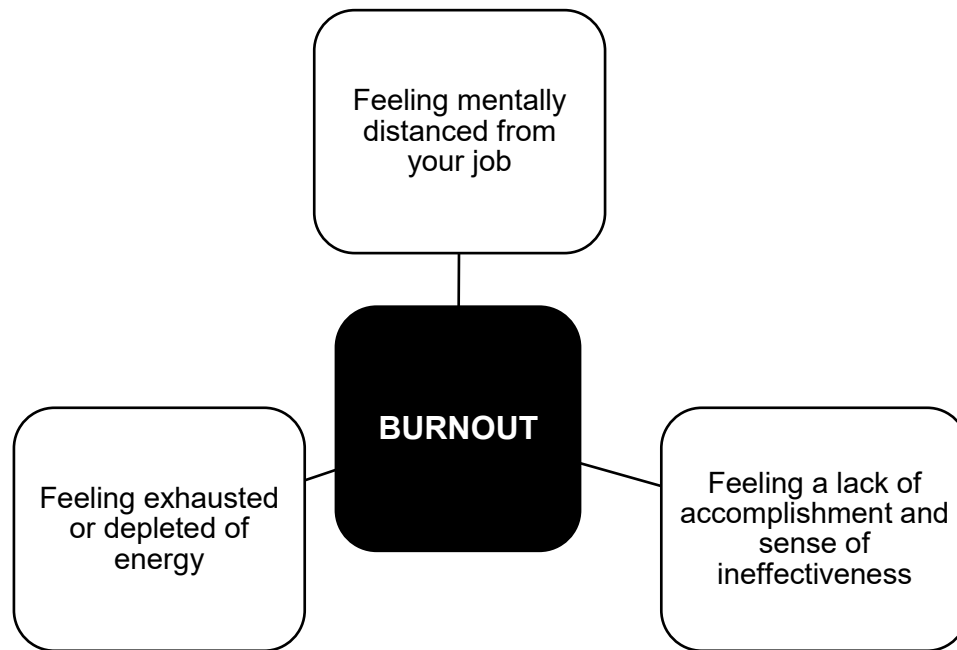
This dissertation will describe the prevalence of burnout and post-traumatic stress disorder (PTSD) in Jersey midwives. This chapter will explain current definitions and significance of burnout/PTSD, before subsequent chapters address prior literature, research methodology and method, data analysis, and findings. Discussion of implications and areas for future research will complete the dissertation.

1.2 Background

First introduced by Freudenberger (1974), the concept of burnout developed into representing the psychosocial stressors experienced by human services professionals and is now recognised as an occupational phenomenon (figure 1).

Figure 1

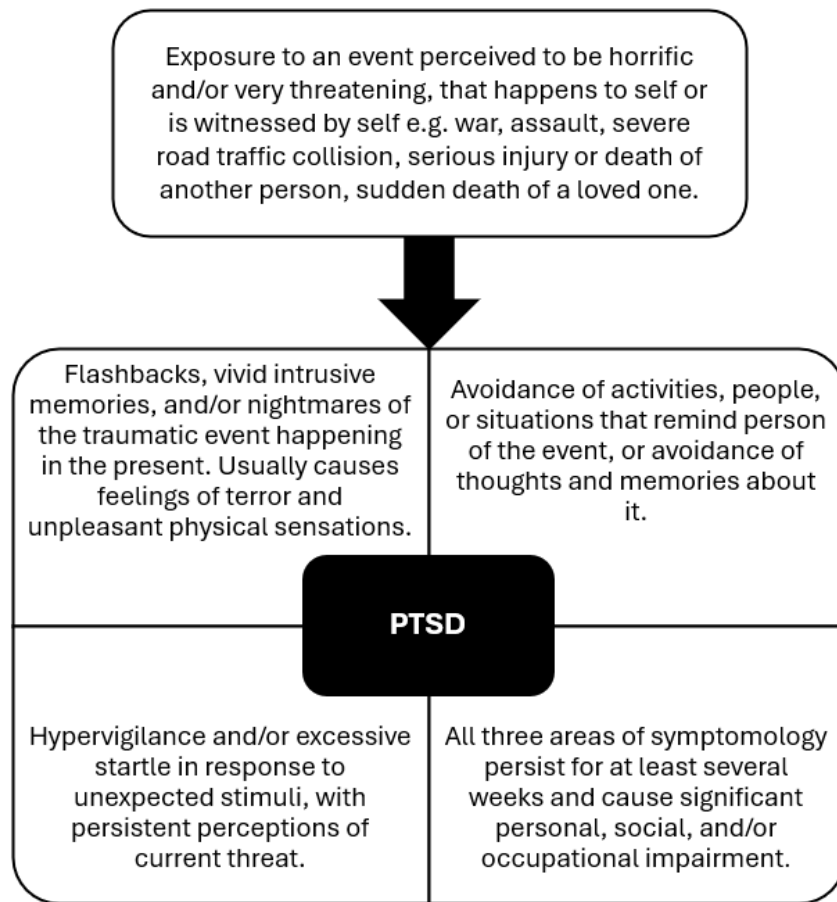
Radial Cluster Depicting the 3 Dimensions of Burnout



Note. This figure depicts a radial cluster showing the 3 dimensions of burnout. To emphasise that the dimensions can occur alone (without burnout) or together (burnout), the definition has been shown pictorially as opposed to a direct quote. Adapted from: World Health Organisation. (2025). *QD85 Burnout. ICD-11 for Mortality and Morbidity Statistics 2025-01*: Retrieved March 22, 2025, from WHO: <https://icd.who.int/browse/2025-01/mms/en#129180281>

Burnout is associated with negative ramifications including substance misuse (Rath *et al*, 2015; Oreskovich *et al*, 2015; Shanafelt *et al*, 2011), depression, suicidal ideation (Oreskovich *et al*, 2012), and decreased professional fulfilment (Lazarides *et al*, 2021).

In midwives, burnout has a positive relationship with PTSD (Halperin *et al*, 2024; Kubota & Horiuchi, 2022; Sheen, Spiby, & Slade, 2015). PTSD emerged as a concept during World War 1, known as 'shell shock' due to the cause being trench warfare (Vance & Howell, 2020). It was not until 1980 that PTSD was better defined in the Diagnostic and Statistical Manual of Mental Disorders (DSM)-III (American Psychiatric Association [APA]). The current edition of the DSM (APA, 2013) and the ICD-11 define PTSD as in figure 2.

Figure 2*Matrix Depicting the Major Criteria of PTSD*

Note. This figure depicts a matrix showing the criteria of PTSD symptoms necessary for diagnosis. To emphasise that the event and dimensions can occur alone (non-PTSD) or together (PTSD), the definition has been shown pictorially as opposed to a direct quote. Adapted from: World Health Organisation. (2025). *6B40 Post traumatic stress disorder. ICD-11 for Mortality and Morbidity Statistics 2025-01*. Retrieved March 22, 2025, from WHO: <https://icd.who.int/browse/2025-01/mms/en#129180281>

Midwifery's relationship with trauma has been well established with up to 85% of midwives reporting witnessing a traumatic birth (Schröder *et al.*, 2016). Leinweber & Rowe (2010) write that a midwife caring for 200 women per year could encounter 12 experiences that could result in PTSD in that timeframe (6%), and 60 that could cause sub-clinical symptomology (33%). Jersey has a small birthrate (Government of Jersey [GoJ], 2024) and so, using the figures provided by Leinweber & Rowe (2010), an estimated 50 births per year in Jersey might cause PTSD and a further 277 could cause sub-clinical symptomology. Midwives in Jersey who routinely attend births work on a single ward that manages inpatient antenatal, intrapartum and postnatal care (GoJ, n.d.). Their time is not divided between labour and ante/postnatal care to any specific standard; thus, we cannot determine how many labouring women a midwife might care for in a year. A full-time midwife working 45 weeks (annual leave excluded) could work 135-225 shifts per year. By estimating a 50/50 split between inpatient and labour wards, this could mean caring for labouring women 67-112 times per year depending on shift pattern. This equates to 4-6 births that could cause PTSD, or 22-36 causing subclinical symptoms, so approximately 50-66% less often than in Leinweber & Rowe's study due to the low birth rate and care model. Being burntout lowers resilience and increases risk of traumatic events causing PTSD (Halperin *et al.*, 2024). The combined effects of burnout and PTSD may result in a need for treatment and/or a career change. Nightingale *et al.* (2018) found that 42% of midwives had sought GP care for stress and anxiety, and the Royal College of Midwives [RCM], (2021) reported 57% intended to leave midwifery within the next year. Poor wellbeing is also related to poor quality maternity services and worse birth outcomes (Filby, McConville, & Portela, 2016; Francis, 2013; Hall, *et al.*, 2016; Perazo *et al.*, 2016). With medical and social complexity of pregnancies increasing (Smith, Dixon, & Page, 2009) and maternal mortality rates rising (MBRRACE-UK, 2024) it is important to maintain the wellness of midwives and encourage retention.

Trauma is subjective and the definition has varied. Traditionally, trauma is any event that exceeds one's ability to cope (Freud, 1964) and this has been expanded to include witnessing events that have occurred to another person (APA, 2013). In midwifery, events including death of a patient, obstetric emergencies, and missing a diagnosis are amongst those reported to be traumatic (Cankaya, Aksoy, & Yilmaz, 2021; Kerkman, *et al.*, 2019). Research into the cumulative effect of smaller stressor events as predictive for PTSD is extremely limited and refers only to childhood bullying (Idsoe, Dyregov, & Idsoe, 2012; Mishna, 2012). In midwifery, causes of burnout including compassion fatigue, rising demands, bullying, concerns about delivering safe care, understaffing, and diminishing resources have all been documented (Kinman, Teoh, & Harriss, 2020). As burnout is a predictor for PTSD (Halperin *et al.*, 2024), it is possible that these smaller stressors could be considered PTSD risk factors. Although traumatic births can be unpredictable and therefore cannot be entirely prevented (Ghag, Winter, & Draycott, 2020; Paxton, *et al.*, 2005; Young & MacLennan, 2022), research has found that organisational variables including adequate staffing levels can moderate the effect of traumatic events (Cramer & Hunter, 2019). Therefore, hospitals that present with lower prevalences of burnout/PTSD might do so due to better organisational support and quality of work environment. If these hospitals can be

identified, research could be undertaken to assess what they have implemented and whether it could be replicated in hospitals with worse prevalences to mitigate them.

As a Jersey midwife my interest fell onto the prevalence of burnout/PTSD locally. The maternity service [MS] is in an uncommon position due to being on a small island. There is one MS with no other public or private midwifery alternative, though there are private obstetricians (GoJ, n.d.b). The MS is not part of a wider health organisation which sets it apart from similar islands (e.g. the Isle of Wight being part of the NHS (NHS Isle of Wight, 2021)). Although most births occur within the MS, patients needing specialist care are transferred off-island (GoJ, n.d.c). When this occurs, the patient is stabilised first, then transferred by the Air Ambulance service (GoJ, 2020). However, this does not prevent traumatic births occurring in Jersey as many emergencies, such as shoulder dystocia, are largely unpredictable and occur in low-risk pregnancies (Royal College of Obstetricians & Gynaecologists [RCOG], 2012). Jersey midwives must therefore always be prepared to manage traumatic obstetric events even when their service would not routinely handle them. Therefore, despite the service's relatively distinctive status compared to surrounding countries, traumatic births still occur. Thus, it is important to establish the prevalence of burnout/PTSD in this population of midwives and how it compares to other countries. A similar prevalence suggests the controllable variables are either not being controlled or do not make a significant difference. If prevalence is significantly different, Jersey's MS should consider investigating the reason(s) for this as monitoring employee wellbeing is an important aspect of sustaining and developing any health service (Daniels, *et al.*, 2022; Lorber & Dobnik, 2022; Ray-Sannerud, Leyshon, & Vallevik, 2015). It is therefore of value to the service to understand the local prevalences, to either investigate mitigations against a higher prevalence or to sustain a similar or lower prevalence. Although it is a smaller service than in many hospitals, the impact of burnout/PTSD is severe enough for both midwives and pregnant women that describing the local prevalences could provide important findings for service management to either consider implementing changes if it is high or support other services if it is low. This sentiment is echoed by professional bodies including the RCM (2018 & 2020) and the Nursing and Midwifery Council ([NMC] 2021 & 2023) as well as the House of Commons Health and Social Care Committee ([HCHSCC] 2021) who have all called for an improvement in staff mental health by investing in better support, staffing levels, and staff retention.

A literature review was undertaken to explore the existing evidence on burnout/PTSD, prevalence among midwives, and establish Jersey's prevalence if it has already been measured.

Chapter 2: Literature review

This section will critically appraise literature on burnout/PTSD and synthesise findings to formulate the research question. The strategy of the review is outlined followed by analysis.

2.1 Strategy

Anglia Ruskin University's online library was utilised for the literature search, providing a search of 189 databases (Appendix A). None were excluded to minimise risk of omitting key studies, though this led to an expectation of a high number of duplicates. Key search terms are listed in tables 1-2 below.

Table 1

Search terms for literature review

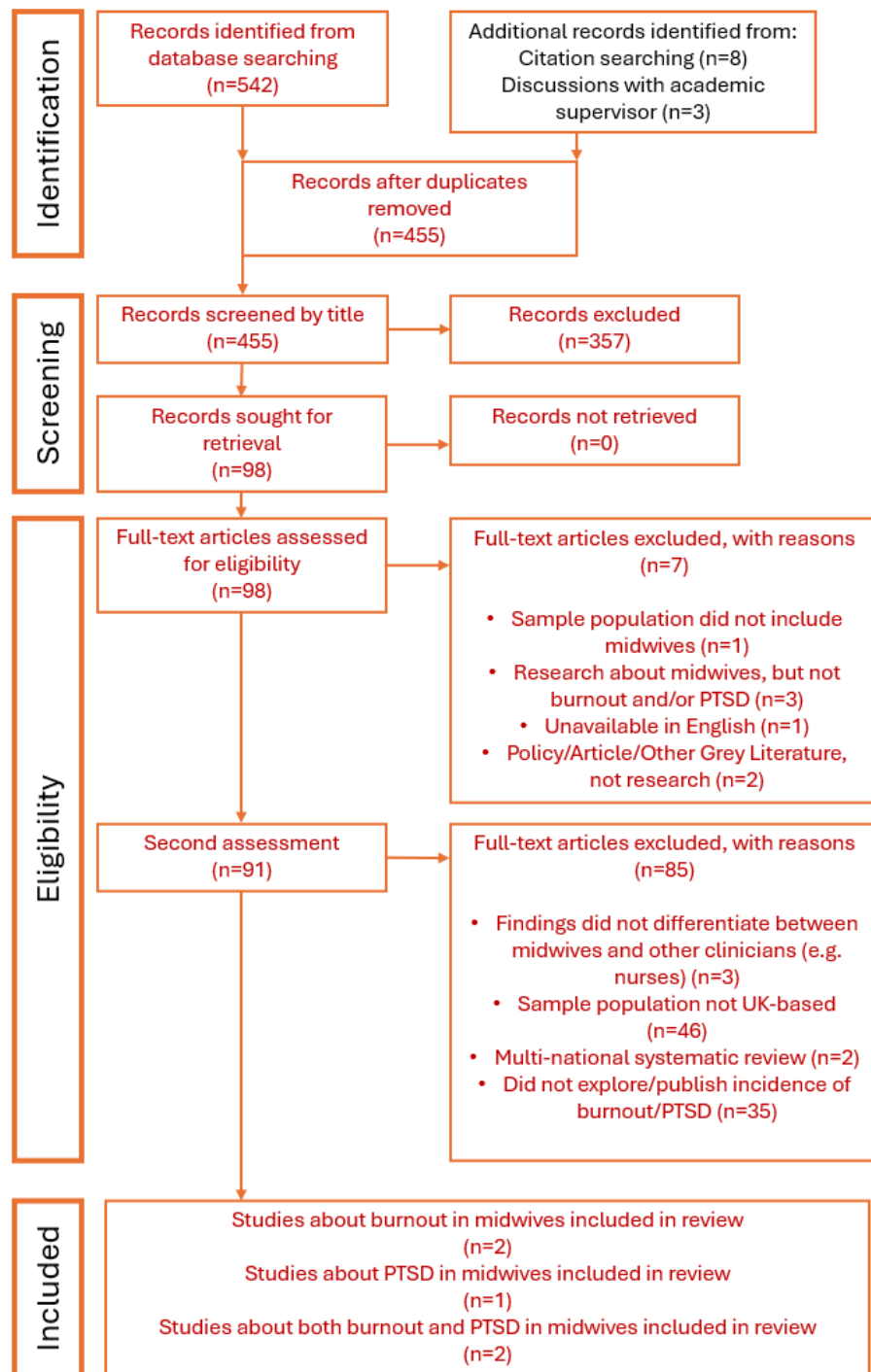
Primary Search Terms	Related Terms Also Searched
Post Traumatic Stress Disorder	PTSD, Post Traumatic Stress Syndrome, Post Traumatic Stress, Trauma, Traumatic (Experience)
Burnout	Burn Out, Stress, Compassion Fatigue
Midwife	Midwives, Midwifery, Certified Nurse Midwife, CNM, Labour Nurse, Healthcare, Healthcare Professional

Table 2*Literature Search Terms, Limits and Final Results*

Database/Library Searched	Search Terms	Limits	Initial Search Results (including duplicates within and across databases)	Included in review
ARU Library	Midwife Post Traumatic Stress Disorder Burnout And related terms as per table A2	▪ Published after 2000 ▪ Midwives as sample population ▪ Available in English (including professionally translated pieces initially in another language)	542	4
Studies Identified by Other Methods				
Citation Searching, Academic Supervision	N/A	English language only	11	1
Total			553	5

Studies published before 2000 were excluded to balance avoiding outdated evidence (Higgins, *et al.*, 2024) whilst not disregarding older studies that may provide relevant evidence (Dale & Logsdon, 2022; Shorten, 2013). Boolean Operators were used to reduce unrelated results (Bramer *et al.*, 2018). “Full text only” was not utilised as this could remove studies where full text could be sourced elsewhere. 553 records were

identified. Duplicates were excluded, and 455 were hand-screened by title which excluded a further 357. 98 records were available in full-text and assessed. 7 studies were rejected for not involving midwives, researching other phenomena, not available in English (as professional translation was not available risking incorrect analysis) or further duplicates. Four additional reasons for exclusion were applied to the search strategy (figure 3).

Figure 3*Literature Review Strategy Flow Diagram*

Note. This figure depicts the literature review in flow diagram format. The format has been adapted from the PRISMA diagram: Haddaway, Page, Pritchard & McGuinness. (2022). PRISMA2020: An R package and Shiny app for producing PRISMA 2020-compliant flow diagrams, with interactivity for optimised digital transparency and Open Synthesis. *Campbell Systematic Reviews*, 18(2), e1230. doi: 10.1002/cl2.1230

With no local research found, UK and ROI are the most closely related health systems to find research for. The lack of Jersey-specific knowledge is immediately identified as a research gap, as the local service have no existing evidence to support the relevance of burnout/PTSD to their midwives. Following the second assessment, 5 quantitative studies were deemed eligible for inclusion (table 3):

Table 3
Studies included in literature review with abbreviated reference to be used throughout

Author	Year of Publication	Sample Population Location	Topic	Abbreviation Used Throughout Review
Hunter, et al.	2019	UK	Burnout	Hunter <i>et al.</i>
Nightingale, et al.	2018	UK	PTSD	Nightingale <i>et al.</i>
Sheen, Spiby & Slade	2015	UK	Burnout and PTSD	Sheen <i>et al.</i>
Slade, et al.	2018	England	Burnout and PTSD	Slade <i>et al.</i>
Soria, Zervoulis & Bolou	2024	England	Burnout	Soria <i>et al.</i>

To better understand the existing evidence, the analysis will be presented in two parts:

1. Analysis of literature relating to burnout/PTSD prevalence in UK midwives
2. Incorporation of global data by presenting worldwide prevalence

2.2 Analysis

Critical reflection

The Caldwell, Henshaw & Taylor (2011) framework was chosen due to its design for reviews of health research and use across prior studies (Brooks, Bloomer, & Manias, 2018; Hewitt, *et al.*, 2024; Mumford & Nigam, 2024), university educational websites (Solent University, 2024) and research-focused articles (Davies, 2019; Gentles, 2015; Rowles, 2017). The framework was recognised during evaluation to support master's level study where the student had been out of academic study for some time. As such, it suited the needs of this literature review well. Framework questions were entered into a table to allow easy visualisation of the findings (table 4). This highlighted several areas where the studies showed collective strength and weaknesses.

Table 4**Caldwell Framework Answers**

Question	H	So	N	Sh	Sl
Part 1 - All Studies					
1 - Does the title reflect the content?	Y	Y	Y	Y	Y
2 - Are the authors credible?	Y	Y	Y	Y	Y
3 - Does the abstract summarise the key components?	Y	Y	Y	Y	Y
4 - Is the rationale for undertaking the research clearly outlined?	Y	Y	Y	Y	Y
5 - Is the literature review comprehensive and up-to-date?	Y	N	Y	Y	Y
6 - Is the aim of the research clearly stated?	Y	Y	Y	Y	N
7 - Are all ethical issues identified and addressed?	N	Y	N	N	N
8 - Is the methodology identified and justified? (answer here is inclusive of part 2 findings)	N	N	Y	N	N
Part 2 - Methodology for Quantitative Studies					
9 - Is the study design clearly identified, and is the rationale for choice of design evident?	Y	N	Y	N	Y
10 - Is there an experimental hypothesis clearly stated? Are the key variables clearly defined?	Y	Y	Y	N	N
11 - Is the population identified?	Y	N	Y	N	Y
12 - Is the sample adequately described and reflective of the population?	N	Y	Y	Y	N
13 - Is the method of data collection valid and reliable?	Y	N	N	Y	N
14 - Is the method of data analysis valid and reliable?	Y	Y	Y	Y	N
Part 3 - All Studies					
15 - Are the results presented in a way that is appropriate and clear?	N	Y	Y	N	N
16 - Is the discussion comprehensive?	Y	Y	Y	Y	N
17 - (Quantitative Only) Are the results generalisable?	N	N	N	Y	N
18 - Is the conclusion comprehensive?	Y	Y	Y	Y	N

Note. Study names shortened for easier viewing: H = Hunter, et al., 2019; So = Soria, Zervoulis & Boour, 2024; N =Nightingale, et al., 2018; Sh = Sheen, Spiby & Slade 2015; Sl = Slade, et al., 2018. Framework adapted from: Caldwell, K., Henshaw, L., & Taylor, G. (2011). Developing a framework for critiquing health research: an early evaluation. *Nurse Education Today*, 31, e1-e7.
doi:10.1016/j.nedt.2010.11.025

As all studies were published in well-established, peer-reviewed journals (table 6), it was unsurprising that many of the Caldwell criteria were met. Peer-review aims to apply rigorous scrutiny and ensure the dissemination of research is held to high standards that avoid biased, or unacceptable claims (Kelly, Sadeghieh, & Adeli, 2014). The openings were strong, with informative titles and abstracts that communicate the key message. Having concise, descriptive introductions assist the reader to determine if the research is of interest and relevance (Tullu, 2019) and appropriately attracted attention. All studies were conducted with midwife researchers, with several also experienced in publishing midwifery research. Other researchers included clinical psychologists and university-based researchers with prior published work. This lends credibility to the research as it indicates the researchers have the expertise and knowledge to ask appropriate questions and conduct their studies (Coughlan, Cronin, & Ryan, 2007). Notably, Soria *et al.*'s introduction omitted several references, reducing the credibility of the claims. This may have been hindered by the journal, as they enforced the lowest word count of all the studies included (table 5). However, as in-text references are reduced to single digits in their paper, it should have been possible to reference these claims.

Table 5

Word Counts According to Author Guides for Each Journal

Research Paper(s)	Journal/Reference to Word Count	Word Count for Published Research
Hunter, et al., 2019	Midwifery (Science Direct, 2025)	5000
Nightingale, et al., 2018	Journal of Advanced Nursing (Wiley, n.d.)	8000
Sheen, Spiiby & Slade, 2015	International Journal of Nursing Studies (Science Direct, 2025b)	7000
Slade, et al., 2018	European Journal of Psychotraumatology (Taylor & Francis, 2023)	6000
Soria, Zervoulis & Bolou, 2024	European Journal of Midwifery (2025)	4000

Each study utilised surveys for data collection, resulting in cross-sectional, self-selecting samples. This design is convenient to researchers by being fast to undertake and inexpensive compared to longitudinal

studies (Wang & Cheng, 2020) and can provide descriptive statistics that can inform future research recommendations. However, these designs are unable to infer causal relationships (Capili, 2021) and can only suggest associations (Pérez-Guerrero, *et al.*, 2024).

Criticisms

Four studies failed to discuss ethical issues pertaining to their research, with only Soria *et al.* providing sufficient detail. It is possible that these omissions were due to word count and were submitted to the journal in full. However, this denies the reader the opportunity to assess the quality of ethical considerations. Research misconduct is not unheard of (Paruzel-Czachura, Baran, & Spindel, 2021) and ethical accountability is one of the elements that separates research from non-scholarly sources (Kolstoe, 2023). The studies are not alone – Wu, *et al.*'s (2019) research found that reporting of ethical approval and informed consent across nursing research is poor and often lacks justification. Despite all studies sampling UK midwives and obtaining data on burnout/PTSD, reporting of ethical considerations was inconsistent. Concerningly, only Soria *et al.*'s research identified risk of participant distress due to triggering topics. Although this may have been implied by indicating a positive Research Ethics Committee (REC) review, inconsistency on which REC provided approval and lack of detail prevents the reader being certain. Slade *et al.*'s paper made no mention of ethical considerations, undermining its credibility by not assuring readers of participant's psychological protection and confidentiality (Drolet, *et al.*, 2023). Distress is common in trauma research (Form, Kelly, & Morgan, 2007) and mitigations must be clear to participants before participation (Jaffe, *et al.*, 2015). The effect of this is that trust in the findings is reduced due to questionable integrity (Miteu, 2024). Furthermore, the choice of Hunter *et al.*, Sheen *et al.*, and Slade *et al.* to part-publish only the quantitative data within their studies is also contentious. Referred to as 'salami slicing' (Elsevier, 2017), this is seen as an ethically questionable tactic to increase publication numbers by splitting mixed-method studies (Pfleegor, Katz, & Bowers, 2017). The qualitative aspect is either supplementary or published separately and, as in these studies, explanation for the decision is rarely provided (Cheek, 2021). This can lead to inflation of findings should readers assess them as independent studies (Sathyanarayana Rao & Andrade, 2016). Another weakness across the studies was minimal justification for methodological/method design choices. Although these were overall appropriate, considerable effort was required to mentally 'fill in the gaps' where authors had omitted details. Some researchers bemoan the limited depth possible in publications due to word count (Arvan, 2017; Williams, 2023) which may explain omissions.

Conceptual Framework

An objective approach was taken to outline prevalences of burnout/PTSD in prior literature. However, a socio-ecological model is apparent as the studies attempt to identify associations between individual, interpersonal, institutional and structural variables. It is not within the word count or timeframe of this

dissertation to incorporate qualitative data and cause-effect explorations; however, this model can help identify patterns that could inform future research.

Definitions, Variables, and Outcomes

Each paper clearly outlined the rationale for their research, and the literature reviews provided a wide breadth of relevant knowledge with both primary and secondary sources, key texts, and the most recent evidence at that time. This justifies their work by informing readers of the current knowledge and what gaps exist, along with introducing new readers to the topic. The reviews agreed broad definitions of burnout/PTSD and their impact on maternity services as identified in key texts, however at a granular level, these definitions varied. In burnout, two used the Copenhagen Burnout Inventory (CBI) (Kristensen *et al.*, 2005), and two Maslach's Burnout Inventory (MBI) (Maslach & Jackson, 1981). The studies justify their selection and provide evidence to their validity. Although, as each tool measures burnout in a different way, generalisation of the findings becomes difficult. CBI separates burnout into personal, work, and client domains to measure physical/psychological fatigue, exhaustion perceived to be related to work, and exhaustion perceived to be related to working with people, to create a burnout profile. This strengthens the studies that utilised it as it allows researchers to identify both burnout prevalence and which dimension of work is perceived as causing it. CBI was not designed to provide a single cutoff point where respondents become burntout but instead indicates severity of burnout via scoring ranges (Kristensen, 2019). Hunter *et al.* and Soria *et al.* published ranges that matched what was used in earlier literature (Bolotov *et al.*, 2021; Creedy *et al.*, 2017). This common scoring assists comparison as validity is improved by the consistent definition of what scores indicate, and the reliability of findings is improved by the consistency. MBI measures three different domains. Emotional exhaustion (being emotionally overstretched/fatigued by work), depersonalisation (cynicism/an uncaring response towards patients), and personal accomplishment (a lack of productivity/morale in work). Sheen *et al.* and Slade *et al.* reported using the original version of the tool (MBI-HSS), designed for workers in human services including medical and non-medical personnel (Maslach & Jackson, 1981). Both reports having changed the term 'Recipients' to 'Women in My Care' to improve clarity of the questions for the midwives. An adapted form of the MBI-HSS that alters terminology to better suit healthcare staff was published after Sheen *et al.*'s research and before Slade *et al.*'s (Mind Garden, 2025). Three researchers in Slade *et al.*'s study were also in Sheen *et al.*'s study including Slade themselves, which could explain why Slade *et al.* used the MBI-HSS. This choice was not justified but is a logical decision as it demonstrates consistency in data collection tools used to measure different samples. However, Slade *et al.* provided no explanation of what scores determined high, low, or moderate levels of burnout. As the MBI is copyrighted and inaccessible without payment, readers are unable to determine if cutoffs are provided. Sheen *et al.* also notes that scoring is relative, not fixed, and describes dividing scores into thirds for high, moderate, and low after data collection. Although this provides adaptability for what is considered "normal", it makes comparing the findings difficult

even between these studies, as scores indicating moderate-high burnout are unclear. What is a high score in Sheen *et al.* might be moderate or low in Slade *et al.* – neither provide the cutoffs used to be sure. The validity of MBI has been further questioned in a 2018 systematic review on physician burnout (Rotenstein, *et al.*, 2018), leading the researchers to recommend alternative tools including the CBI where defined scoring ranges result in a more homogenous study design that could improve the reliability of findings.

For PTSD, all three studies used the IES-R (Weiss & Marmar, 1997), which directs participants to focus on symptoms over the previous seven days. Although justification for this choice was provided in all three studies, the tool's authors advise it is not suitable for diagnostic screening, and therefore the use of it to screen for PTSD is questionable. The instrument considered gold-standard in the DSM-5 (CAPS-5) was not used in any studies, likely as it consists of a 60-minute, structured clinical interview (Weathers *et al.*, 2013) which is impractical when undertaking large sample size quantitative research. The PCL-5 also by Weathers *et al.* (2013b) is identified by the APA (2013) as the best alternative to provide provisional PTSD diagnosis. Justification was not provided for why the PCL-5, which was already publicly available, validated, and used in diagnostics in America and the UK (NICE, 2023), was not used. This is a gap in midwifery PTSD research that the planned research could begin to build on. The definition of what constitutes a traumatic experience was identified in the studies to be aligned with the DSM-IV (APA, 2000) with a focus on participant's trauma at work, which increases the validity of the findings by ensuring all participants experienced a traumatic event by the same definition. The identical definitions and tools used improves generalisability of the overall findings. Samples for burnout overall reflected expected demographics for UK midwives, being predominantly white (GOV.UK, 2023) and female (NMC, 2024/2024b). However, Soria *et al.*'s sample was more diverse, with 46% of participants being black or other ethnic minorities. This diverse population produced similar results to the other studies, suggesting that ethnicity may not be a factor in determining a midwife's risk of burnout, though this would require further research to establish. In the PTSD studies, gender, participant's age in the 20s-60s (GOV.UK, 2023), NHS band 5-6 (NHS, 2024), and years of experience ranging <1year to >40 (NMC, 2024/2024b) also reflected the UK workforce. Although ethnicity, education level, years in practice, marital status, and parity were not reported across all three studies, what was presented was also representative. This improves the reliability and external validity of their findings, as the risk of bias from over/under-representation of demographics is reduced and the findings are more likely to apply to the wider population of UK midwives. The variables measured across the studies varied, resulting in a long list of potential predictive and protective factors with little generalisability (figures 4 and 5), as no single factor was investigated by all burnout and/or PTSD studies. These findings do however present a foundation for further research that could determine if any demonstrate causal relationships.

Figure 4

Predictive and Preventative Factors, Outcomes and Conflicting Findings Identified in the Burnout Studies

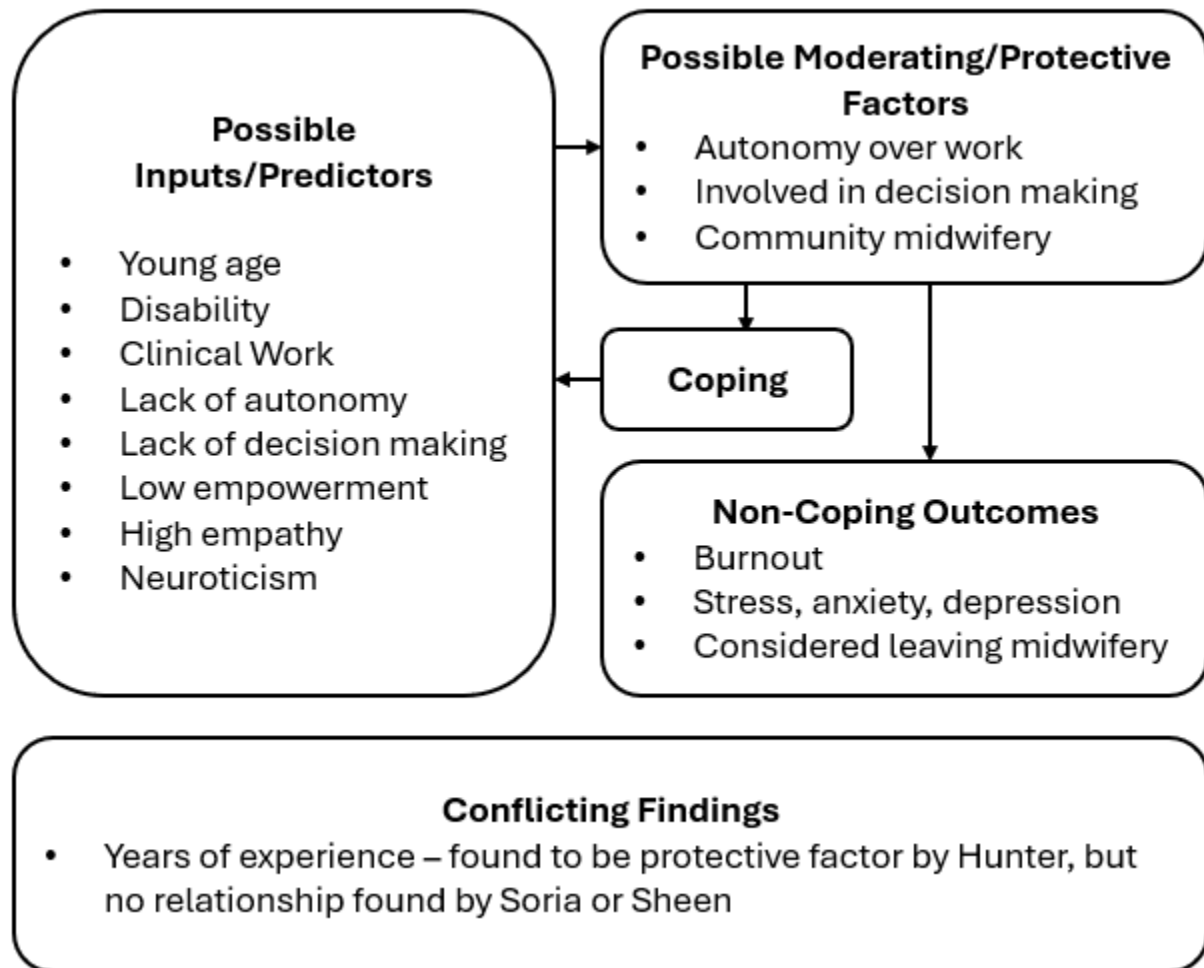
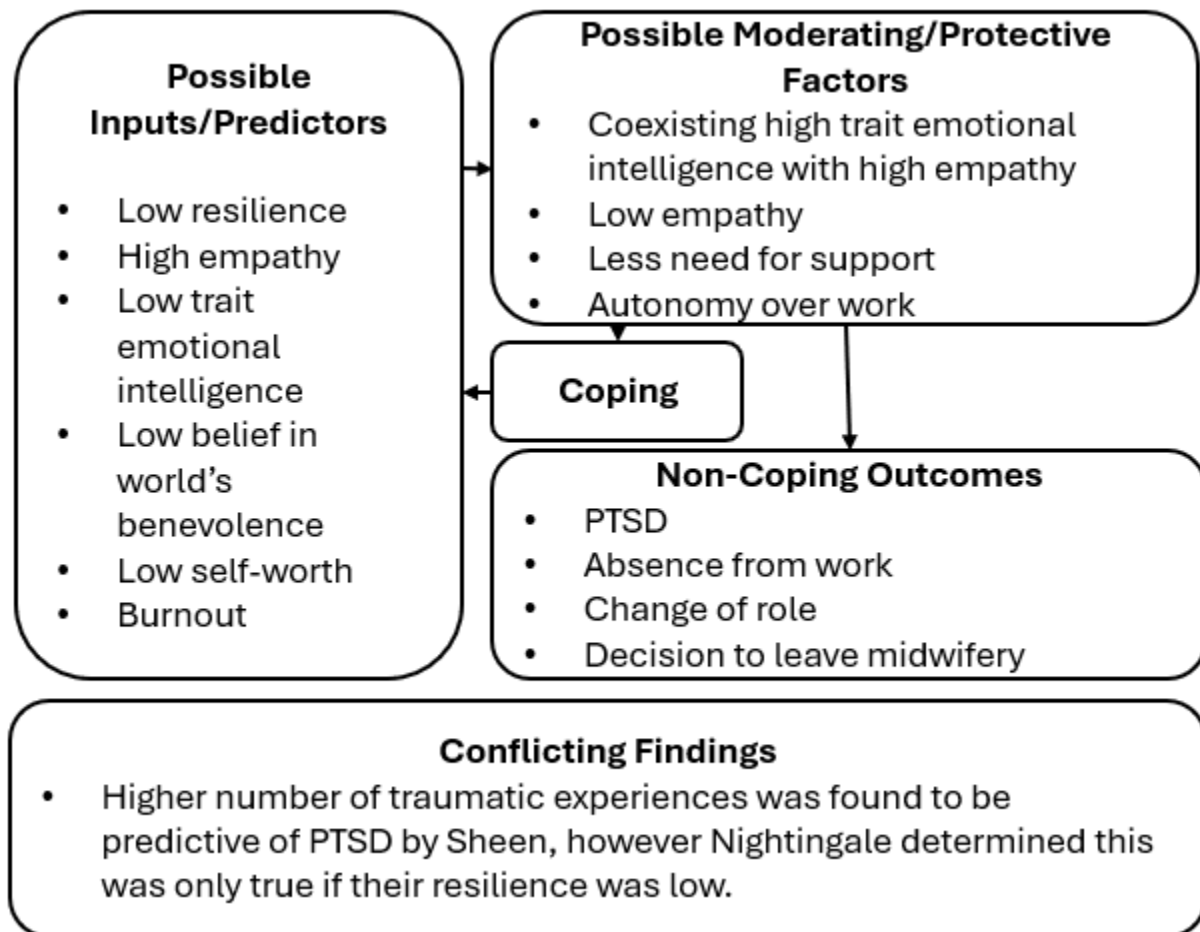


Figure 5

Predictive and Preventative Factors, Outcomes and Conflicting Findings Identified in the PTSD Studies



Findings

The four studies that measured prevalence of burnout identified a high level of burnout in the participating midwives, which suggests that UK midwives are at risk. The CBI studies presented a high prevalence of burnout in Personal and Work domains, and a considerably lower prevalence in Client domain. This suggests that midwives may not perceive burnout being caused by caring for women. Means across the studies suggest that 8 in 10 midwives could be experiencing burnout, with 7 in 10 perceiving it to be related to work, and only 2 in 10 perceiving it to be related to caring for women (figure 6).

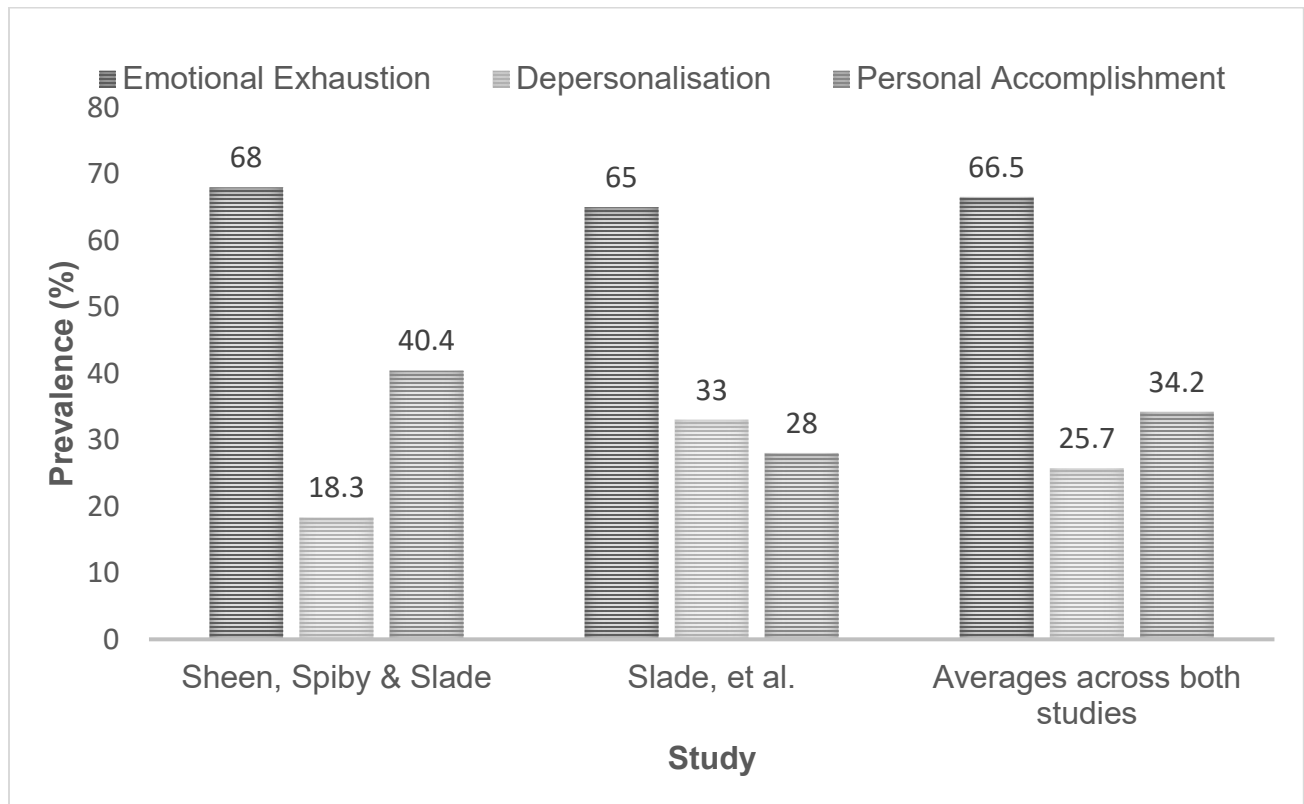
Figure 6*Prevalence of Burnout in Each CBI Domain*

Note. This figure depicts the prevalence of burnout found in each UK study that utilised the CBI. Mean averages of the two studies are also presented

Where CBI studies demonstrated similar findings, MBI studies only had emotional domain prevalence in common (figure 7). Means across the studies suggest that 6 in 10 midwives could be experiencing emotional exhaustion, with 2 in 10 coping by withdrawing from patients, and 3 in 10 perceiving they are less productive and achieve less.

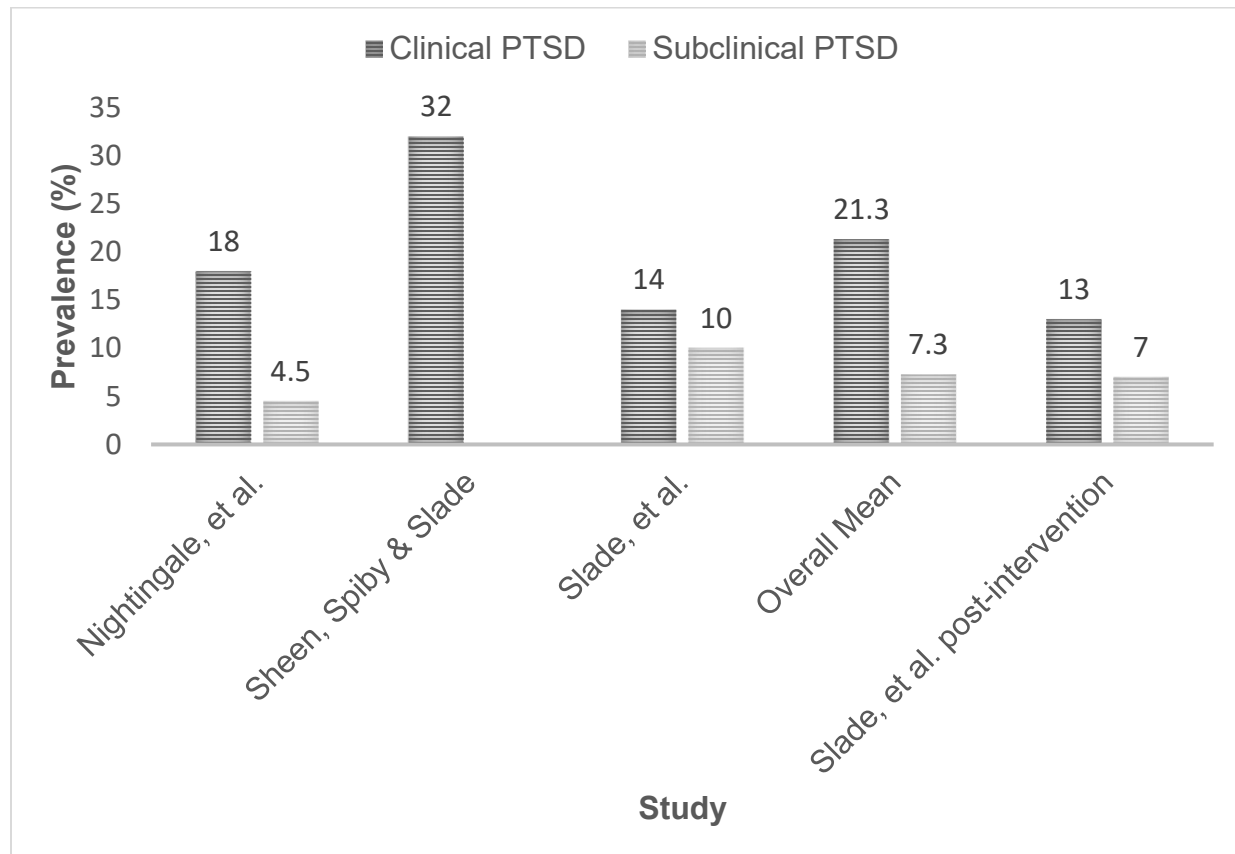
Figure 7

Prevalence of Burnout in Each MBI Domain



Note. This figure depicts the prevalence of burnout found in each UK study that utilised the MBI. Mean averages of the two studies are also presented

Incidence of PTSD in the UK is currently 4% for the general population (NICE, 2023b; PTSD UK, 2024). Three studies published a prevalence of PTSD in UK midwives: Nightingale *et al.*, Sheen *et al.*, and Slade *et al.* (figure 8). Due to the design of their research including an intervention, Slade *et al.* presented two prevalences (pre- and post-intervention) which showed improvement but maintained prevalences above the public average.

Figure 8*Prevalence of PTSD and Sub-Clinical PTSD*

Note. This figure depicts the prevalence of PTSD and sub-clinical PTSD found in each UK study. Mean averages of the studies are also presented, as well as the post-intervention prevalences from Slade et al.

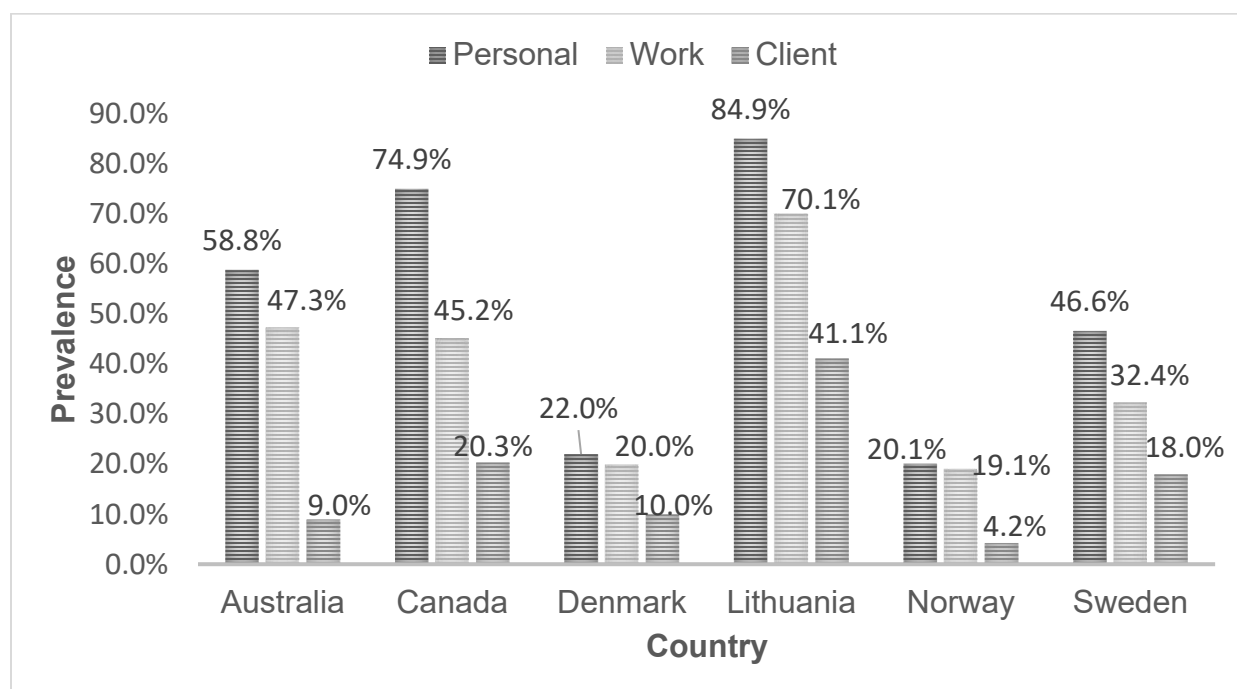
All prevalences surpassed the public incidence of PTSD at least 3-fold, with the mean indicating 2 in 10 UK midwives could be experiencing clinical PTSD, and <1 in 10 experiencing subclinical symptoms. Whilst not at diagnostic level, these midwives are important as their suffering does not become invalid because it lacks a label. Although the UK studies use different designs, the descriptions of burnout/PTSD are comparable. Regardless of year published, all agree that the midwifery workforce is at risk and identify a need to understand this better. Although the studies only provide 'snapshots' due to being cross-sectional, the consistency of higher prevalences over the last decade suggest an ongoing problem.

Global Picture

Prevalences from the global studies (Appendix B) were collated for comparative purposes, being mindful that vast differences in study design and cultural approaches to midwifery could significantly influence findings. For countries where more than one study was available, mean prevalence is shown. Studies that utilised the CBI reflected the UK, with burnout most prevalent in the personal domain, and least in the Client domain (figure 9). Considering the differences in demographics of participants and the culture of midwifery care, it is interesting that this pattern persists regardless of where and when the study is undertaken, and with numerous different variables. Further research is required to understand possible causes of this trend.

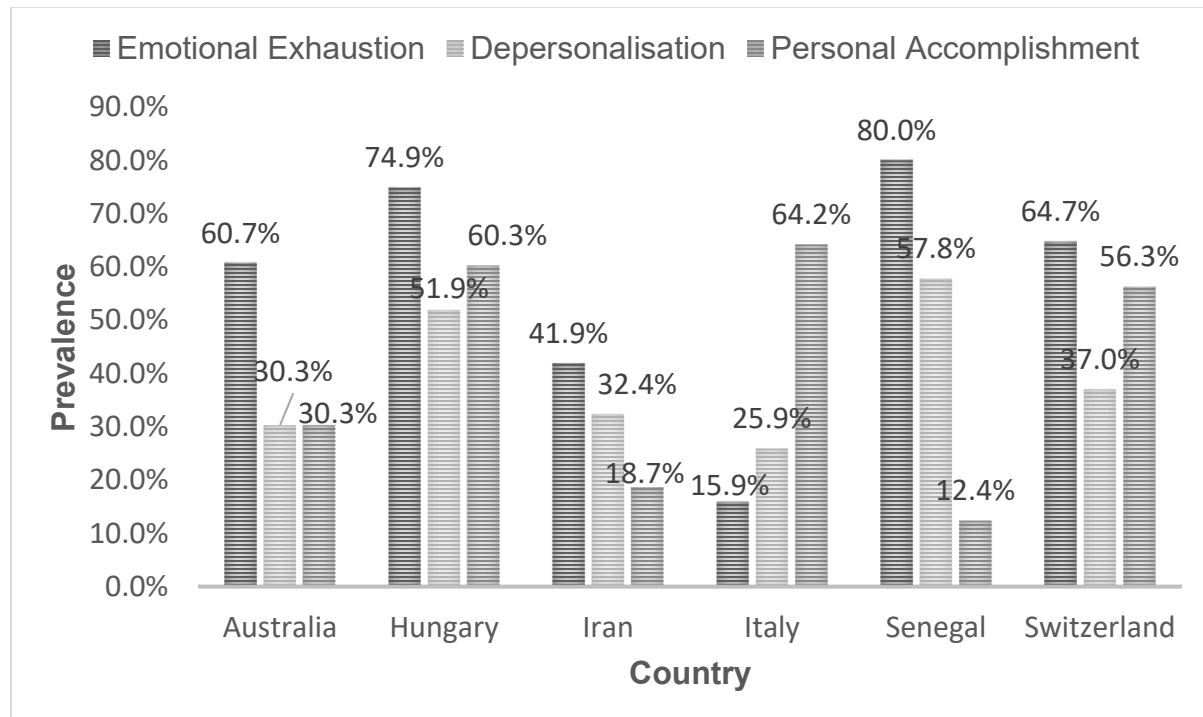
Figure 9

Prevalence of Burnout in Each CBI Domain (Global)



Note. This figure depicts the mean prevalence of burnout found in each country that utilised the CBI for research.

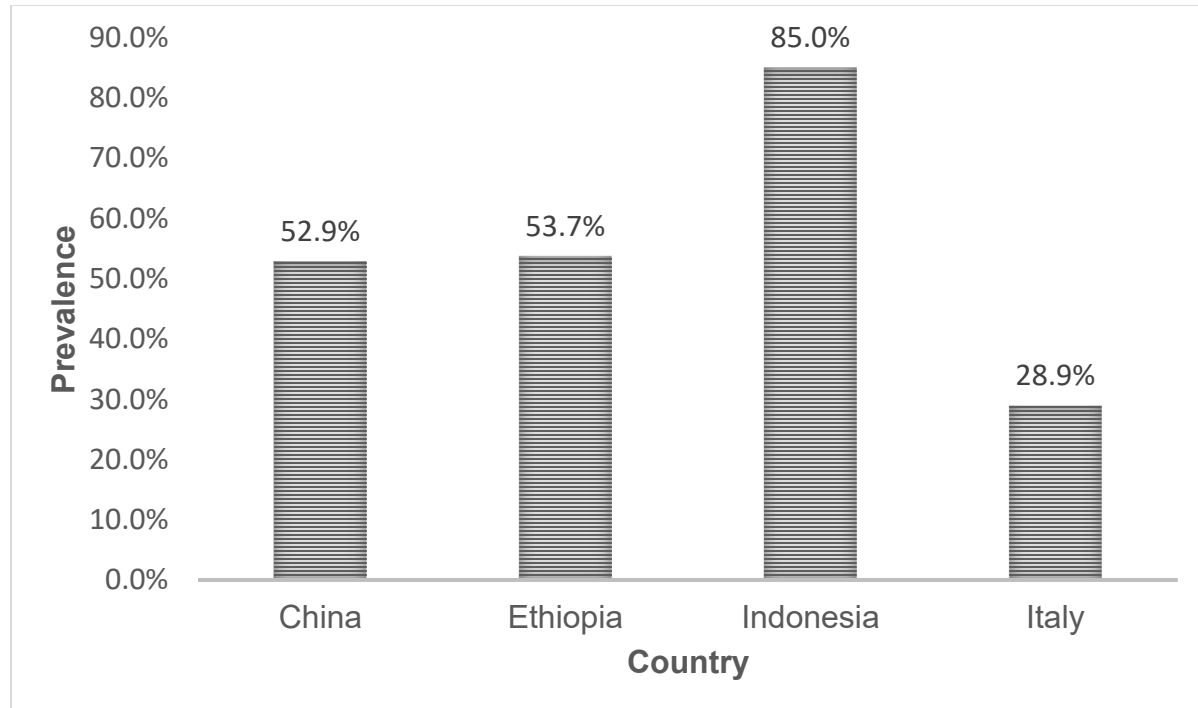
Studies that provided MBI prevalences showed a greater variation (figure 10).

Figure 10*Prevalence of Burnout in Each MBI Domain (Global)*

Note. This figure depicts the mean prevalence of burnout found in each country that utilised the MBI for research.

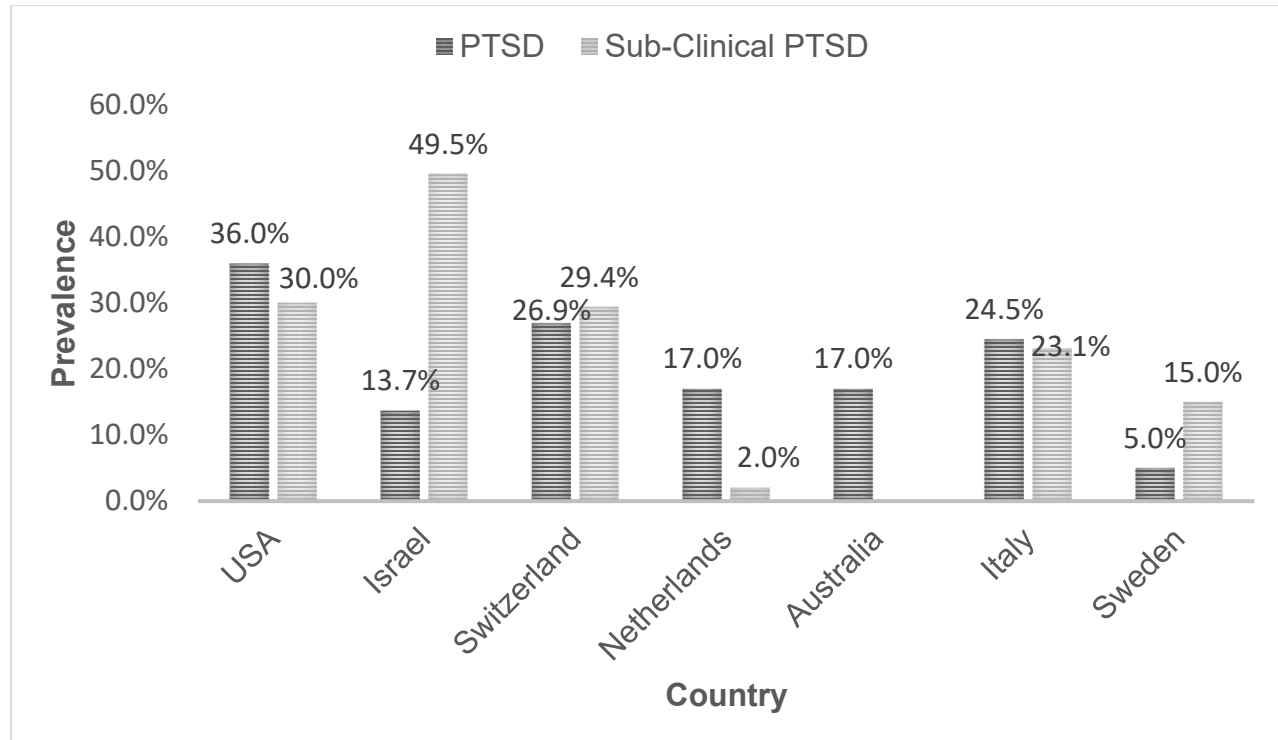
Criticism has been levied against MBI for not measuring burnout in a meaningful way, despite being its main intent (Bianchi, Swinger, & Schonfeld, 2024; Brady, *et al.*, 2020; Schaufeli & Taris, 2005; West, *et al.*, 2012). This brief review supports the criticism by identifying the uncertain cutoffs, definitions, and findings compared to the CBI. It is difficult to produce even conservative findings from the literature where MBI was used due to these variations, however one globally common finding is emotional exhaustion being the most prevalent burnout domain. Regardless of the criticism, the findings support the theory that midwives are at risk of burnout due to their role.

Some studies did not use either tool, instead providing a single prevalence with no further context (figure 11). Though these studies should not be discounted, the MBI/CBI studies suggest a single prevalence could be inaccurately representing burnout depending on whether it is inclusive of questions related to caring for women. Though the context of burnout in these studies is elusive, and caution must be used when generalising findings, the data does support the notion that midwives are burntout worldwide.

Figure 11*Prevalence of Burnout in Each MBI Domain (Global)*

Note. This figure depicts the prevalence of burnout found in each country that utilised tools other than the CBI/MBI.

PTSD prevalence worldwide (figure 12) also presents midwives as being at risk. Interpretation must be cautious, as different variables can again influence results. The UK incidence of PTSD in the general population cannot be applied globally, as it may differ. For example, Israel has long conflicted with Palestine and Lebanon (Encyclopedia Britannica, 2025), and with PTSD having first been identified as an outcome of war (Vance & Howell, 2020) it would be understandable for the Israeli population to have a different incidence.

Figure 12*Prevalence of PTSD and Sub-Clinical PTSD (Global)*

Note. This figure depicts the prevalence of PTSD and sub-clinical PTSD found in each country.

Conclusion

The findings of the literature review suggest that regardless of how burnout/ PTSD is measured, prevalence in midwives is often high. For burnout, this is further supported by the PUMA study (Borritz *et al.*, 2006) which found midwives scored highest for burnout out of 15 different 'people work' professions. Though none of the studies could identify causal relationships, the evidence provides a substantial foundation for further research to develop from. Before conducting longitudinal research to determine causal relationships, or qualitative exploration of burnout/PTSD, it is essential to establish the prevalence of the phenomena in Jersey midwives. This foundation is a beneficial addition to the literature as it can either add to the strength of findings (that midwives usually score highly for burnout/PTSD) or challenge them. With this novel contribution being the first of its kind in Jersey, it serves to not only fill an identified gap in the knowledge but can also provide meaningful findings. If Jersey's findings challenge the identified trends, it would be of interest for further exploration into the reasons why, in case such factors could be implemented to reduce prevalence worldwide. Should the findings follow the identified trends, it strengthens the evidence base that suggests midwifery work itself is an inherent risk factor for burnout/PTSD regardless of where midwives work.

Chapter 3: Research Design

This chapter will present a critical justification for the research's approach, design, and analysis. An objectivist and positivist underpinning provided the foundation for a quantitative descriptive piece, with modernist perspective.

Following the literature review, an early null-hypothesis was generated: the prevalence of burnout/PTSD in midwives does not vary between Jersey and other countries. This was further developed with guidance by a house-building analogy (figure 13) breaking the design into steps. This framework was chosen to safeguard against user-error that can rise from inexperience.

Figure 13

Research Design Process

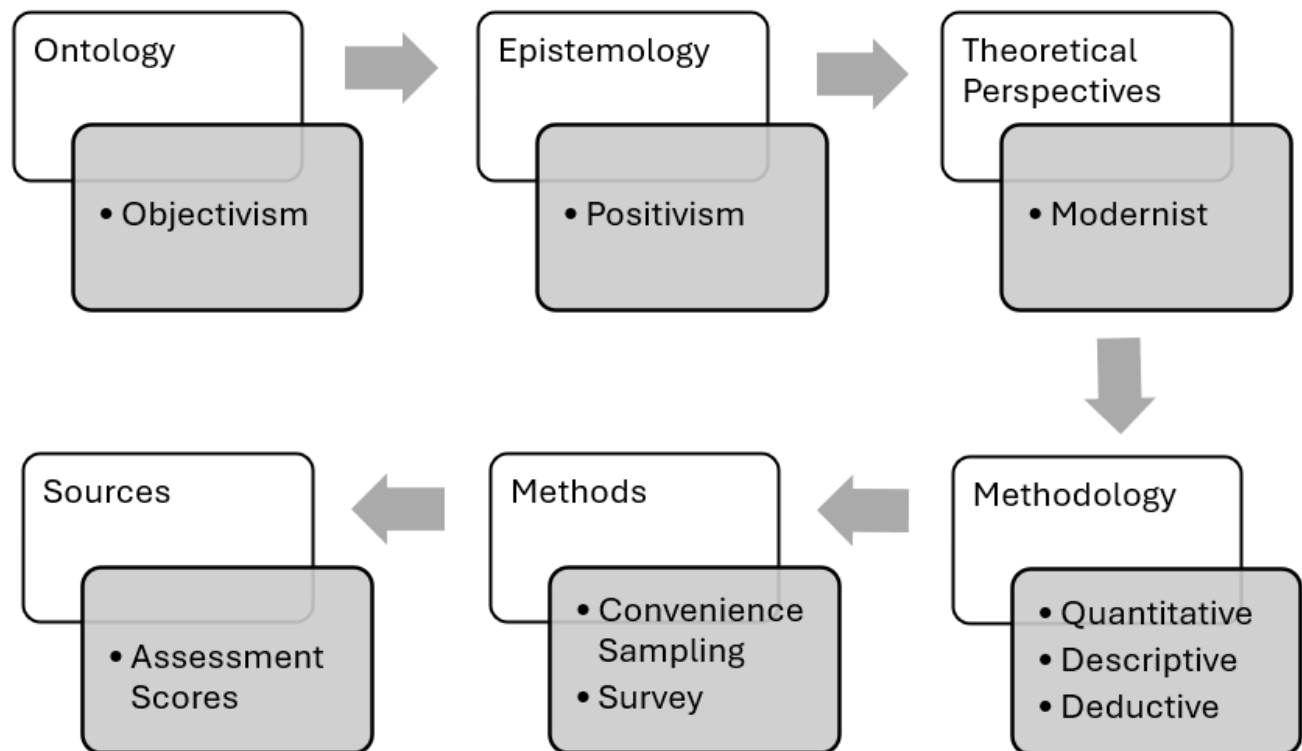
Step 1	The initial thought to build a house
•The initial idea to explore prevalence of burnout and PTSD in Jersey midwives is thought of.	
Step 2	Choosing what type of house to build
•The researcher's underpinning theoretical beliefs help to establish what type of research will establish the desired findings.	
Step 3	Drafting the blueprint and organising materials
•Designing the research including methodology, data collection methods, and sources of data.	
Step 4	Building works
•The research begins. Data collection and analysis takes place.	
Step 5	The house is built
•The research produces it's findings.	
Step 6	Moving in and adding a conservatory
•Discussion of the findings takes place. The findings may prompt for further research in the topic area.	

Note. This figure depicts the steps taken to develop the research design. Adapted from: Grant, C. & Osanloo, A. (2014). Understanding, Selecting, and Integrating a Theoretical Framework in Dissertation Research: Creating the Blueprint for Your "House". *Administrative Issues Journal: Connecting Education, Practice, and Research*, 4(2), 12-26

3.1 Theoretical Basis and Methodology

Figure 14

Philosophical and Theoretical Flowchart



Note. This figure depicts the philosophical and theoretical perspectives that guided the research

Philosophical perspectives are the foundation of methodology, though they can be overlooked (Sale, Lohfeld, & Brazil, 2002). These foundations assist researchers to evaluate their understanding of the world and the relationships between variables (Guba & Lincoln, 1994), which guides methodology decisions. As the broadest concept, ontologies determine how researchers view their chosen topic as influenced by their occupation, teachers, and prior experience (Creswell & Creswell, 2018) and questions if they believe reality to be objective, or a subjective construct. Epistemology builds on this by exploring the sources of knowledge available to define the scope of their research (Khatri, 2020). The epistemological and ontological bases for this research are objectivism and positivism. The presumption with this approach is that researchers find what objectively exists and would all find the same conclusions from the same data (Holden & Lynch, 2004). This approach is suited for this research because it reduces the complex topics of burnout/ PTSD into discrete data (scores) that can be measured and result in the same conclusions regardless of who interprets it. It follows the objectivist method of repeating controlled observations (Hiller, 2016), allowing careful comparison with other

studies to either strengthen the theory of midwives being at higher risk of the phenomena or lend support to rejecting it (Creswell & Creswell, 2018).

Positivism is an objectivist epistemology that focuses on empirical research to provide findings that can begin to identify fundamental laws of reality (Hiller, 2016). Since Fisher's (1935) work on experimental design, this has commonly been approached by testing a null hypothesis as a foundation. If the data collected supports the null hypothesis, it strengthens the suggested fundamental law that midwives are at an increased risk regardless of subjective variables such as demographics and maternity care structure. As the research aims to quantify the phenomena, a positivist approach is suited as it presents a representation of reality that has not been impacted by the researcher's identity, reasons for undertaking the research, or relationship to the phenomena being researched (Hiller, 2016). One critique of this approach is that burnout/PTSD are subjective experiences that are difficult to objectively represent. A realism approach could be adopted, as this supplements objective data with subjective impressions (Blaikie, 1993). However, this was rejected as it fails to focus on the burnout/PTSD scores and instead explores individual symptoms experienced by midwives. Whilst it is acknowledged that two midwives scoring for burnout/PTSD might have few subjective symptoms or experiences in common (National Academies of Sciences, Engineering, and Medicine, 2022), it is not within the scope of this research to explore their individual experiences. The aim of this research is to identify prevalences of burnout/PTSD via collecting quantitative data only, utilising validated tools that have been tested for content and construct validity and reliability. The hypothesis is therefore better tested with an objective philosophical approach which views the revelation of reliable knowledge as being gained from measurable observations (Warelow, 2013). A modernist perspective has been utilised due to its detached investigative approach that allows for universal application of quantitative data and comparison with related research findings (Meacham & Buendia, 1999). Syncretism was considered as a perspective that recognises overlaps between objective and subjective data, instead of viewing them as mutually exclusive (Johnson & Gray, 2010). However, this was rejected due to the decision to focus on objective data to authentically compare the findings to existing research and test the hypothesis. The theoretical underpinning and literature review were used to guide the research design to formulate aims, objectives, and the research questions.

3.2 Aims and Objectives

The overarching aim of the research is to investigate burnout/PTSD in Jersey midwives.

This aim can be broken down into several objectives, and the null hypothesis:

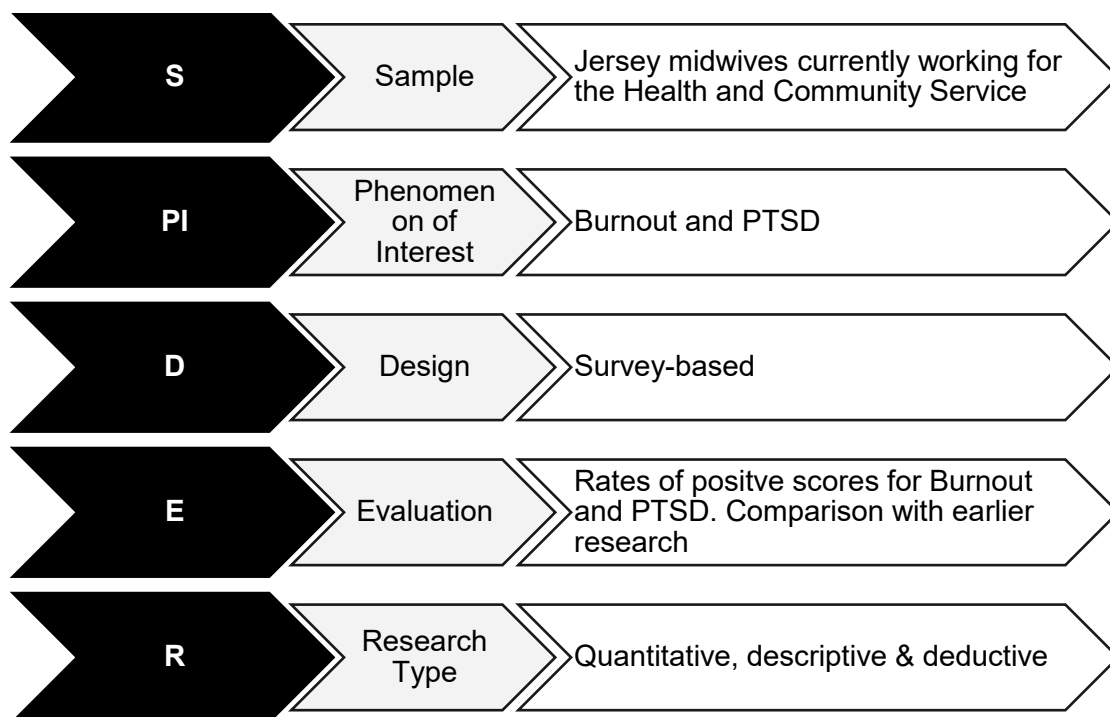
- Establish the prevalence of burnout in Jersey midwives
- Establish the prevalence of PTSD symptoms in Jersey midwives
- Compare the prevalences found with those documented in midwives globally

- Null hypothesis: the prevalence of burnout/PTSD in midwives do not vary between Jersey and other countries.

Tools created by experienced researchers such as the SPIDER tool (figure 15) were selected for their suitability for novice researchers. SPIDER was developed as an alternative to PICO (Richardson, Nishikawa, & Hayward, 1995) that provides flexibility for both qualitative and quantitative research (Holmen, Riiser, & Winger, 2020; Kumari, *et al.*, 2022).

Figure 15

SPIDER Tool for Question Formation



Note. This figure depicts the SPIDER tool used to formulate the research questions. Adapted from: Cooke, A., Smith, D., & Booth, A. (2012) Beyond PICO: the SPIDER tool for qualitative evidence synthesis. *Qualitative Health Research*, 22, 1435-1443

Three research questions were finalised that would support testing the null hypothesis:

1. What is the prevalence of burnout in Jersey midwives?
2. What is the prevalence of PTSD symptoms in Jersey midwives?
3. Are the prevalences like those found in earlier research from midwives globally?

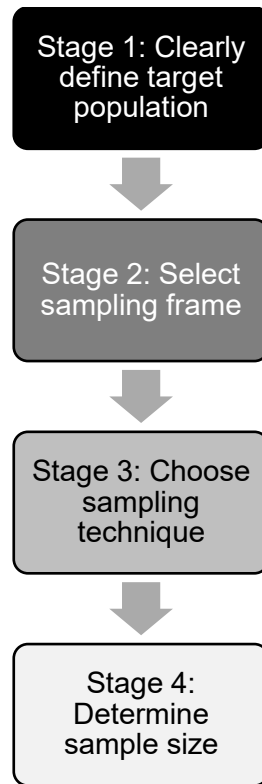
To answer these questions, several research designs were considered.

3.3 Research Method

Research is commonly categorised into one of three designs: experimental, quasi-experimental, or non-experimental (Thompson & Panacek, 2007) based on integration or lack of manipulation, randomisation and control. An experimental design demonstrates rigid application of these characteristics to minimise bias, with the double-blind randomised controlled trial being considered the gold standard of scientific rigour (Misra, 2012). However, this is not suitable for this research. Whilst a comparison between midwives and a control group of non-midwives (manipulation) is possible, randomisation is impossible as midwife occupation is a fixed participant characteristic. It is also impossible to control all influencing variables, e.g. external lifestyle, or experiencing non-work-related traumatic events. It is also important to be realistic about the time frame and resources available to researchers (Thompson & Panacek, 2007) which are limited in a master's level study. Non-experimental designs lack manipulation, are generally observational (Price, *et al.*, 2017) and lack a control group (Creswell & Creswell, 2018). This suits descriptive research, such as this piece, and is used to provide knowledge without demonstrating causal relationships (Lobmeier, 2010). However, it can lack scientific rigor, and researchers should opt for the most robust design possible to them (Thompson & Panacek, 2007). A non-experimental approach is inappropriate here due to the sample criterion and method of scoring being controlled, and comparison of the findings across global populations. The remaining approach is a quasi-experimental design which sits between experimental and nonexperimental research by including manipulation and control, but lacking randomisation (Creswell & Creswell, 2018). Though no control group is included in this research, comparison with global research may suggest Jersey as a variable for differences in prevalences. Analysing existing research as a descriptive baseline and then applying statistical analysis to the findings provides context (Cook & Campbell, 1979; Shadish, Cook, & Campbell, 2002) and supports the intersection of description and experimentation. Although the absence of random intervention is a weakness of quasi-experimental design (Harris *et al.*, 2006), the 'intervention' in this research (midwives being employed in Jersey) precedes the measurements being sought and is therefore impossible to randomise. Other variables may affect local scores, however the required data that could determine this is beyond the research's scope due to the resources and time required to undertake it. Earlier global literature (Darling *et al.*, 2023; Halperin *et al.*, 2024; Schröder *et al.*, 2017) has explored this and it could be of future interest to explore this in Jersey.

3.4 Sample

Sampling was guided by Taherdoost's (2016) process to assist optimum technique and validity (figure 16).

Figure 16*Sample Decision Process*

Note. This figure depicts the process of deciding sample size. Adapted from: Taherdoost, H. (2016). Sampling Methods in Research Methodology; How to Choose a Sampling Technique for Research. *International Journal of Academic Research in Management*, 5(2), 18-27. doi: 10.2139/ssrn.3205035

Stage 1

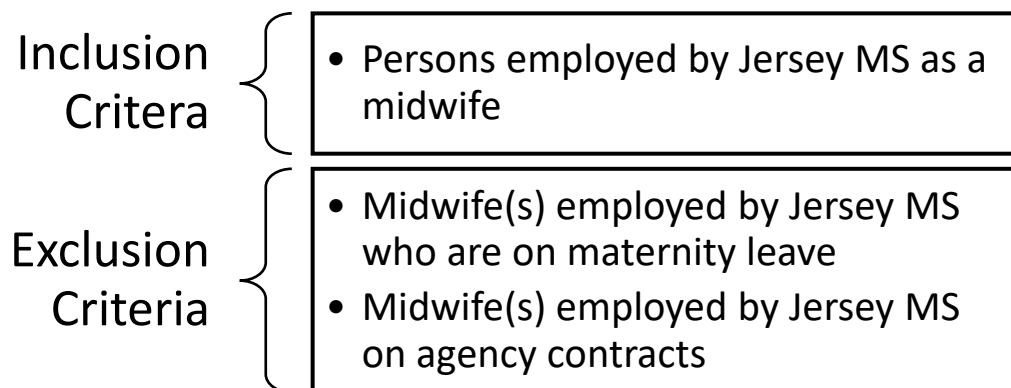
Approximately 70 midwives were employed in Jersey during the data collection period, with no independent/private midwives, allowing for a straightforward cross-sectional sample. Permission to invite participants was granted via the Lead Midwife. (Appendix C).

Stage 2

An existing group email address was used as the population database which forwards emails to Jersey midwives and provides a user-modifiable list of these recipients. This provided invitation to the entire population.

Stage 3

In small populations such as this research, a viable technique is to invite all to participate in a census (Israel, 2009). However, nonresponse is a common hinderance of census (Eggleston, 2024; Petroni, *et al.*, 2004; Simpson & Dorling, 1994). Whilst government census can legally enforce participation (GoJ, 2024b) it is not possible for this research, and a sufficient response rate is not guaranteed. Incentivising participation is not feasible in this unfunded research (Banerjee & Chaudhury, 2010). Therefore, the most appropriate sampling technique must invite the entire population but not aim for a 100% response rate. Purposive and convenience sampling are most appropriate for this research. Purposive sampling selects specific features (Maxwell, 2013) that meet predefined criteria and the purpose of the study (Alvi, 2016), which here would be participants working as midwives in Jersey. Midwives working elsewhere or non-midwives in Jersey would not provide appropriate findings to meet the objectives. Though this sample is limited by not providing globally generalisable findings (Acharya, *et al.*, 2013; Koerber & McMichael, 2008; Taherdoost, 2016), the objective is to *compare* with global midwives, not generalise. Therefore, the technique is suitable for this research. Convenience sampling is also present given a prior relationship with the maternity service existed. This relationship provided uncomplicated access to the population. Convenience samples can suffer from sampling bias and lack of representation (Alvi, 2016; Golzar, Noor, & Tajik, 2022), however this is mitigated in this research by inviting the entire population to participate.

Figure 17*Inclusion and Exclusion Criteria*

MS midwives on long-term leave cannot access their work emails at home and therefore could not access the survey during data collection. As they were not on duty there was also the risk that their scores may be influenced by not working in the MS at the time of their response. For these reasons, four midwives who were on maternity leave were excluded (figure 17). Midwives working on agency contracts within MS often work higher hours per week and may also have recently worked in other countries. Both factors could influence scores and therefore 3 agency midwives were excluded. No exclusions were made based on age, race, gender, or religion, as these factors do not prevent midwifery work. However, Jersey lacks male midwives resulting in an absence of male perspectives in this research. This aligns with broader statistics; the NMC's 2024 report indicates only 0.2% of midwives are male. Therefore, it was not considered a limitation of the research. After exclusions, 63 midwives remained. It was expected that some midwives would be on planned leave, therefore a 6-week response period (Appendix D) was designed to minimise impact. Long-term sick leave is difficult to control for however a period of short-term leave would fall within the timeframe. With the population 63 midwives, 55 participants are required for a 95% confidence level within $\pm 5\%$ of the measured value for burnout, and 49 for PTSD. A larger population is preferable, but limitations in Jersey's midwifery workforce prevented this. Aiming for a reduced sample size with an error margin of $\pm 10\%$ was more feasible, requiring 39 responses for burnout and 23 for PTSD.

3.5 Quality Assurance and Ethical issues

Master's research is limited by time and funding constraints that can threaten internal validity (Brutus, Aguinis, & Wassmer, 2013). However, it is still valuable with careful interpretation of findings (Hackshaw, 2008). As a non-funded study with a tight timeframe, this research can only describe a prevalence of

burnout/PTSD in local midwives. It cannot explore or control for all possible variables, threatening internal validity. However, the instrument chosen for burnout does allow for differentiation between work-related symptomology and non-work related (discussed further within data collection) to mitigate some of the described threat (Aguinis & Edwards, 2014). Other demographic controls were not applied, as due to the small sample population who are all known to the researcher and other midwives, this data could cause participants to be identified in the final report and feedback. However, some naturally occurring controls were taken advantage of as reducing confounding variables at the design stage is easier than during data analysis and improves validity of the research (Han, Karmur, & Kulkarni, 2020). All MS midwives are women of working age, English speaking, and educated to minimum diploma level. This reduces sex, age, language, and education as variables which have been shown to influence burnout (BBC, 2021; Marchand, Blank, & Beauregard, 2018; Purvanova & Muros, 2010; Xia, Wei, & Tang, 2024) and PTSD (Christiansen & Berke, 2020; Schnurr, 2024). Any correlation found between burnout/PTSD can only be considered associations due to the data being descriptive and cross-sectional (Blalock, 1964). To establish causal inference a larger randomised experiment with tighter variable control would be required (Aguinis & Edwards, 2014) which is beyond the scope of this research. However, the literature review does support external validity in that similar findings occurred globally over many years. This may strengthen the findings of this research and provide support to what is currently a small study. When considering quality and ethical implications of the research the Department of Health (DOH, 2005) domains were used as a framework to identify and mitigate where possible. The framework was chosen as it applies detailed instruction to ensure the four principles of medical ethics (Beauchamp & Childress, 1979) are met.

Science

Scientific merit critique was undertaken by University of Chester's (UoC) Research Ethics Sub-Committee and the local health service's ethics committee and was given favourable opinion (Appendix E). This provided reassurance that the research has been designed appropriately and has assessed for ethical, physical, and health and safety risks.

Information

Recommendations for patient information were taken from the DOH framework (2005), Helsinki Declaration (World Medical Association, 1964/2022), Belmont Report (National Commission for the Protection of Human Subjects of Biomedical and Behavioral Research, 1979) and other sources that offered solutions on ensuring autonomy, justice and beneficence when utilising online tools (Enyon, Fry, & Schroeder, 2011; Flicker, Haans, & Skinner, 2004; Gelinas, *et al.*, 2017; Keller & Lee, 2010; Kitchin, 2007; Townsend & Wallace, 2016). These studies refer to techniques and considerations to protect participants from harm and distress. A detailed Participant Information Sheet (PIS) was created to meet these requirements (Appendix F) which

covered research objectives, making an informed decision to participate, risks and benefits, how to withdraw or raise a concern, data protection and confidentiality, and contact details. Participants were advised their data would be stored in line with local and UK legislation (GoJ, 2018; Government of the United Kingdom, 2018) and the NHS Health Research Authority (2024) to reassure that their privacy is protected. Participants were also advised that their data is coded on collection to anonymise it, providing another layer of privacy during data analysis. The PIS also appealed to altruism by advising the findings could contribute to the understanding of burnout/PTSD and benefit midwives in the future. Promoting participation as an act that would benefit others is socially desirable and might improve response rates (Williams, *et al.*, 2008), particularly in midwives whose vocational choice is linked to high levels of personal altruism (Gebriné, *et al.*, 2019; Khakbazan & Ebadi, 2019; Williams, 2006). The research was advertised by email (Appendix G) and included the PIS to encourage informed decisions. Posters were designed to increase recruitment (Maghera, *et al.*, 2014), however, permission to place them was declined by the Director of Midwifery (DoM) who felt it was excessive advertisement. Verbal advertisement took place during visits to MS locations for unrelated engagements by discussing it with midwives who were curious. Communication was careful to avoid coercion or feeling unable to refuse (Resnik, 2016; Wilson, Draper, & Ives, 2008) by avoiding directly requesting participation and instead asking them to read the PIS and decide for themselves. Collecting responses on a tablet was rejected for the same coercion concerns. Finally, as discussed earlier, using the CBI (Kristensen *et al.*, 2005) allows for this research to be replicated elsewhere and critiqued by readers due to being freely available. This supports the DOH framework (2005) which specifies that free access to research information is the gold standard.

Health and Safety

Although no harmful equipment, substances, or organisms were used a risk assessment was undertaken (Appendix H) and is discussed in the ethics section.

Finance

Professional indemnity and public protection insurance was confirmed by UoC (Appendix E). No funding was required for this research and no financial incentives provided. These can increase participation (Abdelazeem, *et al.*, 2022) but are considered non-justifiable in research that might result in harm (Zutlevics, 2016). Though physical harm is implausible, emotional harm might occur (Jaffe, *et al.*, 2015; Jorm, Kelly, & Morgan, 2007; Labott, *et al.*, 2013; Paing, *et al.*, 2023). Financial incentives can also be seen as coercive and might undermine a person's informed decision to participate (Largent & Fernandez Lynch, 2017), or may reduce a person's intrinsic motivation to participate (Zutlevics, 2016). Incentives may also create biased enrolment (Macklin, 1989; Resnik, 2015) if those in financial stress participate solely for the incentive. As financial stress is linked to burnout/poor mental health (Fang, Tang, & Salmela-Aro, 2024; Guan, *et al.*, 2022), and these are both predictive for PTSD (Brewin, Andrews, & Valentine, 2000; DiGangi, *et al.*, 2013), it is

possible that an enrolment bias caused by financial incentive might skew the findings to be over-representative. Finally, as an unfunded study incentives could not be supported. A token £5 gift voucher becomes £315 if all midwives participated.

Ethics

Named consent was required prior to accessing the survey. Had participant data be inadvertently shared a risk of distress and/or embarrassment related to invasion of privacy was possible (Lowrance, 2012). It is important to respect participant's rights to privacy and confidentiality (Human Rights Act 1998); therefore, actions were taken to mitigate this risk. Upon extraction, all data was anonymised with a unique ID before analysis commenced to ensure confidentiality. A list of opt-in email addresses and IDs was kept on a separate password-protected spreadsheet on a laptop with a different login password. This allowed sharing of results (when requested) by matching the ID to email address. Opting-in required entering the email address twice to reduce the risk of errors and sending to an incorrect address. The survey was accessible by multiple devices on any internet network to allow participants to respond in an environment of their choice, whilst off-duty, and without being interrupted by work. Participants were able to withdraw without completing the survey, or after completion up to when analysis commenced. This was made clear in the PIS to ensure informed consent, as per the Helsinki Declaration (World Medical Association, 1964/2022). Discussing trauma can be distressing (Jorm, Kelly, & Morgan, 2007), therefore though participants were not conventionally vulnerable (e.g. children) there was still some vulnerability. Mitigations were put in place to reduce the risk of distress. The link would not show the survey without confirming consent to ensure participants were not presented with distressing questions before agreeing to participate, and withdrawal was possible throughout the survey. Evidence from prior research guided the decision on accessing results, as this has potential positive (Partridge *et al.*, 2005; Shalowitz & Miller, 2008) and negative impact. Concerns about health literacy (Long *et al.*, 2019) weren't relevant as all participants were registered midwives. Presenting scores at the survey's end could cause distress regardless of whether scores matched their perceived symptom severity. Balancing result provision with minimising distress (Purvis *et al.*, 2020) led to offering the opt-in, allowing access to results if desired accompanied by support services signposting.

3.6 Data Collection

Validated questionnaires were chosen for data collection. MBI was first explored due to 88% of studies published before 2015 utilising it (Hadžibajramović, Schaufeli, & De Witte, 2022). However, several criticisms were noted beyond those discussed in the literature review. Although purchasing MBI was considered, requiring monetary compensation for use does not provide equitable and fair access, something that challenged personal beliefs in Dewey's philosophy (Stallman, 2003) that knowledge should be freely available to benefit humankind. It also made it impossible to determine whether it was suitable before procuring it.

Finally, research has highlighted some respondents finding the wording of questions to be unacceptable to them (Schaufeli & Taris, 2005). This may be due to cultural differences but is impossible to explore without purchase. In view of this, the publicly available CBI (Appendix I) (Kristensen *et al.*, 2005) was chosen. It has achieved cross-national validity (Barton, *et al.*, 2022; Bolatov, *et al.*, 2021; Ogunsuji *et al.*, 2022; Piperac *et al.*, 2021) and was designed as an improvement on the MBI. As previously discussed, it provides clear categories of Personal, Work and Client burnout allowing for a better depth of discussion as non-work burnout is also measured. The term 'Client' was replaced with 'Patient' as a more healthcare-focused term for this research.

For PTSD, the PCL-5 (Weathers, *et al.*, 2013b; Appendix J) was chosen due to having several key benefits other than being nationally/internationally recommended as discussed earlier. As a self-reporting tool, respondents could answer in their own time, in private, and without a researcher's presence, reducing resources required. Short survey-length increases response rates (Sahlqvist *et al.*, 2011), and as previously discussed free access to scoring instruments provides equality to anyone who wishes to repeat or develop the research. Unlike some PTSD instruments (Brewin *et al.*, 2002; Davidson *et al.*, 1997; Weiss, 1997) the PCL-5 does not mandate respondents recall a single traumatic event, benefitting midwives whose symptoms may be a result of chronic burnout or multiple traumas. One criticism of the PCL-5 is that it offers three different scoring methods (table 6), which can make comparison across studies difficult if different methods are chosen.

Table 6
Scoring Methods for the PCL-5

Scoring Method	How It Is Used	Benefits	Problems
Total symptom severity	A single sum of scores for all 20 items. Cut off score to be chosen by user.	Provides a single score for easy analysis of data when multiple assessments made. Flexible to use on a variety of populations.	Does not dictate a set cut-off score for diagnosis. Research has chosen scores ranging between 31-48 (Georgescu, <i>et al.</i> , 2024) depending on use (e.g. screening versus diagnostics) and population making comparison of studies difficult. Respondent may not meet all DSM-5 (APA, 2013) and ICD-11 (WHO, 2025) diagnostic criteria, as score of 48 is possible by only scoring in 2 of 4 criteria.
Symptom Cluster Severity Scores	Clustering questions into groups and taking the sum of each group. Cluster B (items 1-5), cluster C (items 6-7), cluster D (items 8-14), and cluster E (items 15-20).	Provides users with indication of which DSM-5 criteria the respondent experiences most. Could be utilised in future research to explore how common each individual PTSD criteria are in midwives.	Focuses on individual PTSD criteria and their severity, rather than an overall picture. As this research aims to identify midwives with probable PTSD, the overall picture is required.
Symptom Endorsement	Treat each answer of 'Moderately', 'Quite a Bit', or 'Extremely' as an endorsed symptom, then use the <i>DSM-5</i> diagnostic rule which requires 1 B item, 1 C item, 2 D items, and 2 E items from the clusters.	Ensures all four DSM-5 (APA, 2013) and ICD-11 (WHO, 2025) diagnostic criteria are met to test positive.	More difficult for statistical analysis as reduces findings to a positive/negative instead of this and a set of numerical scores. Scores as low as 12 using total symptom severity could screen positive here, compared to the suggested cutoffs of 31-48.

Note. This figure depicts the PCL-5 scoring methods. Adapted from: U.S. Department of Veterans Affairs. (2025, March 25). *PTSD Checklist for DSM-5 (PCL-5)*, PTSD: National Center for PTSD, U.S. Department of Veterans Affairs. <https://www.ptsd.va.gov/professional/assessment/adult-sr/ptsd-checklist.asp> Retrieved 25th April 2025

Symptom endorsement was chosen to determine clinical PTSD in this research due to it matching the DSM-5 (APA, 2013) and ICD-11 (WHO, 2025) criteria for diagnosis. However, should any scores below those identified in research by Georgescu, *et al.* (2024) test positive, a decision will be made in data analysis regarding how to treat those findings. With no guidance on sub-clinical scores provided, decision was made to consider any score within the 31-48 cut-off that did not meet symptom endorsement as sub-clinical. The tools were combined into one survey using the Microsoft Forms platform (Appendix K) as it is colour-formattable, available on different devices, and provides audio, which have all been shown to increase responses (Manzo & Burke, 2012; Sammut, Griscti, & Norman, 2021; Yimeng *et al.*, 2016). It is also password protected for additional protection. Paper surveys were rejected for cost, time, and confidentiality concerns. Secure collection to avoid unauthorised access would be required and anonymity impacted as it is clear whose survey scores are being transcribed manually. With Forms, the data is extracted to Excel and anonymised before scores are seen. Excel provided easy analysis of data, expression in tabular/graphical form, and central tendency calculations to communicate the data, and rapid identification of missing values. Email reminders were sent to encourage participation (Smith *et al.*, 2019; Van Mol, 2017). Providing a detailed PIS within the recruitment email that contained contact details to ask questions facilitated informed decisions to participate.

3.7 Data reduction and analysis

A descriptive analysis strategy was designed (figure 18) that divided the process into a foundation of descriptive analysis, followed by a flexible choice of further inferential analysis options. Assessment and summary of the raw data from the sample was analysed with measures of frequency, central tendency, and dispersion calculated first (Kaur, Stoltzfus, & Yellapu, 2018; Mishra, *et al.*, 2019) to express the characteristics of the sample midwives (Ranganathan, 2021). This numerical data was converted into ordinal categorical data by grouping respondents by severity of burnout/PTSD symptoms, which provided description of phenomena prevalences (Thomas, 2004). This foundation informs any secondary analysis by ensuring the chosen test's assumptions accurately reflect the data (Mishra, *et al.*, 2019) and therefore was not determined before data collection. Assessment of outliers was considered as these can significantly alter averages and distribution of data, producing over- or under-estimated values (Kwak & Kim, 2017) and erroneously biased findings (Gress, Denvir, & Shapiro, 2018). Stem and leaf tables were planned to provide a simple overview and enable identification of potential outliers (Illowsky & Dean, 2013). Any identified would have their significance tested by the Grubbs test (1950) as this has been used in a variety of disciplines across several decades (Colosimo, Pan, & del Castillo, 2004; Fung, 1991; Geisser, 1987; Jain, 2010; Rosner, 1975) and using a well-established instrument such as Grubbs enables better comparison of data across studies due to evidence of the tool's external validity (Bastos, *et al.*, 2014). Histograms were chosen to visualise dispersion as a common analysis tool and communication aid (Bityukov, Maksimushkina, & Smirnova, 2016; Boels, *et al.*, 2019; Ioannidis, 2003; Jagadish, *et al.*, 2001; Kaplan, *et al.*, 2014). A bell-shaped histogram suggests normal distribution (Adhikari,

DeNero, & Wagner, 2022; Bakker & Hoffmann, 2005) where the mean can be expected to be close to the median (Illowsky & Dean, 2013). Central tendencies are most meaningful when calculated from normally distributed data (Thériault, *et al.*, 2024), and as such it is important to assess how the data was distributed. Decisions on managing outliers and/or skewed data would be determined if found. Following this, presentation of the data in both tabular and graphical form was planned to improve comprehension (Kronthaler, 2023; Lee, *et al.*, 2015). Possible inferential analysis considered included comparison of Jersey-UK prevalences, as well as global prevalences. Any findings would be preliminary explorations only, with subsequent research needed to provide additional evidence (Campbell, 2021). However, the following chapter will discuss how a low response rate impacted the further analysis.

Figure 18*Data Analysis Process*

Foundation for Data Analysis	
A	Collate Research Data • Export of surveys into Excel document and identify missing data • AutoSum formulas to calculate burnout and PTSD scores for each participant • Presentation of raw scores in tables • Determine severity of burnout for each participant by comparing scores to pre-defined ranges and labelling as appropriate • Complete Symptom Endorsement PTSD scoring on each response and label PTSD diagnostic status
B	Assessment of Outliers • Use Stem and Leaf Tables to assess participant scores for outliers • +/- Grubbs Test (1950) to determine significance of outliers if any found • Further assessment of outliers to be determined if any proven to be statistically significant
C	Collate Other Research Data • Collate all prevalences found in UK and Global research • Calculate mean prevalences for countries with >1 research study
D	Presentation of Descriptive Data • Excel formulas to calculate central tendencies (mean and median, exclude mode) and minimum/maximum scores. Histograms for dispersion of data • Graphical presentation of central tendencies and minimum/maximum • Table and narrative presentation of prevalences • Graphical presentations of research data alongside UK and Global data
Secondary Analysis	
D	Comparative Analysis Options These choices are dependent on the data obtained during the research and will be explored once data is known (e.g. sample size, distribution, earlier research findings). Tests that may be appropriate include: • Chi-Square / Z-Test / Fisher's exact test for Jersey-UK comparisons • Chi-Square / ANOVA / Kruskal-Wallis Test for global comparisons

Chapter 4: Findings Chapter

This research aims to describe prevalences of burnout/PTSD in Jersey midwives to compare with earlier global research. A response rate of 17.5% (n=11) was obtained, considerably lower than desired. In this chapter, the findings are presented in order of the research questions. Graphical presentations are included to improve the communication of the data (Knafllic, 2015). Interpretation of the findings will follow in the next chapter.

4.1 What is the prevalence of burnout in Jersey midwives?

One participant did not complete the CBI in full, omitting responses from questions relating to Patient Burnout. As they opted-out of receiving their score, they were not advised of this potential mistake. Their score for this dimension is therefore excluded (table 7).

Table 7

Respondent Scores for Burnout

	Personal Burnout Score	Work Burnout Score	Patient Burnout Score
Response 1	75	85.7	29.2
Response 2	66.7	85.7	45.8
Response 3	70.8	82.1	20.8
Response 4	50	60.7	Incomplete
Response 5	62.5	50	8.3
Response 6	95.8	92.9	91.7
Response 7	70.8	71.4	45.8
Response 8	95.8	100	4.2
Response 9	54.2	57.1	37.5
Response 10	37.5	35.7	8.3
Response 11	58.3	53.6	29.2

Ten responses scored within the moderate-severe burnout range for Personal and Work, with one respondent scoring mild. No participants scored within the normal/low threshold for either dimension. One participant scored the maximum possible score in Work burnout. In contrast, only one participant scored positively for moderate-severe Patient burnout, with 5 scoring mild, and 4 normal.

A stem and leaf table was created as planned. One criticism of this approach is that the sample size in this research may be considered too small for it. A brief literature search found several studies that reference this approach as being suitable for small sample sizes (Brath & Banissi, 2017; Cox, 2007; Dodge, 2008), however

none set a lower limit. Wikipedia's entry (2024) specifies a sample of 15-50, but this had no reference to support how this was determined or who by. The principal developer (Tukey, 1977) does not suggest a lower limit and offers examples outside of those in the research. With no obvious lower limit and considering that the findings of this research are underpowered to generalise, the chance of identifying an outlier that is unreliable poses no real risk to the findings. Therefore, stem and leaf are used as planned to identify outliers (table 8).

Table 8

Stem and Lead Table for Burnout Scores

Personal Stem	Leaf	Work Stem	Leaf	Patient Stem	Leaf
0		0		0	4.2 8.3 8.3
1		1		1	
2		2		2	0.8 9.2 9.2
3	7.5	3	5.7	3	7.5
4		4		4	5.8 5.8
5	0 4.2 8.3	5	0 3.6 7.1	5	
6	2.5 6.7	6	0.7	6	
7	0.8 0.8 5	7	1.4	7	
8		8	2.1 5.7 5.7	8	
9	5.8 5.8	9	2.9	9	1.7
10		10	0	10	

Three potential outliers were identified: one in each dimension and from three different respondents. The Grubbs test (1950) was used to assess their significance as planned in the previous chapter (table 9).

Table 9

Grubbs Test Results

Outlier Value / Domain	P Value	Significant (P<0.05)?
37.5 / Personal	P>0.3	No
35.7 / Work	P>0.3	No
91.7 / Patient	P = 0.045	Yes

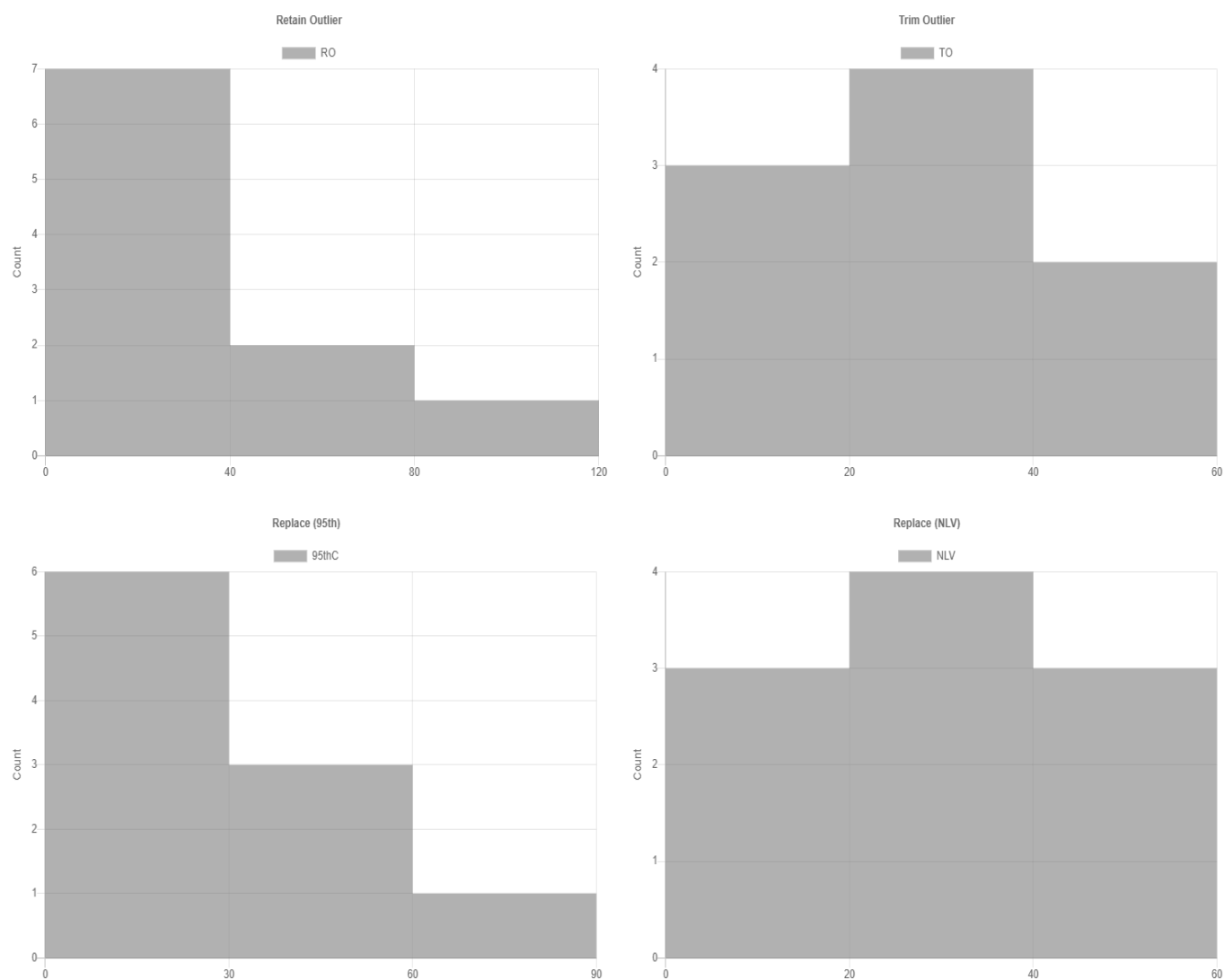
One outlier was deemed significant, and the raw data was re-examined to exclude a transcription error, miscalculation of scores, or human error by the participant choosing the wrong answer (Hodge & Austin, 2004). This confirmed no errors in data preparation. The participant's scores for each domain (table 10) were consistently high, suggesting that participant error is also unlikely.

Table 10*Participant Scores for Each Burnout Domain*

Personal Burnout Answer Scores	Work Burnout Answer Scores	Patient Burnout Answer Scores
100	100	75
100	100	100
100	100	100
75	100	100
100	100	75
100	75	100
	75	
Domain Score: 95.8	Domain Score: 92.9	Domain Score: 91.7

The procedure used to assess and treat the outlier is detailed below to ensure transparency and explain the rationale behind the decision. This is important as any future research that may attempt to replicate this piece must be aware of the possibility of outliers (Aguinis, Gottfredson, & Joo, 2013). Several options were available: retain and tolerate, identify it as important, reject it, or incorporate it with control measures (Onoz & Oguz, 2003). As already discussed, retaining outliers can cause over- or under-estimation and lead to biased conclusions. Exclusion would be unsuitable for this research as this is more appropriate for error outliers (Gibbert, *et al.*, 2021) and could influence an underestimation (Gress, Denvir, & Shapiro, 2018). Identifying the value as important means understanding it with further research (Mohrman & Lawler, 2012) which is not possible in this research due to resource and time constraints. Incorporation of the outlier with controlling measures was explored. A literature review by Aguinis, Gottfredson, & Joo (2013) presents techniques gathered from 46 methodological sources and 232 journal articles. Most related to erroneous, model fit, or prediction outliers, but this outlier is not a confirmed error, does not have a large residual value, and is an interesting outlier, all of which exclude it from those techniques. A later article by Leys *et al.* (2019) offers a fourth outlier definition of 'random', meaning interesting outliers that are very unlikely but still possible. The outlier fits this definition as it is an achievable value but unique in the dataset. The article also reasons that there are no mathematical instructions to guide control of random outliers and researchers must make an educated guess on an appropriate technique. The remaining techniques listed in the review overlapped in their base function: changing the outlier to a less extreme value. Winsorization (Clark, 1995) was identified as a favourable technique as it is effective in controlling impact in one-time surveys with few outliers, such as this research piece (Abuzaid & Alkronz, 2024; Kokic & Bell, 1994; Leys *et al.*, 2019; Liao & Li, 2017; Thériault, *et al.*, 2024). Winsorization replaces the outlier, usually with the 95th centile (71) (Certo, *et al.*, 2023; Chima & Etuk, 2017; Pedlow, *et al.*, 2005), or the next largest value (NLV, 45.8) (Dixon, 1960; Duan, 1998; Mair & Wilcox, 2020). Both Winsorization methods as well as trimming and retaining were applied to determine how they might affect central tendency. All outcomes are reported below to ensure transparency and to demonstrate the impact

different management techniques can make on the results (Leys, *et al.*, 2019). Histograms were generated as discussed in the previous chapter to visualise the data distribution with and without controlling the outlier (figure 19).

Figure 19*Outlier Control Histograms*

Note. This figure depicts histograms of the data distribution after controlling for the outlier. Clockwise from the top left: Retaining Outlier, Trimming Outlier, Winsorization (Next Largest Value), and Winsorization (95th centile).

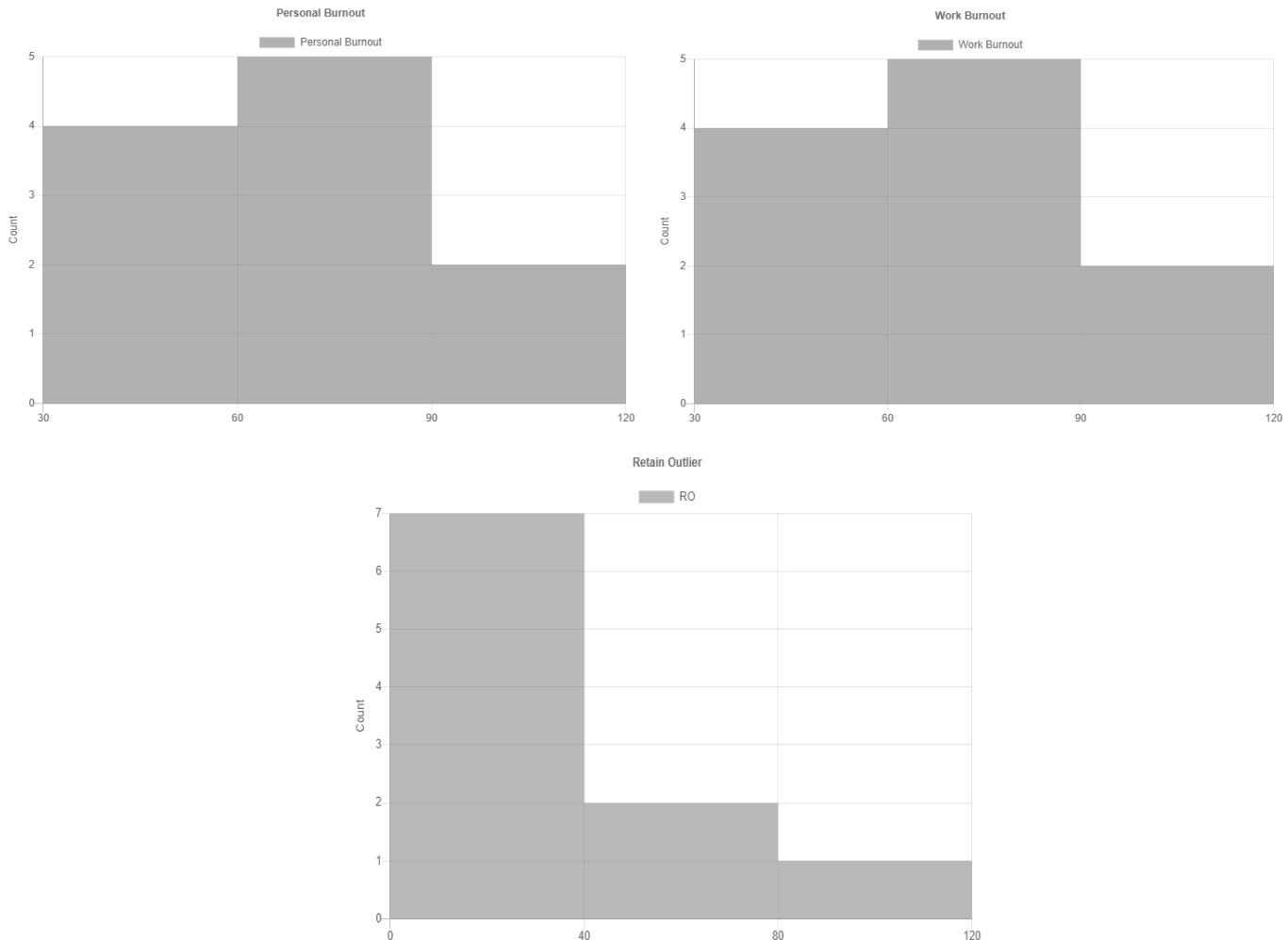
Both retention and Winsorization (95th centile) present a right skew, meaning the less-common higher scores could exert an upwards influence on the mean. As seen in table 11 below, both means are higher than the median. Trimming the outlier or Winsorization (NLV) both improve the symmetry of data distribution and could be utilised. However, all four techniques provide a central tendency resulting in the same finding: a mean/median score within “mild burnout” range.

Table 11

Mean, Median, and Mean-Median Difference when Outlier Controls are Applied

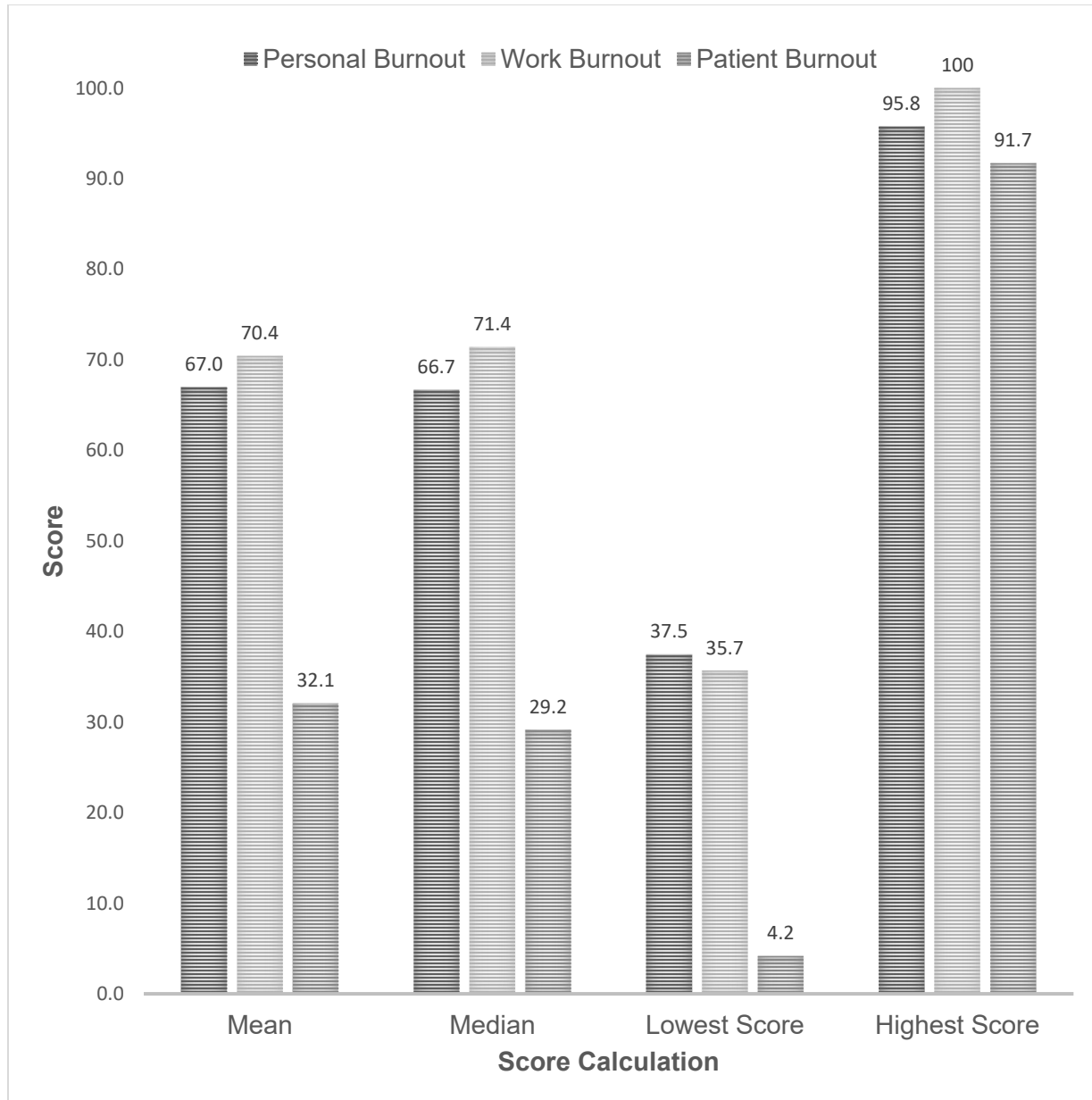
Technique	Mean	Median	Mean-Median Difference
1) Retain outlier as-is	32.1	29.2	-2.9
2) Trim outlier	25.5	29.2	+3.7
3) Winsorization 95 th centile	30	29.2	-0.8
4) Winsorization next largest value	27.5	29.2	+1.7

Presenting the findings with and without the controls ensures candidness (Kwak & Kim, 2017) and demonstrates that concluding the average Patient Burnout findings as ‘mild’ is not biased by an outlier, a common outlier concern (Gress, Denvir, & Shapiro, 2018). Histograms of Personal and Work values are presented below (figure 20) for comparison with a Patient histogram retaining the outlier. Both Personal and Work burnout datasets present identical histograms with slightly right-skewed abnormal distribution. This visual process emphasises the differences in distribution between Personal/Work burnout and Patient, communicating to readers how Patient domain scores are more skewed towards the lower end and influencing a lower mean.

Figure 20*Histograms of Each Burnout Domain*

Note. This figure depicts histograms of the data distribution for Personal and Work domains, along with the Patient Domain retaining the outlier. Clockwise from top left: Personal domain, Work domain, Patient domain.

Basic statistical analysis of mean, median, and lowest/highest scores are presented below (figure 21) to support a foundational understanding of the data's central tendencies and variability (Gupta, 2011). Each average is differently influenced by outliers, small sample size, and common/repeated values (McCluskey & Lalkhen, 2007), therefore presenting all averages reduces bias by promoting transparency (NIST/SEMATECH, 2012).

Figure 21*Central Tendencies, Lowest and Highest Burnout Scores*

Note. This figure depicts the mean, median, lowest, and highest scores obtained in the research for each burnout domain.

The mean and median scores for Personal and Work burnout are both within 'moderate' range, with Patient mean and median scoring within 'mild'. The lowest scores obtained were 'mild' for Personal and Work,

and 'normal/low' for Patient. The highest scores in Personal and Patient were 'high', with the highest Work score being 'severe'.

It is not possible to answer the research question "*what is the prevalence of burnout in Jersey midwives?*" due to the insufficient sample size, which will be discussed within the limitations chapter. However, it is possible to report the prevalence of moderate-severe burnout *in the midwives who participated*. The number of participants experiencing normal/low, mild, and moderate-severe levels of burnout are presented below (table 12) with the prevalence of clinically significant burnout in the Jersey midwives who participated (n=11) being 9 in 10 for Personal and Work, and 1 in 10 for Patient.

Table 12

Prevalences of Normal/Low, Mild, and Moderate-Severe Burnout in Each Domain

Burnout Domain and Number of Complete Responses	Number of participants with normal/low level of burnout (score ≤24)	Number of participants with mild level of burnout (score 25-49)	Number of participants with moderate to severe level of burnout (score ≥50)
Personal (11 responses)	0 (0%)	1 (9.1%)	10 (90.9%)
Work (11 responses)	0 (0%)	1 (9.1%)	10 (90.9%)
Patient (10 responses)	4 (40%)	5 (50%)	1 (10%)

4.2 What is the prevalence of PTSD symptoms in Jersey midwives?

All eleven responses for PTSD were completed in full (table 13).

Table 13

Participant Scores and Symptom Endorsement for PTSD

Response	Score	Symptom Endorsement Criteria Met?
Response 1	10	No
Response 2	25	No
Response 3	21	No
Response 4	2	No
Response 5	7	No
Response 6	69	Yes
Response 7	32	No
Response 8	56	Yes
Response 9	6	No
Response 10	0	No
Response 11	15	No

As with burnout scores, a stem and leaf was created to identify possible outliers and/or patterns (table 14). The maximum possible score on the PCL-5 is 80.

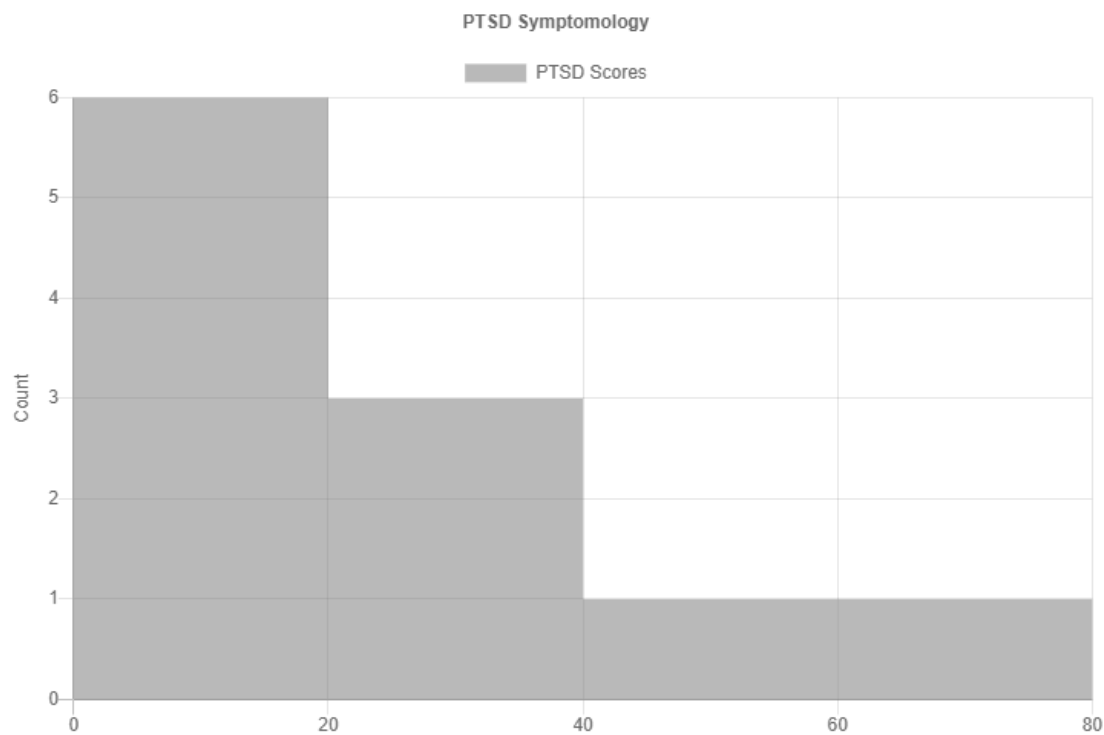
Table 14

Stem and Leaf Table for PTSD

PTSD Stem	PTSD Leaf
0	0 2 6 7
1	0 5
2	5 1
3	2
4	
5	6
6	9
7	
8	

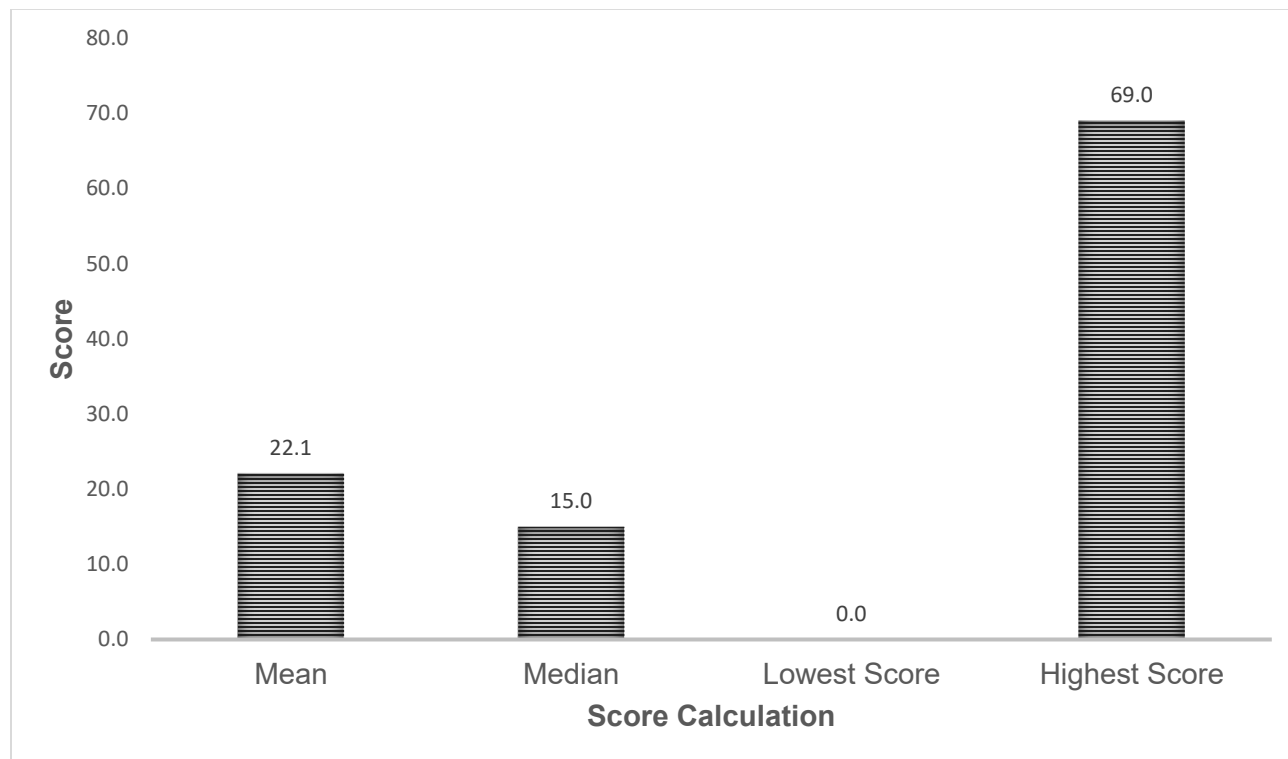
The scores did not present any obvious outliers but were clustered towards the lower end. The Grubbs test (1950) was performed to ensure the higher scores were not outliers, and this was confirmed with the highest value (69) resulting in a significance of $p=0.198$, greater than the $p=0.05$ required to be considered significant. Histogram presentation of the scores confirmed the right-sided skew of the data (figure 22).

Figure 22
Histograms of PTSD Scores



Note. This figure depicts histograms of the data distribution for PTSD scores.

The mean, median, and range are presented in the below chart (figure 23), however this excludes sub-clinical scores as only one participant scored in this range.

Figure 23*Central Tendencies, Lowest and Highest Burnout Scores*

Note. This figure depicts the mean, median, lowest, and highest scores obtained in the research for PTSD.

The mean and median scores both reside below the suggested total sum cutoffs for PTSD (a score of 31-48). Two participants were positive for all four PTSD criteria, and both scored above the upper cutoff minimising the risk of a false positive. One participant scored sub-clinically, with a score of 32 that did not meet all four diagnostic criteria. All three participants scoring clinically/sub-clinically for PTSD were found to also be experiencing moderate-severe burnout. It is not possible to answer the research question “*what is the prevalence of PTSD symptoms in Jersey midwives?*” due to the insufficient sample size. However, it is possible to report the prevalence of PTSD symptoms *in the midwives who participated*. The number of participants demonstrating non-significant PTSD symptoms, sub-clinical, and clinically significant are presented below (table 15).

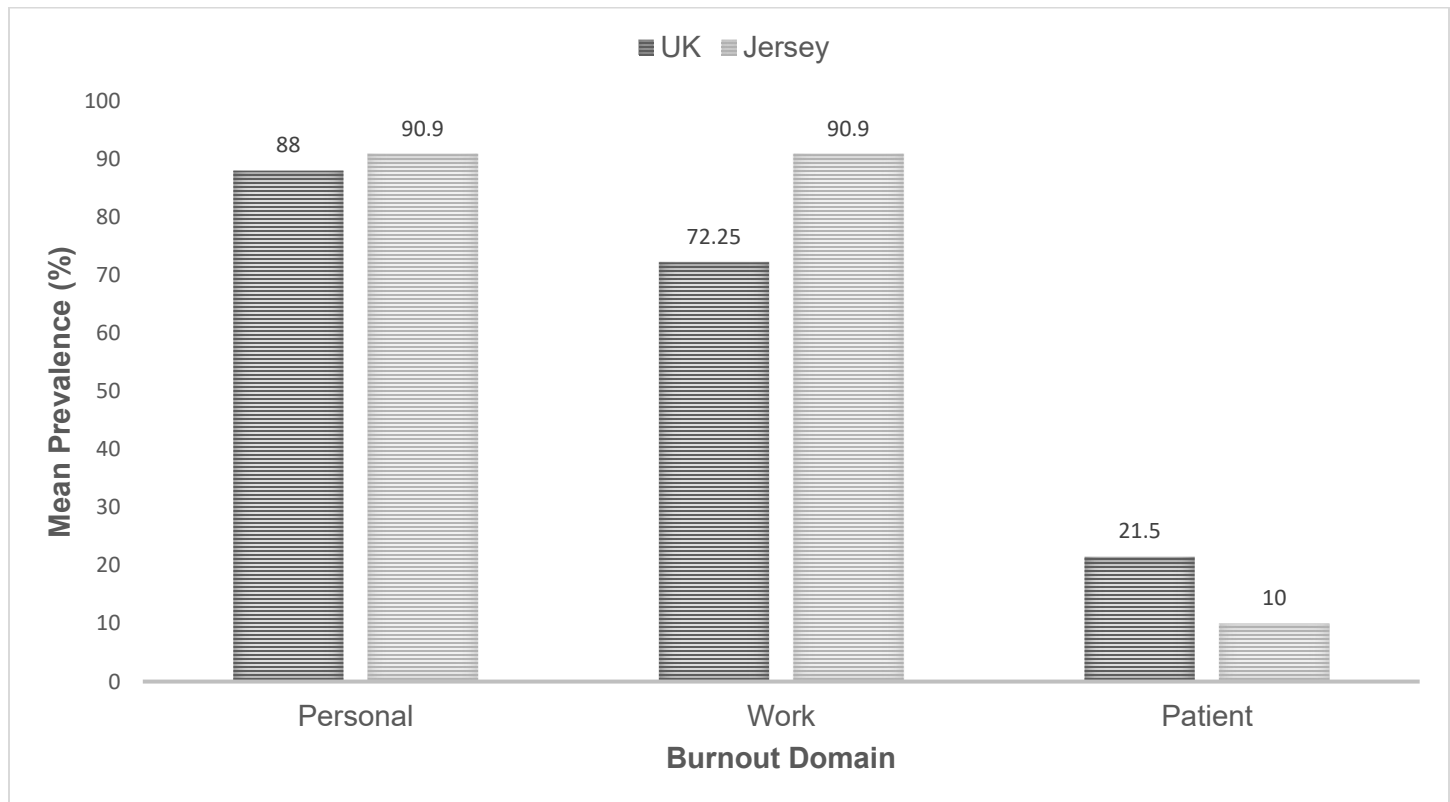
Table 15*Prevalences of Non-Significant, Sub-Clinical, and Clinical PTSD*

PTSD Symptomology	Number of participants and % of total
Non-significant	8 (72.7%)
Sub-clinical	1 (9.1%)
Clinically significant	2 (18.2%)

The prevalence of clinically significant PTSD symptoms in the Jersey midwives who participated (n=11) is just under 2 in 10, with a further 1 in 10 experiencing sub-clinical symptoms.

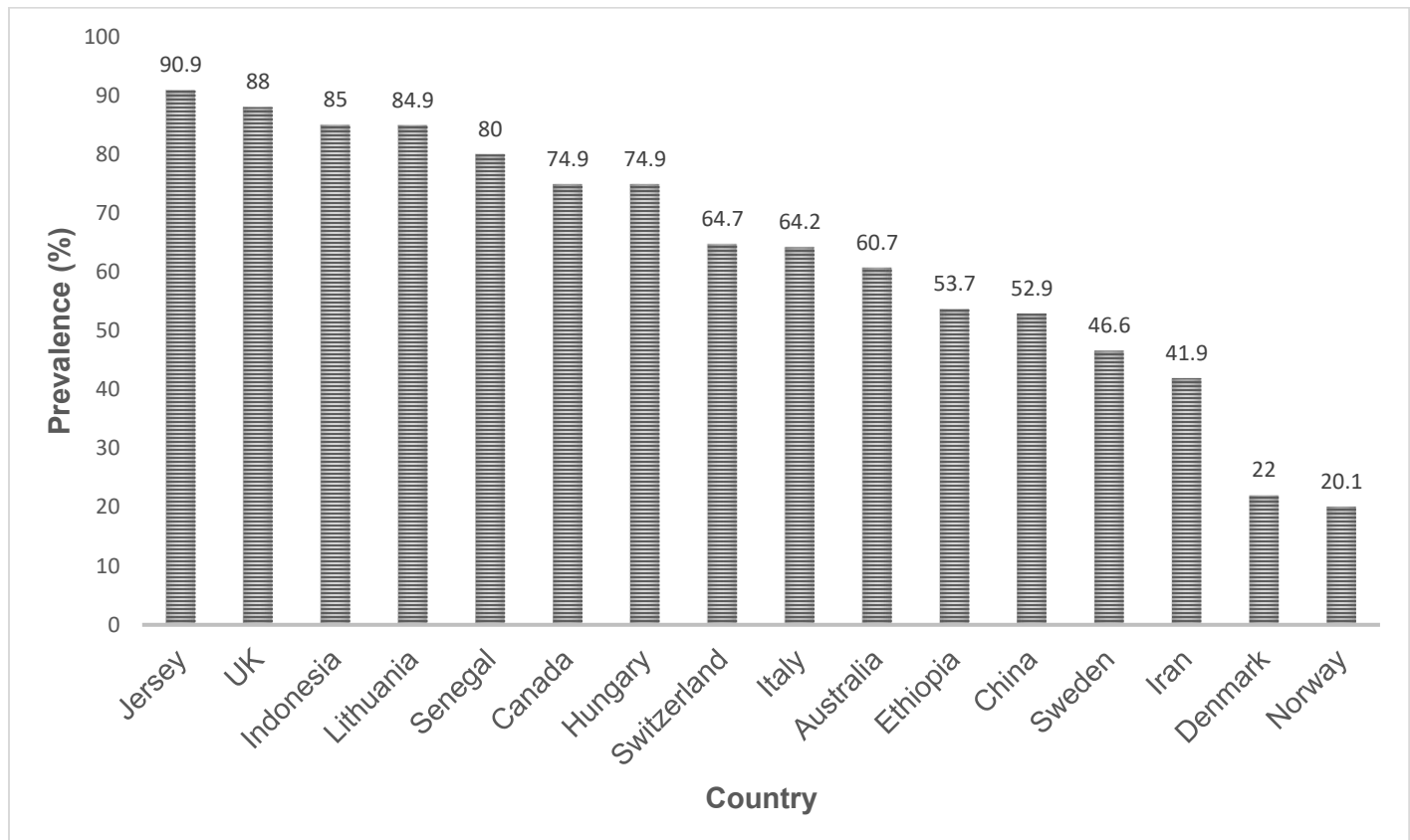
4.3 Are the prevalences like those found in earlier research from midwives globally?

The participants demonstrated similar prevalences to the UK CBI studies (figure 24), however they were joint-highest in Personal and Work domain, whereas the UK was highest in Personal. Both areas showed considerably lower prevalence in Patient.

Figure 24*UK and Jersey Burnout Prevalences by Domain*

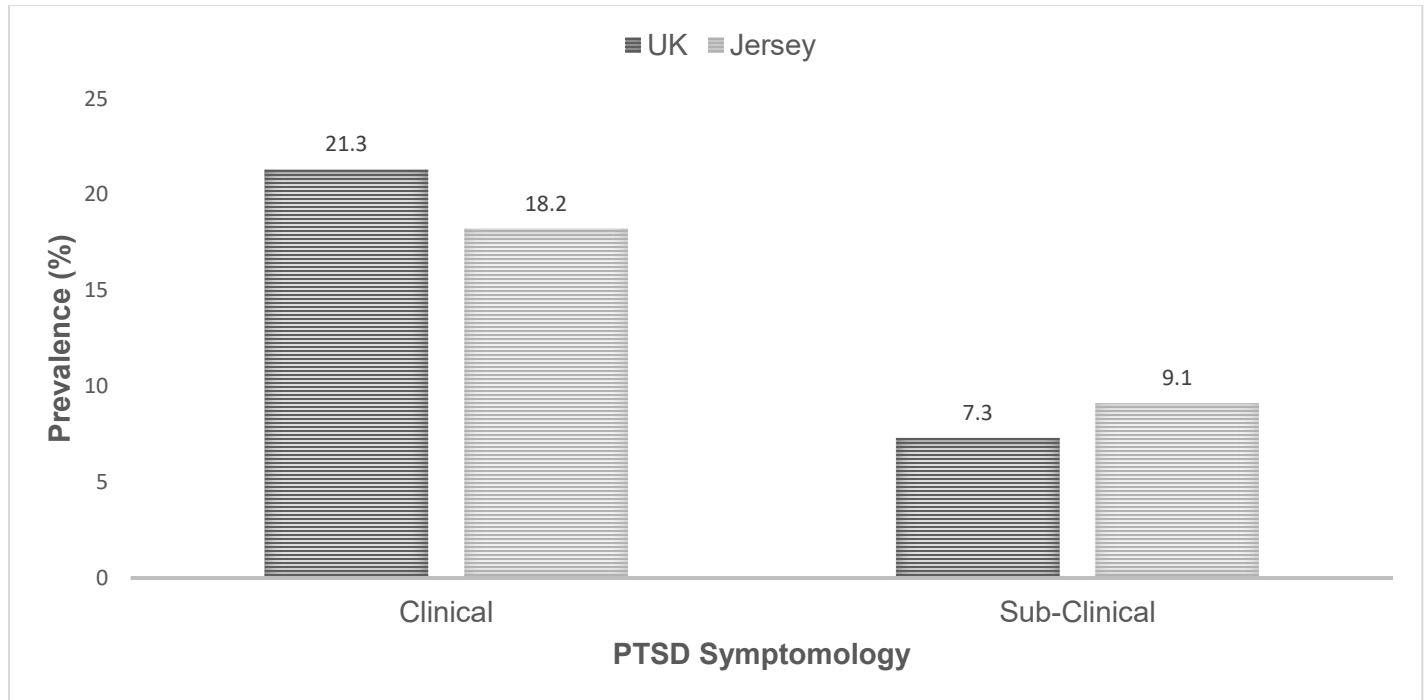
Note. This figure depicts the prevalences for burnout in each domain for the Jersey participants (n=11) and UK studies.

To compare the findings with global research, the highest mean prevalence from each country was chosen regardless of measurement tool (figure 25). This requires very cautious interpretation as, per earlier discussion, burnout/ PTSD definitions and variables within the studies significantly vary. These mean results demonstrate the maximum mean prevalence identified in literature. As domains are not combined, a midwife 'high' in Work burnout but 'low/normal' in Patient is still burntout and is still counted in the prevalence. Midwives who participated in this research (n=10) demonstrated a higher prevalence of burnout than in any other country identified in the literature review, however the discussion chapter will report the limitations of this finding. The UK followed closely as second highest prevalence, with Iran, Denmark, and Norway's prevalences being less than half that of Jersey participants.

Figure 25*Global Burnout Prevalences by Highest Domain*

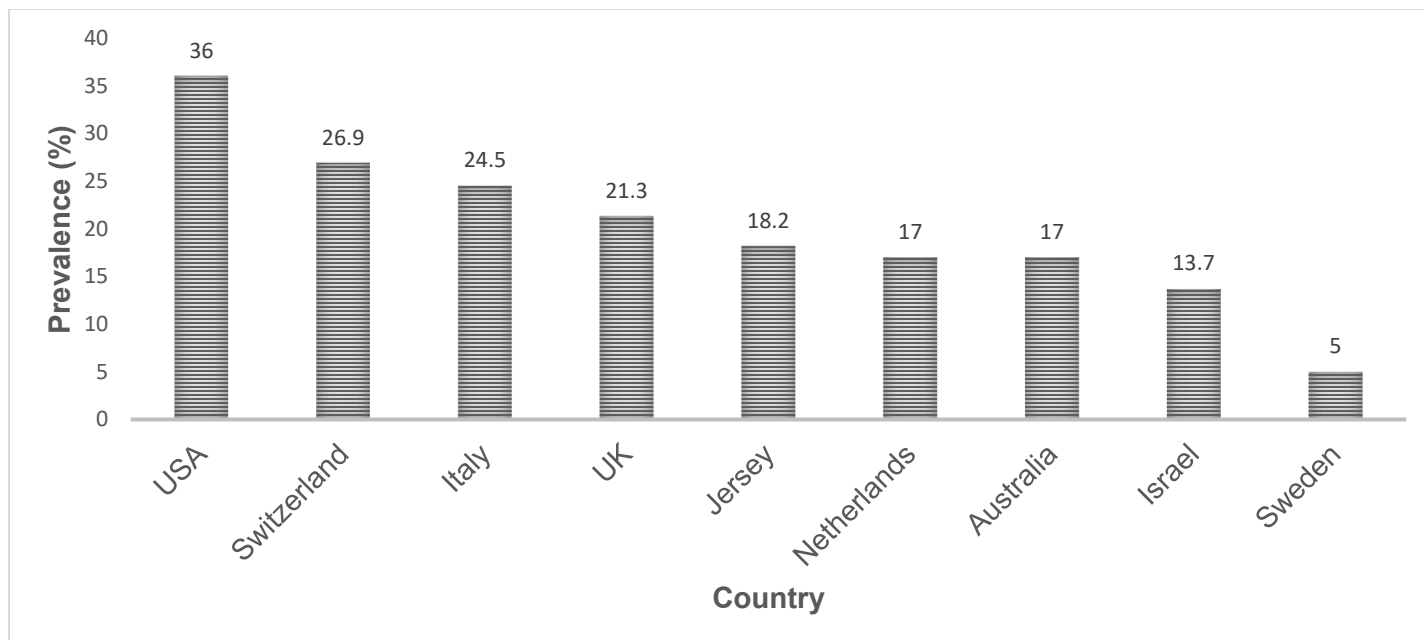
Note. This figure depicts the prevalence of burnout (regardless of domain) in the global research compared with that found in the Jersey participants ($n=11$). The mean was taken where countries produced more than one study.

Clinical and sub-clinical PTSD prevalences were very close between Jersey participants and the UK (figure 26), though clinical prevalence was slightly lower.

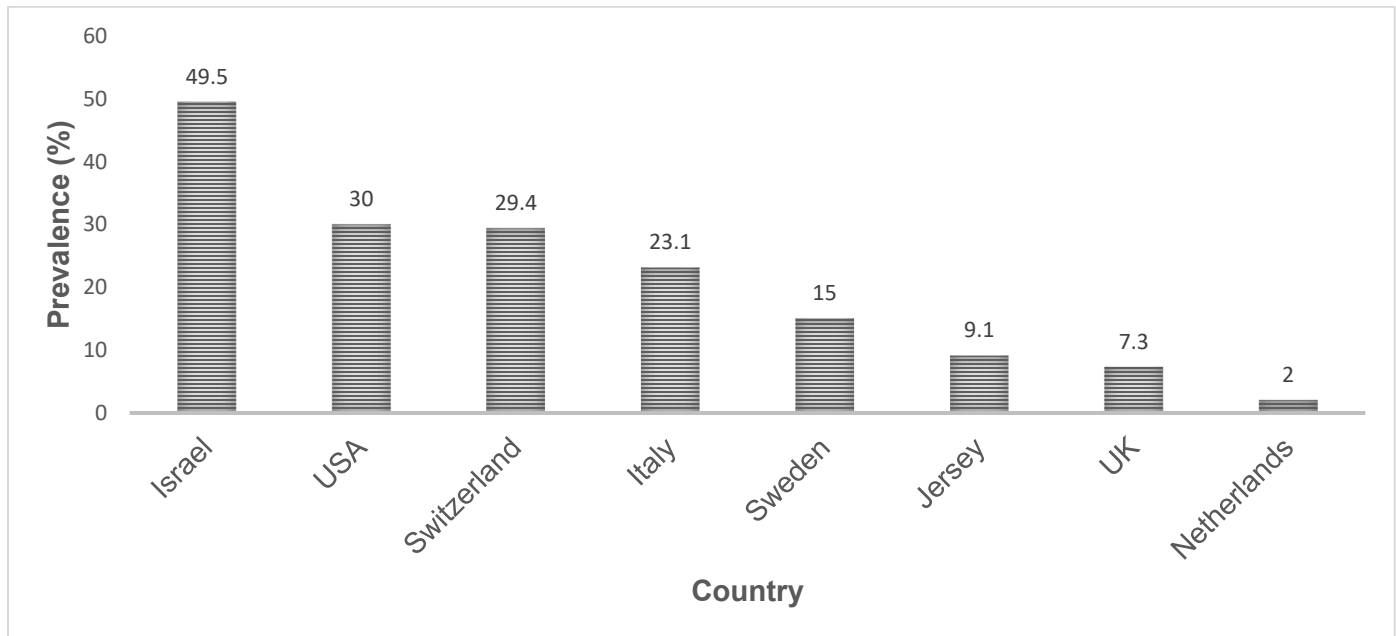
Figure 26*UK and Jersey Clinical and Sub-Clinical PTSD Prevalences*

Note. This figure depicts the prevalences of PTSD and sub-clinical PTSD for the Jersey participants (n=11) and UK studies

Wider variation was seen globally (figure 27), with Jersey participants placing centrally. The prevalence of sub-clinical symptomology worldwide was also wide-ranging (figure 28). Possible implications of this variation will be discussed in the next chapter.

Figure 27*Clinical PTSD Prevalences Globally*

Note. This figure depicts the prevalences of PTSD for the Jersey participants (n=11) and global studies. Where >1 study exists in a country, mean prevalence is used.

Figure 28*Sub-Clinical PTSD Prevalences Globally*

Note. This figure depicts the prevalences of sub-clinical PTSD for the Jersey participants (n=11) and global studies. Where >1 study exists in a country, mean prevalence is used.

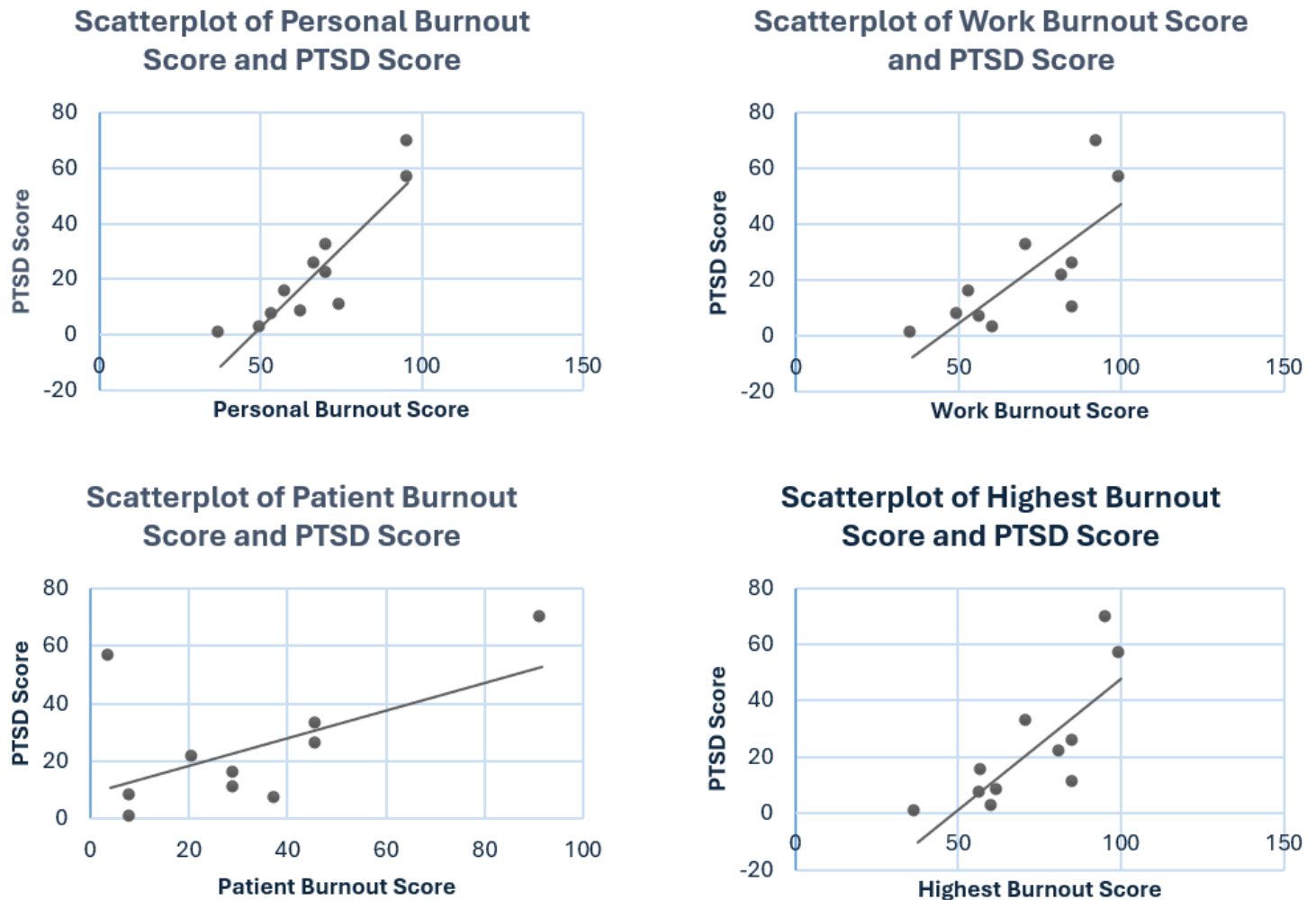
Statistical significance comparing the prevalence rates cannot be reached due to the small sample size in this research. The Chi-Square test that was proposed cannot be performed as the observed frequencies in this research are very low, which violates the test's assumption that sample size is large enough to produce reliable conclusions (McHugh, 2013). The Fisher's test can be utilised for smaller sample sizes including when the two variables propose vastly different population sizes (Jung, 2014; Kim, 2017). This made it a potential substitute for the Chi-Square test. However, as already discussed, the insufficient sample size results in low statistical power (Button, *et al.*, 2013; Miocević, Levy, & Savord, 2020). This increases the chance of type II errors (Akobeng, 2016; Knudson & Lindsey, 2014) and produces unreliable conclusions (Hales, 2016). Therefore, further analysis was not undertaken, and it is not possible to answer the question "*are the prevalences like those found in earlier research from midwives globally?*". It is possible to provide preliminary answers regarding the small number of midwives who participated, with their prevalences of burnout/PTSD are similar to those found in UK midwives and support the identified trend of midwives globally being at risk of burnout/PTSD.

4.4 Further Analysis

With further analysis between this research and global research being of limited value due to the small number of respondents, consideration was given to whether any unplanned analysis could provide value. The relationship between burnout and PTSD has been discussed within the literature review and it could be of interest to assess if this was also present in the study participants. Findings would not be generalisable as they are likely to over- or under-calculate significance. However, for the purposes of preliminary exploration and scientific curiosity, scatter charts were created plotting the 3 burnout domains against the corresponding PTSD score (figure 29). The highest burnout score per participant was also plotted against PTSD to establish if an association between burnout/PTSD was present regardless of burnout domain. This presented a visual representation of the relationship between burnout/PTSD and demonstrated a stronger association between Personal burnout and PTSD than the other domains.

Figure 29

Scatterplots of Jersey Burnout and PTSD Scores



Note. This figure depicts scatterplots of the Jersey participant burnout scores by domain and their corresponding PTSD score. Clockwise from top left: Personal and PTSD scores, Work and PTSD scores, Highest Overall Burnout and PTSD scores, and Patient and PTSD scores

Pearson's correlation (1896) was run to quantify the linear association visible on the scatter charts. Although this is not generalisable, it is still valuable when applying the wider research context that does suggest positive associations (e.g. Halperin *et al.*, 2024; Kubota & Horiuchi, 2022; Sheen, Spiby, & Slade, 2015) and as such, it would be of interest to explore if it is also visible in the Jersey participants. Positive associations were found for Personal, Work, and highest burnout scores when compared with PTSD (table 16).

A positive trend was observed with Patient burnout and PTSD, though this did not reach statistical significance. Spearman's Rho correlation (1904) was also run as some researchers have suggested value in comparing the results with Pearson's correlation to improve capturing of overestimations (Alsaqr, 2021; Hauke & Kossowski, 2011). This is prudent for this research due to the increased likelihood of errors due to the small sample size, though in this instance similar associations were observed. Although the results are underpowered by the small sample, their findings reflect the wider literature and will be discussed further in the next chapter.

Table 16

Comparison of Pearson's and Spearman's Rho Correlation Calculations

Burnout Domain	Relationship with PTSD Score (Pearson)	Spearman's Rho Correlation
Personal	Very strong positive correlation ($r(9) = .89, p = <.001$)	Very strong positive correlation ($r_s(9) = .87, p = <.001$)
Work	Moderate positive correlation ($r(9) = .76, p = .015$)	Moderate positive correlation ($r_s(9) = .78, p = .001$)
Patient	Fair positive correlation, not statistically significant ($r(8) = .55, p = .157$)	Fair positive correlation, not statistically significant ($r_s(8) = .38, p = .135$)
Highest Overall Score	Moderate positive correlation ($r(9) = .79, p = .003$)	Very strong positive correlation ($r_s(9) = .82, p = <.001$)

Note. This table depicts the Pearson's and Spearman's Rho calculations for each burnout domain/highest burnout domain and PTSD scores to assess possible associations. Interpretations guided by Akoglu's guide: Akoglu, H. (2018). User's guide to correlation coefficients, *Turkish Journal of Emergency Medicine*, 18, 91-93, doi: 10.1016/j.tjem.2018.08.001

4.5 Summary

This chapter has communicated the research findings and presented the limited analysis that is justifiable with the sample size. As the limitations caused by a low response rate have significantly impacted the research, the discussion and limitations chapters are now combined to facilitate a candid dialogue about what value can be obtained.

Chapter 5: Discussion Chapter

This research was a cross-sectional quantitative study that set out to describe the prevalence of burnout/PTSD in Jersey midwives. The study experienced a lower-than-expected response rate with only 17.5% (n=11) of midwives responding. Of the small number of responses, burnout prevalence ranged from 10-91% (n=1-10) based on domain, giving a preliminary insight of moderate-high burnout amongst this group. PTSD prevalence was 18% (n=2) with a further 9% (n=1) suffering sub-clinical symptoms. The research questions were not able to be answered with acceptable validity due to the low response rate. The results provide evidence of clinically significant burnout and/or PTSD symptoms in a small number of Jersey midwives (n=10) but cannot accurately predict the prevalences of either in the total population. This chapter will discuss the results obtained within the context of the study and in comparison, to existing research as well as examining the limitations of the findings.

5.1 Interpretation of Results and their Place in the Literature

Burnout

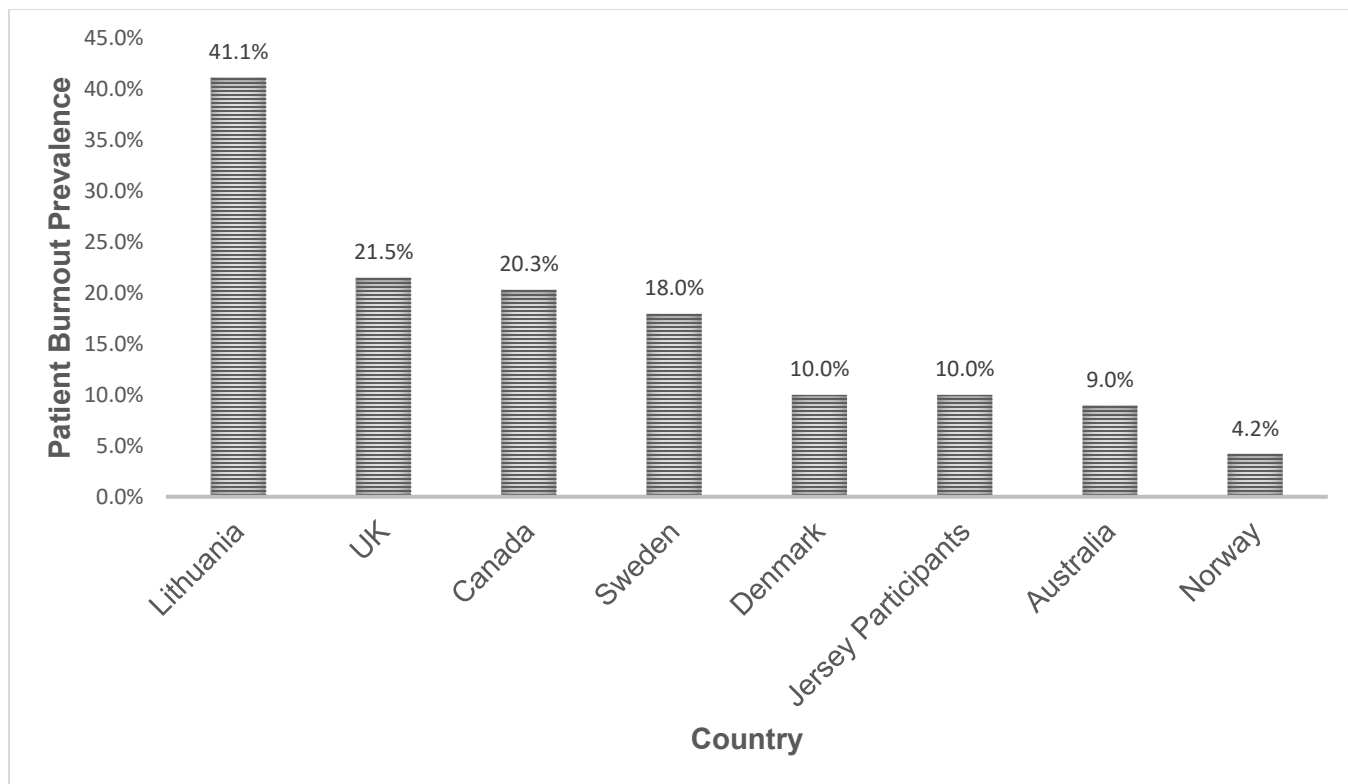
Returning to research design, the CBI (Kristensen *et al.*, 2005) provides three separate measurement values relating to Personal, Work, and Patient burnout. This is beneficial in providing researchers with immediate context as to the specific aspects of a participant's experience with burnout without the need to conduct additional qualitative research exploring the burnout phenomena. However, the CBI makes establishing prevalence of burnout in a population difficult, particularly in instances such as this research where these prevalences can vary significantly between domains. The solution utilised in this research is to include all three individual prevalences and use the highest as the overall prevalence. This decision was made because, to the individuals affected by burnout, it does not matter whether this is more due to their work or the women in their care. If they have moderate-severe burnout in *any* domain, then they are experiencing moderate-severe burnout. The background of each domain and PTSD will be explored in this chapter to provide context.

The prevalence of moderate-severe burnout in the Personal domain was 91% (n=10). This domain relates to the non-specific burnout a participant might be experiencing regardless of their occupation. Many variables have been recorded in the literature as influencing personal burnout, including marital status (Molina-Praena, *et al.*, 2018; Soares, Grossi, & Sundin, 2007), age (Ang, *et al.*, 2016; Garrosa, *et al.*, 2008; Vrendenburgh, Carlozzi, & Stein, 1999), gender (Vassos & Nankervis, 2012), and ethnicity (Lee, *et al.*, 2015b; Lent & Schwartz, 2012). Others include a person's social support and self-esteem (Butler & Constantine, 2005; Janssen, Schaufelie, & Houkes, 1999), current depressive symptomatology and/or a family history of depression in immediate family (Nyklíče & Pop, 2005), and personality traits such as high competitiveness, low

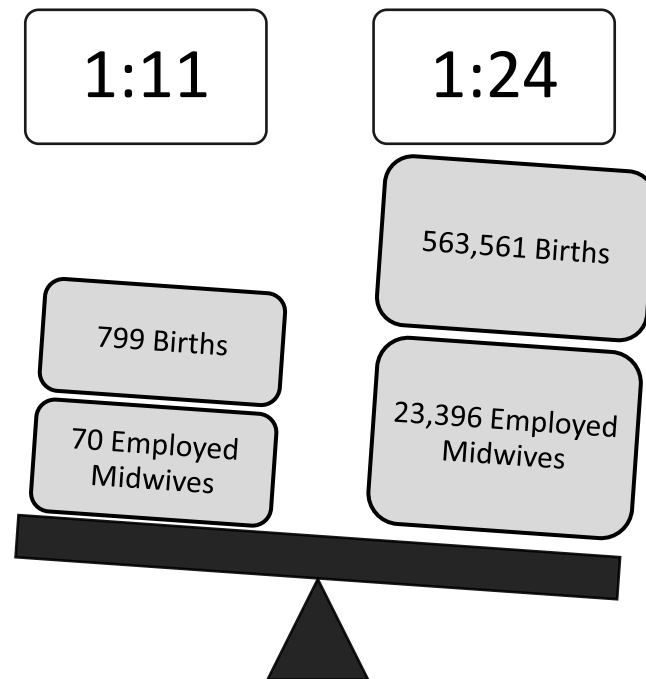
agreeableness, and neuroticism (Rees, *et al.*, 2016; Simionato & Simpson, 2018). Though the workplace cannot expect to control all aspects of a midwife's personal life, how this can impact their role is still important to understand. Demographic and qualitative data was not obtained on the participants in this research; therefore, it is not possible to interpret if these variables were associated with high scores. However, all of the CBI studies globally presented the Personal burnout prevalence as the highest for their midwives. This poses the question: are these known predictive factors causing high levels of Personal burnout in midwives worldwide, or are they confounding variables to midwifery work? Every non-midwife in the world has a chance of fitting these characteristics, so why do midwives stand out, including having produced higher mean scores than 14 other human-services professions assessed by Borritz, *et al.* (2006)? One possible explanation is the persistent high prevalence of Work burnout also found in this research's participants and those in the global literature review. Work burnout was high in the participants with a mean prevalence of 91% (n=10). According to the CBI definitions, this would suggest their midwifery work is causing significant burnout. The 2021 Maternity Services Report (MSR) (Health and Social Security Scrutiny Panel [HSSSP], 2021) lists several findings that are associated with staff burnout, including inadequate facilities (Engelbrecht, *et al.*, 2008; Lupo, *et al.*, 2021), complaints from service users (Panagioti, *et al.*, 2018; Windover, Martinez, & Mercer, 2018), insufficient staffing (Dall'Ora, *et al.*, 2020; Garrett, 2008), feeling unheard or unsupported by management (Aiken, Clarke, & Sloane, 2002; Biksegn, *et al.*, 2016), and ineffective leadership (Ghavidel, *et al.*, 2019; Patel, *et al.*, 2019). Though the MSR was published four years ago recent media communications confirm improvements are ongoing (Yettram, 2025). As such these factors associated with burnout may have been present within the service during data collection and could have caused negative effects on participants, providing insight into possible explanations for the high prevalence in this domain. With this research having provided exploratory insight into the presence of Work burnout locally, further research could be undertaken to explore if institutional changes might be required. Although the response rate was low, the responses that were positive for burnout and/or PTSD are still real people who may be suffering. A systematic review of 36 studies (Salvagioni, *et al.*, 2017) found burnout is predictive of a substantial list of physical and mental ailments, including insomnia, compromised immune response, cardiovascular disease, type 2 diabetes, pain, prolonged fatigue, gastrointestinal problems, respiratory issues, depression requiring medication, and hospitalisation for mental disorders. Job factors such as absenteeism, presenteeism, and job dissatisfaction were also found to be more likely to occur. The findings of this study may not be statistically significant, but the impact of burnout on the midwives who did respond is significant and deserves to be recognised. Preliminary insight into burnout in Jersey midwives has been gained and the need for future investigation identified.

Patient burnout demonstrated a considerably lower prevalence of 10% (n=1). This relates specifically to burnout the respondent perceives as caused by interpersonal relationships between themselves and the patients they care for (Kristensen *et al.*, 2005). In the design chapter, the topic of high levels of altruism in midwives was briefly discussed (Gebriné, *et al.*, 2019; Khakbazan & Ebadi, 2019; Williams, 2006). Key aspects

of altruism in healthcare roles include building these interpersonal relationships (Arnold & Undermanboggs, 2011) and staff being motivated by a central desire to help others (Alfred, *et al.*, 2013). Research has also suggested that altruism negatively correlates with burnout (Gyorffy, Birkas, & Sandor, 2016; Limberg, Lambie, & Robinson, 2018; Limberg, *et al.*, 2021; Mehra, 2023; Shi & Zhang, 2017). This raises the question whether the participants may have experienced less burnout in the Patient domain due to it being influenced by an altruistic desire to continue helping women and feeling emotionally connected to them, which could be explored in future research. Interestingly, despite the Jersey participants having the highest Personal and Work burnout prevalences when comparing them with the seven other countries who used the CBI, they place 6th in Patient prevalence (figure 30). Whilst there is no documented evidence, professional experience in UK and local midwifery services indicates that Jersey midwives are usually responsible for less women each shift than their NHS counterparts, though there is no national standard for this outside of 1:1 care in labour (NICE, 2015). Research has found that lower staff-patient ratios improve staff-patient interactions (Bridges, Griffiths, Oliver, & Pickering, 2019) and midwives describe these positive interactions and relationships as fundamental to their role (Almorbaty, *et al.*, 2023). The midwife:patient ratios of England and Jersey can be roughly approximated by employed midwives: total births. Using 2023 data (NHS England, 2024; Office for National Statistics, 2024; Public Health Jersey, 2024), the midwife:patient ratio in England is more than twice that of Jersey (figure 31). Though this comparison does not control for working patterns or leave, as well as the complexity of care required, with there being over double the number of midwives per birth in Jersey, it is understandable that professional experience has been of a lower ratio. Research has shown that higher staff:patient ratios are also predictive of burnout (Chen, *et al.*, 2019; McHugh, *et al.*, 2021; Shah, *et al.*, 2021; Shin, Park, & Bae, 2018), meaning it is possible that midwives in this research experienced less patient burnout due to having better midwife:patient ratios. Though it is not within the scope of this research to test this as a hypothesis, it is a viable concept for further research.

Figure 30*Patient Burnout Prevalence Per Country*

Note. This figure depicts the Patient burnout prevalences identified in Jersey participants (n=10) and global literature. Where >1 study was conducted in a country, mean prevalence is provided.

Figure 31*Midwife: Live Birth Ratios for Jersey and NHS England*

Note. This figure depicts the approximate Midwife: Live Births Ratio for Jersey and NHS England. 2023 data is used as the NHS England 2024 birth report had not been published at time of writing this dissertation. Statistics taken from: NHS England. (2024, January 25). *Record number of nurses and midwives working in NHS*, NHS England, <https://www.england.nhs.uk/2024/01/record-number-of-nurses-and-midwives-working-in-nhs/>; Office for National Statistics. (2024, October 28). *Births in England and Wales: 2023. Annual live births, stillbirths, maternities, and fertility rates in England and Wales by factors including parent age, ethnicity, deprivation, gestational age, and birthweight*. Office for National Statistics, <https://www.ons.gov.uk/peoplepopulationandcommunity/birthsdeathsandmarriages/livebirths/bulletins/birthsummarytablesenglandandwales/2023>; Public Health Jersey. (2024). *Births and Breastfeeding Profile 2023*, Public Health Jersey, St Helier. <https://www.gov.je/SiteCollectionDocuments/Government%20and%20administration/Births%20and%20Breastfeeding%20Profile%202023.pdf>

Though the sample size was too small to draw concrete conclusions, 10 out of 11 respondents showed evidence of moderate-severe burnout. This aligns with earlier global literature finding midwives to be at high risk of burnout, though further investigation is needed with a larger cohort to before conclusions can be made. There is also value in exploring possible reasons for the findings, as the midwives who participated are still real people being impacted by the negative effects of burnout. This will be discussed in the implications section.

PTSD

18% (n=2) of Jersey participants were found to have clinical PTSD symptoms. Though not generalisable to the wider population, this finding should not be ignored. With the findings mirroring the UK and following global trends over the last decade, cautious concern is raised that they could be plausible. If further research determined it is representative of Jersey midwives, this could translate to 12 of Jersey's midwives experiencing clinical PTSD, and a further 6 suffering sub-clinical symptoms. However, should the true prevalence be lower, this does not negate the need for action as a single midwife suffering PTSD due to their work is still a person suffering. Though this research did not identify reasons for the prevalence the literature provides many possibilities. Adverse perinatal events are the leading trigger for PTSD in midwives, namely obstetric emergencies and maternal or neonatal deaths (Beck, LoGiudice, & Gable, 2015; Cankaya, Aksoy, & Yilmaz, 2021; Cohen, *et al.*, 2017; Darling, *et al.*, 2023; Elmir, *et al.*, 2017; Endjala, Amukugo, & Ngitanwa, 2021; Leinweber, *et al.*, 2017; Robinson, *et al.*, 2022; Schröder, *et al.*, 2017). The maternal mortality rate is not available for Jersey as due to the small population statistics have often been exempted from publication due to the risk of identifying individuals and breaching confidentiality (Freedom of Information [FOI] (Jersey) Law, 2011; FOI Office, 2024). Maternal deaths are included in the MBRRACE-UK review programme where they are combined with the UK, other Channel Islands, and Isle of Mann (MBRRACE-UK, 2023). The most recent brief reports that 272 women died in 2020-22 due to direct or indirect pregnancy causes (MBRRACE-UK, 2024), putting the mortality rate at 13.41 per 100,000 maternities. With Jersey's recent birth rates being below 1000/year (GoJ, 2023) this would mean Jersey might anticipate one maternal death every 10 years, but confidentiality mitigations mean this cannot be confirmed. Obstetric emergencies statistics are also limited. A recent FOI request published local data regarding massive obstetric haemorrhages (MOH) (FOI Office, 2024b) that required emergency management (NICE, 2023c) with 135 recorded between 2021-2023. The stillbirth rate is published as 3.5/1000 with 26 stillbirths and <10 neonatal deaths occurring between 2014-2023 (Public Health Jersey, 2024), and personal accounts from women in the recent service review (HSSSP, 2021) describe their experiences with traumatic births. This data evidences that Jersey midwives are exposed to traumatic births and other adverse perinatal events despite the small service size and low risk of maternal mortality and therefore are at risk of developing PTSD from traumatic events. Being burntout can also increase this risk (Halperin, *et al.*, 2024; Kubota & Horiuchi, 2022; Sheen, Spiby, & Slade, 2015). The limited data

gathered in this research supports this as the Personal, Work, and Highest burnout scores all positively correlated with PTSD scores.

Overall

This research has contributed to this existing knowledge by introducing data around burnout/PTSD in Jersey midwives for the first time. Though not generalisable, table 17 demonstrates that applying the UK prevalences (as the most closely related health system) provided almost identical findings, which supports the Jersey findings' plausibility. Nonetheless, further research to determine the local prevalence is needed to confirm or refute this. The null hypothesis, in hindsight, could have benefitted from being presented in two parts:

- 1) The prevalence of burnout/PTSD in midwives does not vary between Jersey and UK
- 2) The prevalence of burnout/PTSD in midwives does not vary between Jersey and other countries

This is because the current single null hypothesis could be considered both supported and refuted depending on what element of the findings is being discussed. The prevalences found, though only preliminary, do not vary between Jersey and the UK, supporting the null hypothesis. However, they do vary between Jersey and other countries, refuting the null hypothesis. Finally, earlier literature and the limited data from this research suggest midwives could be at risk of burnout/PTSD regardless of where they work, therefore raising the question whether the individual variations in prevalence are the most important aspect of the findings after all. Any level of moderate-severe burnout or PTSD requires attention, and as such, implications for the local MS will now be discussed.

Table 17*Application of UK and Jersey Prevalences Found*

	Burnout		Clinical PTSD		Sub-Clinical PTSD	
Country Prevalence Obtained	Prev. (%)	N° MWs	Prev. (%)	N° MWs	Prev. (%)	N° MWs
UK	88	61	21.3	14	7.3	5
Jersey	91	63	18.2	12	9.1	6

Note. This table depicts the number of Jersey midwives who could potentially be suffering from burnout, clinical PTSD, and sub-clinical PTSD if the UK or limited Jersey findings were found to be accurate.

5.2 Implications for Policy and Practice

The implications of burnout/PTSD for the small number (n=11) of midwives surveyed are important. Whether the limited figures from this research or the wider UK research are used, the number of Jersey midwives possibly affected by burnout/PTSD (table 17) highlights a potentially unrecognised issue locally. With burnout being an occupational phenomenon (WHO, 2025) and the PTSD scores in these findings being based on work-related trauma, these findings are important for Jersey's MS to understand. Though the CBI does also measure Personal burnout and the workplace cannot expect to control all aspects of a midwife's personal life, recognition of how burnout in any domain and/or PTSD can impact their role is still important. This dissertation has already discussed the evidence regarding the implications of burnout/PTSD on an individual's physical and mental health and how this can result in absenteeism, presenteeism and job dissatisfaction. It has also been discussed how this in turn can reduce the quality of the service and result in poorer birth outcomes, highlighting the importance of retaining a cohort of midwives with high morale and wellbeing. One implication that has not yet been discussed is burnout contagion. First identified in 1980 (Edelwich & Brodsky), this describes how burnout and associated negative emotions such as anger can be absorbed by colleagues and increase the prevalence, which in turn reduces patient's perceptions of the quality of their care (Bakker, Le Blanc, &

Schaufeli, 2005; Feng & Cui, 2024; Pettitta, Jiang, & Hartel, 2016). Contagion could explain some higher prevalences in the literature and is important for Jersey to understand as even if the preliminary prevalences are inflated, contagion can start from the small number of participants identified as affected in this research and impact the service. Regulatory bodies and authorities have repeatedly called for an overhaul of the health service and workforce (HCHSCC 2021; NMC, 2021) with burnout being cited in leaver's surveys as one of the top 3 reasons midwives chose to leave the profession, along with concerns of poor quality of care and low staffing levels (NMC, 2024c). These surveys also found midwives were unlikely to recommend the career path to others, highlighting retention and recruitment concerns. The responses from midwives across the UK mirror those raised in research discussed throughout this dissertation, evidencing that the findings in small samples, few studies, or without statistical power, may still be accurate. The proverb '*prevention is better than cure*' has been applied to Jersey regarding public health matters (Public Health Jersey, 2025) but must also be harnessed to support the workforce. A review by Sidhu, *et al.* (2020) identified institutional factors being most prevalent in the literature regarding factors associated with burnout. This included poor work environment, poor perceptions of practice, and insufficient organisational support. As discussed in the previous chapter, Jersey's MS has accepted criticisms from the MSR (HSSSP, 2021) regarding the environment and lack of support. Since publication, significant progress has been made by Jersey's health service to improve staff wellbeing with strategies such as 1-2-1 and peer support programmes, mindfulness sessions, and a dedicated wellbeing team (GoJ, personal communication, April 11, 2025). The MS has also implemented weekly 'Time to Talk' sessions with the DoM, interdisciplinary team-building exercises, and psychological safety training. Whilst recovery from burnout is possible, the effects are often long-lasting, and even post-recovery can continue to negatively impact a person's behaviours and resilience (Boštjančič, 2016). Likewise, it has been argued that traumatic memories cannot be entirely forgotten, and further traumatic events can cause reoccurrence of symptoms (Bingol, *et al.*, 2020). It is therefore possible that the midwives identified as affected in this research may have benefited from recent improvements in the MS, however, have not fully recovered.

5.3 Limitations

This section will discuss the key limitations of the research as well as mitigations utilised. The findings of this research were limited by a low response rate resulting in findings that cannot reach statistical significance. Studies with similar issues have historically gone unpublished or suppressed (Cook, Heath, & Thompson, 2000), however later studies have identified that not reporting insignificant or negative findings is a bias in itself (Duyx, *et al.*, 2017; Page, McKenzie, & Higgins, 2018; Song, *et al.*, 2010) by risking the distortion of future systematic reviews to only show large, positive results. Therefore, to ensure transparency and contribution to the knowledge base, it is better practice for this dissertation to acknowledge and clearly outline all findings and limitations to avoid readers being misled (Sumpter, *et al.*, 2023). The small sample and lack of statistical significance have been repeatedly stated wherever an interpretation was made to assist the reader in

understanding that any inferences made cannot be satisfactorily evidenced. Low response rates are a prolific issue in midwifery research with all of the UK studies in the literature review plus many other midwifery studies experiencing the same problem (Beck, LoGiudice, & Gable, 2015; Cantrill, Creedy, & Cooke, 2003; Heazell, *et al.*, 2008; Mollart, Newing, & Foureur, 2009; Wahlberg, *et al.*, 2017). Reasons for low response rates that could have influenced this research include having no monetary incentives (Abdelazeem, *et al.*, 2022), limited recruitment methods (Shiyab, *et al.*, 2023), disengagement due to workload/time constraints (Asch, 2000; Daly, Hannon, & Brady, 2019; Ellis, *et al.*, 2022; Tooher, Middleton, & Crowther, 2008; Webb, 2002), survey fatigue/lack of motivation (Brown, *et al.*, 2024; Ghafourifard, 2024; Meterko, *et al.*, 2015), exhaustion post-Covid (de Koning, *et al.*, 2021) and concerns about confidentiality or invasive questions (Hill, *et al.*, 2006). As already discussed, financial incentives were not possible. Though as little as \$2 given pre-participation has been found effective (Smith, *et al.*, 2019), this would have created a cost of £126 in an unfunded study. As well as email/ verbal recruitment, the study design had planned posters for the clinical environment as another method which were not supported by the DoM. Workload and time concerns were mitigated by ensuring the survey link was accessible to participants on personal devices for them to complete outside of work. Three reminder emails were sent as research shows this can improve response rate (Aerny-Perreten, *et al.*, 2015), especially in participants with heavy workload (Barclay, *et al.*, 2002), and it was noted responses did rise after each reminder despite some evidence refuting the tactic's success (Meyer, *et al.*, 2022). Locally there is also evidence, through an email account affiliated with the health service, of repeated surveys being distributed from a variety of departments including HR and Digital Health. These recurrent requests may have contributed to survey fatigue (Ghafourifard, 2024). Daly, Hannon, & Brady's (2019) qualitative work found midwives felt overwhelmed by research requests and though the internal surveys were not academic, they are still forms of research. Finally, though the PIS was clear on the steps taken to anonymise the data, some midwives may have disengaged due to fear of loss of confidentiality (Cardell, *et al.*, 2022). The likelihood of future participant-researcher interaction in the service is high, and participants therefore may not want to disclose sensitive answers due to privacy considerations (Booker, Austin, & Balasubramanian, 2021). In addition to these possible reasons, research has identified decreasing responses in healthcare-related surveys since the 1970s (Czajka & Beyler, 2016; Harrison, *et al.*, 2020; Jensen, *et al.*, 2022; Lynn, 1996; Mölenberg, *et al.*, 2021; Tolonen, *et al.*, 2006) including the UK studies reviewed. Had Jersey presented a larger population of midwives, this response rate could have resulted in statistically satisfactory findings, as both Hunter *et al.* and Sheen *et al.* from the literature review were published with a response rate of just 16%. Should there be a similar attempt to describe prevalences in Jersey, securing funding to allow monetary incentives and considering alternatives to online surveys may improve these limitations. However, the precedent of low response rates over several decades highlights a need to develop new engagement methods.

Another limitation is the use of the PCL-5. Though still justified as discussed in the design chapter, its offering of several different scoring methods dependent on requirement means future studies may not be easily

comparable to these findings should the chosen method differ. To mitigate this, the decision has been clearly outlined and justified to ensure the research can be replicated using the same method in future if desired. The PCL-5 and CBI also do not capture demographic data, though this can be captured separately with additional questions. As discussed earlier, demographics were not collected due to the risk of identifying participants in a small sample. Had these been collected, such identification could easily have occurred with such a low number of responses. This may not be possible to mitigate should a similar study be undertaken in Jersey again due to the same confidentiality risk, however including midwives from other areas (e.g. Guernsey, UK, ROI) could provide demographic data without highlighting individual participants.

The findings of this research are at risk of being over- or under-representative due to self-selection bias. This would suggest that midwives were more likely to participate if they have experienced burnout/PTSD compared to those who were unfamiliar with either concept, either due to lack of symptoms or lack of knowledge (Campanini, 2021; Weeks, 2018), which could artificially inflate the prevalences found. A larger response rate would have reduced self-selection bias and may have decreased the prevalences identified. In contrast to this, research has shown that burnout decreases motivation and engagement (Denton, Newton, & Bower, 2008; Duran, Extremera, & Rey, 2004; Langelaan, *et al.*, 2006; Maslach & Leiter, 2016; Meynaar, *et al.*, 2021), which would have the opposite effect to self-selection bias in that the most burntout midwives would not be motivated to participate. Although this demotivation and disengagement relates to the midwives' work, invitation to this research was via an email to their work account and relied on their interest and engagement to pique during their work shift. It is possible that the midwives most burntout instead did not engage with the research, meaning non-response bias would be present instead of self-selection as the lack of burntout respondents would falsely reduce the prevalences found. Research has suggested that healthcare research may be less susceptible to non-response bias (Kellerman & Harold, 2001) and adjustments made to data to control for it may not affect overall prevalences (Simonetti, *et al.*, 2020), supporting the chance of the findings being accurate. However, there is also response bias to consider. This refers to *how* midwives answered questions and proposes that some may have answered in a way that they supposed would be satisfactory to the researcher (Sedgwick, 2014) or to present findings they felt were desirable (van de Mortel, 2008) knowing that the findings of the research may have implications on the MS. In contrast, the opposite could also be true, and the prevalence identified could be falsely decreased. The lack of outlier scores is reassuring against this bias; however, it is not possible to confirm whether these biases have influenced the findings of this research. With the findings being reflective of the UK prevalences, the influence of these biases could be low. Though this is unknown, research shows value remains in the findings (Buhi, 2005; Carlisle *et al.*, 2015; McShane, *et al.*, 2019; Timmermans, 2011; Vail & Avidan, 2022) with Meterko, *et al.* (2015) stating low response rates are not a valid reason to dismiss the findings as uninformative. Cochrane's (Higgins, *et al.*, 2024) review handbook advises that small studies such as this can still benefit meta-analysis papers where larger studies exist as

these may lend credibility to the insignificant findings. With the UK prevalences being similar to this research, and the global literature indicating burnout worldwide, these insignificant findings become more interesting.

Finally, the research dissertation was limited by restricted access to academic journals and full-text articles due to UoC limitations for Jersey-based students. This prevented retrieval of some key texts and contemporary references.

Chapter 6: Conclusion & Recommendations

This dissertation aimed to establish the prevalences of burnout/PTSD in Jersey midwives and compare them with those reported in prior global research. 91% (n=10) of participants demonstrated moderate-severe burnout related to their midwifery work, though only 10% (n=1) perceived this to be related to interpersonal work with women. 18% (n=2) met criteria for PTSD diagnosis, with a further 9.1% (n=1) experiencing sub-clinical symptoms. A low response rate prevented statistical significance being reached, therefore the findings have been interpreted cautiously as the risk of over- or under-representation is high. The research questions are not able to be answered due to the lack of generalisability to the Jersey midwife population, and further research is needed to determine if the findings are representative. However, global literature has found burnout/PTSD are present in midwives worldwide. This research contributes to the growing sphere of knowledge around midwives and burnout/PTSD by introducing a cohort of midwives that have not been assessed before and providing preliminary insight into a population that could benefit from future investigation. A pattern of low responses is visible in the literature including here in Jersey. Though this makes determining true prevalences difficult, studies with larger samples (e.g. Hunter *et al.*) and those with smaller samples (e.g. this research) found cause for concern. With the small number of responses in this research being reflective of those in UK studies, what they lack in statistical significance is slightly moderated by the fact they reflect the next-closest health system and other countries in their overall finding: midwives are experiencing burnout/PTSD. This concluding chapter will explore recommendations for Jersey and the research community following the findings of this research, as well as dissemination plans.

6.1 Recommendations

For the Service

These recommendations (table 18) were published as part of the RCM's Solution Series (2024). Though the series is not publicly available, RCM represent most UK/CI midwives (Royal College of Midwives, n.d.) therefore the series is accessible for Jersey's MS. Implementation ideas are original or referenced where adapted from existing sources, and reflect research that has suggested strategies to reduce risk of burnout/PTSD including the need to improve workplace culture and environment (Wright, Matthai, & Warren, 2017), training opportunities (Sidhu, *et al.*, 2020), awareness of local support options (RCOG, 2024), and clinical supervision availability (Moran, Foster, & Bayes, 2023). They also reflect positive influences such as authentic leadership (Al Sabei, *et al.*, 2023), a managerial style prioritising open communication, affirmative support, and fostering self-development (McPherson, *et al.*, 2022; Spence Laschinger & Fida, 2014). Finally, the recent RCOG paper (2024) on work-related PTSD also provides suggestions Jersey's MS could implement to improve outcomes.

Table 18*Recommendations and Implementation Ideas*

Recommendation Made	Implementation Ideas
Allocation of breaks at the beginning of the shifts and ensuring these breaks are taken in a timely manner.	Allow staff to choose a break time that best fits their caseload. Write allocated breaks on inpatient white boards to remind midwives their allocation and ensure they plan their workload around it.
Ensure there are facilities provided to ensure that staff are able to rest and maintain hydration and nutrition during their working hours.	(Zhang, <i>et al.</i>, 2020) found that as little as 200ml of water improves thirst, fatigue, and anger, with 500ml needed to improve cognition. Posters could be placed in toilets (checking urine colour for signs of dehydration) and around desks (with reminders to drink). Sherwood Forest Hospitals NHS Foundation Trust (NHS Employers, 2025) provided staff with a reusable bottle they could write their name on and placed printed wellbeing information inside before handout. Vending machines were relocated nearer to clinical areas and 24/7 hot food machines made available, as well as a fruit and vegetable stall. Charitable funds were used to support costs. Plan made as part of Royal College of Nursing's (n.d.) Rest, Rehydrate, Refuel campaign.
Encourage all staff to speak up about their concerns as they might be the one who prevents an avoidable disaster	Allocate clinical restorative supervision sessions with a Professional Midwifery Advocate (PMA) for midwives that take place during their shifts to encourage a positive relationship, enhance collaboration and communication and to capture concerns (Catling, <i>et al.</i> , 2022; Catling, <i>et al.</i> , 2024). Alternatively, run drop-in PMA clinics, or provide an anonymous service (e.g. feedback drop-box or online form) to feedback concerns.

Good team players recognise colleagues who are under stress and support them by sharing workload and giving emotional support. Look out for the stresses that affect performance, such as, tiredness, worries, other's poor behaviour, illness, noise, distractions and hunger	On busy shifts it can be difficult for frontline midwives to support each other. A Wellbeing Tea Trolley has been used in some trusts (Doncaster and Bassetlaw Teaching Hospitals, 2022) to boost mood and hydration, as well as support training. Managerial-level staff such as the Practice Development Midwife could book a 20-minute slot each day to provide front-line midwives with a hot drink, a biscuit, and any hot-topic updates including training and awareness campaigns. Other colleagues could take turns running the trolley, e.g. a PMA to build trust, engagement and communication, the Risk Midwife to discuss trends and incident reports etc.
Your experiences can play on your mind, especially the mistakes you think you might have made. At the end of a shift debrief as a team and share thoughts to enable learning and maintain mental wellbeing. Sign-post staff to available support measures.	Either as part of handover or just before, shift debriefs could take place to reflect on the shift and raise any concerns or questions, or just to share thoughts on the day. All midwives should be reminded of the hospital's Trauma Risk Management (TRiM) facility during mandatory training and how to access it. This should be offered to midwives after any traumatic birth, obstetric emergency, or other distressing incident.

Note. This table depicts recommendations made by the RCM to improve workforce wellbeing and staff retention, along with ideas of implementation. RCM recommendations adapted from: Royal College of Midwives. (2024, March). *Solution Series*, Retrieved April 21, 2025, from Royal College of Midwives, <https://rcm.org.uk/solution-series/>

For Future Research

Although this research did not deliver statistically significant findings, it produced novel preliminary data on a previously untested cohort which can act as a stepping-stone into wider research opportunities. Though global research exists, this dissertation has highlighted a paucity of original research from/about Jersey. A second attempt to describe the local prevalences could be undertaken with adjustments to encourage a higher response rate (table 19). However, with response rates also being low in UK research it is plausible that repeat attempts will not improve response rates. Jersey's MS could undertake an informal repeat via a staff survey, though many of the same concerns regarding ethical considerations and response rate would still apply.

Table 19*Recommended Changes for Repeating this Research*

Recommended Change	Literature Supporting Recommendation	Reasons For and Against the Change
Participant anonymity	(Cardell, <i>et al.</i> , 2022) (McNeely, 2012)	Participant data was coded anonymously; however, names were provided on the consent form. Removing this attribute may encourage midwives to be surveyed on a sensitive topic. The PIS would need to advise that data could not be withdrawn once submitted as it would be impossible to determine whose data set belongs to that person. There is also the risk of fraudulent multiple entries by the same person due to not having to provide a name.
Paper surveys during mandatory training	(Slade, <i>et al.</i> , 2018) (Ellis, <i>et al.</i> , 2022)	Slade <i>et al.</i>'s research started as a survey at the beginning of a mandatory training session, with recruitment into post-intervention follow up. It achieved a response rate of 62% (this fluctuated depending on questions answered but was persistently >56%). The CBI and PCL-5 could be given to Jersey midwives during mandatory training sessions. This ensures dedicated time to participate without workload/time constraints. However, this could lengthen data collection timeframe if all eligible midwives are not attending mandatory training within a short time frame.
Financial incentive	(Abdelazeem, <i>et al.</i> , 2022) (Smith, <i>et al.</i> , 2019),	A small monetary incentive has been shown to increase engagement and participation in research. However, as discussed during the research design chapter, there are ethical concerns around where incentive becomes unacceptable. There is also the challenge of sourcing funding.

Increased advertisement	(Maghera, <i>et al.</i> , 2014)	Use of posters and flyers reminding midwives during the ongoing data collection period to participate if they are interested. Such resources were declined by the DoM for this research, but discussion could be had about the final low response rate to determine if this might change opinion about emails being sufficient.
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Alternative research is a valid alternative. A qualitative exploration into what factors the midwives perceive are responsible for their burnout may provide insight unique to their cohort or strengthen existing knowledge. Another possibility is a mixed-methods design beginning with a repeat assessment of burnout/PTSD in midwives. 3-5 participants who score highly on the CBI/PCL-5 could be invited to structured interviews to qualitatively explore whether they perceive a specific traumatic event, multiple traumatic events, or none, to be influencing their scores. This could explore the idea of cumulative small stressors causing PTSD as opposed to large traumatic events, a theory that is emerging in adolescent-focused research (Flint, 2024; Idsoe, Dyregov, & Idsoe, 2012; Mishna, 2012). Researchers could undertake this study with a wider cohort, for example Jersey nurses. A larger population would provide comparative data between local clinician groups. Wider research could assess the impact of Jersey's lower midwife-patient ratio with a qualitative exploration of both Jersey and NHS midwives' experiences of the care they are able to provide, and how they feel about it. Finally, research to describe burnout/PTSD prevalences in countries yet to explore them could strengthen evidence to support an early hypothesis formed during analysis of this research: midwives are at risk of burnout/PTSD worldwide.

6.2 Dissemination Strategy

Dissemination of findings is an integral part of the research process (Marín-González, *et al.*, 2017). Without it, the knowledge gained fails to be communicated and risks never making any scientific or social impact. Following the completion of this dissertation, the knowledge obtained from the research will be disseminated to participants, healthcare managers, midwives and other maternity staff, conference attendees, and the RCM via several communication methods (figure 32).

Figure 32*Dissemination Plan*

Participants	• Participants were able to mark on their survey if they wanted to receive the study results report by email • Those who agreed will receive a copy of the research abstract and accompanying poster by email, with invitation to discuss the research in more detail if they wish
Healthcare Managers	• Members of the local hospital's senior leadership team and the DoM will also be emailed a copy of the abstract/poster • They will also be invited to meet face-to-face or over Teams to discuss the research in more detail
Midwives and Maternity Staff	• Permission will be requested from the DoM to share the abstract/poster via email to all currently employed Jersey midwives, doctors, and HCAs working for the maternity service • Flyers with further detail will be distributed to the clinical areas
Conference Attendees	• The research is due to be discussed at a research festival at the local college & university • For this, a presentation will be created to explain the research
RCM	• An article summarising the research will be drafted and submitted to the RCM for consideration in their quarterly members magazine, and/or their partnership journal (MIDIRS)

Should any further opportunities or ideas for dissemination emerge, these will also be met wherever possible. Research has found that burnout and PTSD are causing considerable suffering for midwives worldwide, with this dissertation providing preliminary insight into how it might also be impacting Jersey midwives. It is our duty as midwives to pursue the best possible evidence to support women within our care and keep them safe (NMC, 2018). With this dissertation having explored growing evidence of midwives worldwide being at risk of burnout/PTSD, it could be argued that it is the duty of researchers and health systems to now pursue the best possible evidence to do the same for midwives.

References

- Abdelazeem, B., Abbas, K. S., Amin, M. A., El-Shahat, N. A., Malik, B., Kalantary, A., Eltooby, M. (2022). The effectiveness of incentives for research participation: A systematic review and meta-analysis of randomized controlled trials. *PLOS ONE*, 17(4), e0267534. doi:10.1371/journal.pone.0267534
- Abuzaid, A., & Alkronz, E. (2024). A comparative study on univariate outlier winsorization methods in data science context. *Statistica Applicata - Italian Journal of Applied Statistics*, 36(1), 85-99.
- Acharya, A. S., Prakash, A., Saxena, P., Nigam, A. (2013). Sampling: Why and how of it. *Indian Journal of Medical Specialities*, 4(2), 330-333. doi:10.7713/ijms.2013.0032
- Adhikari, A., DeNero, J., Wagner, D. (2022). Computational and Inferential Thinking: The Foundations of Data Science. Retrieved July 31, 2024, from Inferential Thinking: <https://inferentialthinking.com/chapters/intro.html>
- Aerny-Perreten, N., Domínguez-Berjón, M. F., Esteban-Vasallo, M. D., García-Riolobos, C. (2015). Late and non-response to online surveys. *Journal of Evaluation in Clinical Practice*, 21(4), 688-693. doi:10.1111/jep.12367
- Aguinis, H., & Edwards, J. R. (2014). Methodological Wishes for the Next Decade and How to Make Wishes Come True. *Journal of Management Studies*, 51(1), 143-174. doi:10.1111/joms.12058
- Aguinis, H., Gottfredson, R. K., & Joo, H. (2013). Best-Practice Recommendations for Defining, Identifying, and Handling Outliers. *Organizational Research Methods*, 16(2), 187-330. doi:10.1177/1094428112470848
- Aiken, L. H., Clarke, S. P., & Sloane, D. M. (2002). Hospital staffing, organization, and quality of care: cross-national findings. *International Journal for Quality in Health Care*, 14(1), 5-14. doi:10.1093/intqhc/14.1.5
- Akobeng, A. K. (2016). Understanding type I and type II errors, statistical power and sample size. *Acta Paediatrica*, 105(6), 605-609. doi:10.1111/apa.13384
- Akoglu, H. (2018). User's guide to correlation coefficients, *Turkish Journal of Emergency Medicine*, 18(3), 91-93, doi:10.1016/j.tjem.2018.08.001
- Alemu, S. S., Hajure, M., Agago, M. T., Hussien, F., Gesisa, H. G., Teferi, S. M., Yohanes, D., Wedajo, L. F. (2024). Prevalence of burnout and associated factors among midwives, 2023: institution-based cross-sectional study, *Frontiers in Public Health*, 12(2024), 1422915, doi:10.3389/fpubh.2024.1422915

- Al Sabei, S., AbuAlRub, R., Al Yahyaei, A., Al-Rawajfah , O. M., Labrague, L. J., Ali Burney, I., Al-Maqbali g, M. (2023). The influence of nurse managers' authentic leadership style and work environment characteristics on job burnout among emergency nurses. *International Emergency Nursing*, 70, 101321. doi:10.1016/j.ienj.2023.101321
- Alfred, D., Yarbrough, S., Martin, P., Mink, J., Lin, Y. H., Wang, L. S. (2013). Comparison of professional values of Taiwanese and United States nursing students. *Nursing Ethics*, 20(8), 917-926. doi:10.1177/0969733013484486
- Almorbaty, H., Ebert, L., Dowse, E., & Chan, S. W. (2023). An integrative review of supportive relationships between child-bearing women and midwives. *Nursing Open*, 10(3), 1327-1339. doi:10.1002/nop2.1447
- Alsaqr, A. M. (2021). Remarks on the use of Pearson's and Spearman's correlation coefficients in assessing relationships in ophthalmic data. *African Vision and Eye Health*, 80(1). a612. doi:10.4102/aveh.v80i1.612
- Alvi, M. (2016). *A Manual for Selecting Sampling Techniques in Research*. Munich: Munich Personal RePEc Archive.
- American Psychiatric Association. (1980). *Diagnostic and Statistical Manual of Mental Disorders* (3rd ed.). Washington: American Psychiatric Association.
- American Psychiatric Association. (2000). *Diagnostic and statistical manual of mental disorders* (4th ed.). Washington: American Psychiatric Association.
- American Psychiatric Association. (2013). *Diagnostic and Statistical Manual of Mental Disorders* (5th ed.). American Psychiatric Association, Virginia. doi:10.1176/appi.books.9780890425596
- Ang, S. Y., Dhaliwal, S. S., Ayre, T. C., Uthaman, T., Fong, K. Y., Tien, C. E., Zhou, H., Della, P. (2016). Demographics and Personality Factors Associated with Burnout among Nurses in a Singapore Tertiary Hospital. *Biomed Research International*, 2016(1), 6960184. doi:10.1155/2016/6960184
- Arnold, E., & Undermanboggs, K. (2011). *Interpersonal relationships-professional communication skills for nurses* (6th ed.). St Louis, Saunders.
- Arvan, M. (2017, December 7). Should journals rethink word-limits? *The Philosophers' Cocoon*: <https://philosopherscocoon.typepad.com/blog/2017/07/some-thoughts-in-journal-word-limits.html>

- Asch, S. (2000). Problems in recruiting community-based physicians for health services research. *Journal of General Internal Medicine*, 15(8), 591-599. doi:10.1046/j.1525-1497.2000.02329.x
- Bakker, A. B., Le Blanc, P. M., & Schaufeli, W. B. (2005). Burnout contagion among intensive care nurses. *Journal of Advanced Learning*, 51(3), 276-287. doi:doi.org/10.1111/j.1365-2648.2005.03494.x
- Bakker, A., & Hoffmann, M. H. (2005). Diagrammatic reasoning as the basis for developing concepts: A semiotic analysis of students' learning about statistical distribution. *Educational Studies in Mathematics*, 60(3), 333-358. doi:10.1007/s10649-005-5536-8
- Banerjee, A., & Chaudhury, S. (2010). Statistics without tears: Populations and samples. *Industrial Psychiatry Journal*, 19(1), 60-65. doi:10.4103/0972-6748.77642
- Barclay, S., Todd, C., Finlay, I., Grande, G., Wyatt, P. (2002). Not another questionnaire! Maximizing the response rate, predicting non-response and assessing non-response bias in postal questionnaire studies of GPs. *Family Practice*, 19(1), 105-11. doi:10.1093/fampra/19.1.105
- Barton, M. A., Lall, M. D., Johnston, M. M., Lu, D. W., Nelson, L. S., Bilmoria, K. Y., & Reisdorff, E. J. (2022). Reliability and validity support for an abbreviated Copenhagen burnout inventory using exploratory and confirmatory factor analysis. *JACEP Open*, 3(4), e12797. doi:10.1002/emp2.12797
- Bastos, J. L., Duquia, R. P., González-Chica, D. A., Mesa, J. M., Bonamigo, R. R. (2014). Field work I: selecting the instrument for data collection. *Anais Brasileiros de Dermatologia*, 89(6), 918-23. doi:10.1590/abd1806-4841.20143884
- BBC. (2021, October 4). Why women are more burned out than men. Retrieved August 3, 2024, from BBC Worklife. <https://www.bbc.com/worklife/article/20210928-why-women-are-more-burned-out-than-men>
- Beauchamp, T. L., & Childress, J. F. (1979). *Principles of Biomedical Ethics*. Oxford: Oxford University Press.
- Beck, C. T., LoGiudice, J., Gable, R. K. (2015). A Mixed-Methods Study of Secondary Traumatic Stress in Certified Nurse-Midwives: Shaken Belief in the Birth Process. *Journal of Midwifery & Women's Health*, 60(1), 16-23. doi:10.1111/jmwh.12221
- Bianchi, R., Swingle, G., Schonfeld, I. S. (2024). The Maslach Burnout Inventory is not a measure of burnout. *Work*, 79(3), 1525-1527. doi:10.3233/WOR-240095

- Biksegn, A., Kenfe, T., Mawitwos, S., Eshetu, G. (2016). Burnout Status at Work among Health Care Professionals in a Tertiary Hospital. *Ethiopian Journal of Health Sciences*, 26(2), 101-108. doi:10.4314/ejhs.v26i2.3
- Bingol, F. B., Bal, M. D., Aygun, M., Bilgic, E. (2020). Secondary traumatic stress among midwifery students. *Perspectives in Psychiatric Care*, 57(3), 1195-1201. doi:10.1111/ppc.12674
- Bityukov, S. I., Maksimushkina, A. V., Smirnova, V. V. (2016). Comparison of histograms in physical research. *Nuclear Energy and Technology*, 2(2), 108-113. doi:10.1016/j.nucet.2016.05.007
- Blaikie, N. (1993). *Approaches to Social Enquiry*. Hoboken: Wiley.
- Blalock, H. M. (1964). *Causal Inferences in Nonexperimental Research*. Chapel Hill: UNC Press Books.
- Boels, L., Bakker, A., Van Dooren, W., Drijvers, P. (2019). Conceptual difficulties when interpreting histograms: A review. *Educational Research Review*, 28, 100291. doi:10.1016/j.edurev.2019.100291
- Bolatov, A. K., Seisembekov, T. Z., Askarova, A. Z., Igenbayeva, B., Smailova, D. S., & Hosseini, H. (2021). Psychometric Properties of the Copenhagen Burnout Inventory in a Sample of Medical Students in Kazakhstan. *Psychology in Russia*, 14(2), 15-24. doi:10.11621/pir.2021.0202.
- Booker, Q. S., Austin, J. D., Balasubramanian, B. A. (2021). Survey strategies to increase participant response rates in primary care research studies. *Family Practice*, 38(5), 699–702. doi:10.1093/fampra/cmab070
- Borritz, M., Rugulies, R., Bjorner, J. B., Villadsen, E., Mikkelsen, O. A., Kristensen, T. S. (2006). Burnout among employees in human service work: design and baseline findings of the PUMA study. *Scandinavian Journal of Public Health*, 34(1), 49-58. doi:10.1080/14034940510032275
- Boštjančič, E. (2016). Building resilience after suffering from burnout syndrome: perceived changes in personality, views, values and behaviours connected with work. *Tempus et Memoria*, 11(3), 105-109. <https://core.ac.uk/outputs/80973020/?source=oai>
- Brady, K. J., Ni, P., Sheldrick, R. C., Trockel, M. T., Shanafelt, T. D., Rowe, S. G., Schneider, J. I., Kazis, L. E. (2020). Describing the emotional exhaustion, depersonalization, and low personal accomplishment symptoms associated with Maslach Burnout Inventory subscale scores in US physicians: an item response theory analysis. *Journal of Patient-Reported Outcomes*, 4(1), 42. doi:10.1186/s41687-020-00204-x

- Bramer, W. M., de Jonge, G. B., Rethlefsen, M. L., Mast, F., Kleijnen, J. (2018). A systematic approach to searching: an efficient and complete method to develop literature searches. *Journal of the Medical Library Association*, 106(4), 531-541. doi:10.5195/jmla.2018.283.
- Brath, R., & Banissi, E. (2017). Stem & Leaf Plots Extended for Text Visualizations. 14th International Conference on Computer Graphics, Imaging and Visualization, (pp. 99-104). Marrakesh. doi:10.1109/CGIV.2017.32
- Brewin, C. R., Andrews, B., & Valentine, J. D. (2000). Meta-analysis of risk factors for posttraumatic stress disorder in trauma-exposed adults. *Journal of Consulting and Clinical Psychology*, 68(5), 748-766. Doi:10.1037/0022-006X.68.5.748
- Brewin, C. R., Rose, S., Andrews, B., Green, J., Tata, P., McEvedy, C., Turner, S., Foa, E. B. (2002). Brief screening instrument for post-traumatic stress disorder. *British Journal of Psychiatry*, 181, 158-162. doi:10.1192/bjp.181.2.158
- Bridges, J., Griffiths, P., Oliver, E., Pickering, R. M. (2019). Hospital nurse staffing and staff-patient interactions: an observational study. *BMJ Quality & Safety*, 28(9), 706-713. doi:10.1136/bmjqs-2018-008948
- Brooks, L., Bloomer, M., Manias, E. (2018). Culturally sensitive communication at the end-of-life in the intensive care unit: A systematic review. *Australian Critical Care*, 32(6). 516-523. doi:10.1016/j.aucc.2018.07.003
- Brown, R. F., St John, A., Hu, Y., Sandhu, G. (2024). Differential Electronic Survey Response: Does Survey Fatigue Affect Everyone Equally? *Journal of Surgical Research*, 294, 191-197. doi:10.1016/j.jss.2023.09.072
- Brutus, S., Aguinis, H., Wassmer, U. (2013). Self-Reported Limitations and Future Directions in Scholarly Reports: Analysis and Recommendations. *Journal of Management*, 39(1), 48-75. doi:10.1177/0149206312455245
- Buhi, E. R. (2005). The Insignificance of "Significance" Tests: Three Recommendations for Health Education Researchers. *American Journal of Health Education*, 36(2), 109-112. doi:10.1080/19325037.2005.10608167
- Butler, S. K., & Constantine, M. G. (2005). Collective self-esteem and burnout in professional school counselors. *Professional School Counseling*, 9(1), 55-62. doi:10.1177/2156759X0500900107

- Button, K. S., Ioannidis, J. P., Mokrysz, C., Nosek, B. A., Flint, J., Robinson, E. S., Munafò, M. R. (2013). Power failure: why small sample size undermines the reliability of neuroscience. *Nature Reviews*, 14(5), 365-376. doi:10.1038/nrn3475
- Caldwell, K., Henshaw, L., Taylor, G. (2011). Developing a framework for critiquing health research: An early evaluation. *Nurse Education Today*, 31(8), e1-e7. doi:10.1016/j.nedt.2010.11.025
- Campanini, P. (2021). Methodological issues in assessing job stress and burnout in psychosocial research. *La Medicina del Lavoro*, 112(4), 264-267. doi:10.23749/mdl.v112i4.12112
- Campbell, M. J. (2021). Study design and choosing a statistical test. In M. J. Campbell, *Statistics at Square One* (12 ed.), pp. 215-226. Hoboken: Wiley Blackwell. doi:10.1002/9781119402350.ch14
- Cankaya, S., Aksoy, Y. E., & Yilmaz, S. D. (2021). Midwives' experiences of witnessing traumatic hospital birth events: A qualitative study. *Journal of Evaluation in Clinical Practice*, 27(4), 847-857. doi:10.1111/jep.13487
- Cantrill, R. M., Creedy, D. K., Cooke, M. (2003). An Australian study of midwives' breast-feeding knowledge. *Midwifery*, 4(3), 310-317. doi:10.1016/s0266-6138(03)00046-9
- Capili, B. (2021). Cross-Sectional Studies. *American Journal of Nursing*, 121(10), 59-62. doi:10.1097/01.NAJ.0000794280.73744.fe
- Cardell, C. F., Yuce, T. K., Zhan, T., Eng, J. S., Cheung, E. O., Etkin, C. D., Amortegui, D., Jones, A., Buyske, J., Bilimoria, K. Y., Hu, Y. Y. (2022). What They Are Not Telling Us: Analysis of Nonresponders on a National Survey of Resident Well-Being. *Annals of Surgery Open*, 3(4), e228. doi:10.1097/AS9.0000000000000228
- Carlisle, B., Kimmelman, J., Ramsay, T., MacKinnon, N. (2015). Unsuccessful trial accrual and human subjects protections: An empirical analysis of recently closed trials. *Clinical Trials*, 12(1), 77-83. doi:10.1177/1740774514558307
- Catling, C., Davey, R., Donovan, H., Dadich, A. (2024). A metasynthesis of nurses and midwives' experiences of clinical supervision. *Women and Birth*, 37(1), 6-14. doi:10.1016/j.wombi.2023.10.005
- Catling, C., Donovan, H., Phipps, H., Dale, S., Chang, S. (2022). Group Clinical Supervision for midwives and burnout: a cluster randomized controlled trial. *BMC Pregnancy and Childbirth*, 22(1), 309. doi:10.1186/s12884-022-04657-4

- Certo, S. T., Raney, K., Albader, L., Busenbark, J. R. (2023). Out of Shape: The Implications of (Extremely) Nonnormal Dependent Variables. *Organizational Research Methods*, 27(2), 195-222.
doi:10.1177/10944281231167839
- Cheek, J. (2021). Maintaining the Integrity of Qualitatively Driven Mixed Methods: Avoiding the "This Work Is Part of a Larger Study" Syndrome. *Qualitative Health Research*, 31(6), 1015-1018.
doi:10.1177/10497323211003546
- Chen, Y. C., Guo, Y. L., Chin, W. S., Cheng, N. Y., Ho, J. J., & Shiao, J. S. (2019). Patient-Nurse Ratio is Related to Nurses' Intention to Leave Their Job through Mediating Factors of Burnout and Job Dissatisfaction. *International Journal of Environmental Research*, 16(23), 4801.
doi:10.3390/ijerph16234801
- Chima, N. P., & Etuk, E. H. (2017). The Effect of Outliers on Linear Relationship between Mothers BMI and Infant Weight. *CARD International Journal of Medical Science and Applied Biosciences*, 2(4), 133-150.
https://www.researchgate.net/profile/Ette-Etuk/publication/321780352_The_Effect_of_Outliers_on_Linear_Relationship_between_Mothers_BMI_and_Infant_Weight/links/5a316e030f7e9b2a28557944/The-Effect-of-Outliers-on-Linear-Relationship-between-Mothers-BMI-and-Infant-Weight.pdf
- Christiansen, D. M., & Berke, E. T. (2020). Gender- and Sex-Based Contributors to Sex Differences in PTSD. *Current Psychiatry Reports*, 22(4), 19. doi:10.1007/s11920-020-1140-y
- Clark, R. (1995). Winsorization Methods in Sample Surveys. Masters Thesis. Canberra: Department of Statistics, Australia National University.
- Cohen, R., Leykin, D., Golan-Hadari, D., Lahad, M. (2017). Exposure to traumatic events at work, posttraumatic symptoms and professional quality of life among midwives. *Midwifery*, (50), 1-8.
doi:10.1016/j.midw.2017.03.009
- Colosimo, B. M., Pan, R., del Castillo, E. (2004). A sequential Markov chain Monte Carlo approach to set-up adjustment of a process over a set of lots. *Journal of Applied Statistics*, 31(5), 499-520.
doi:10.1080/02664760410001681765
- Cook, C., Heath, F., Thompson, R. L. (2000). A Meta-Analysis of Response Rates in Web- or Internet-Based Surveys. *Educational and Psychological Measurement*, 60(6), 821-836.
doi:10.1177/0013164002197093

- Cook, T. D., & Campbell, D. T. (1979). *Quasi-Experimentation: Design & Analysis Issues for Field Settings*. Boston: Houghton Mifflin.
- Cooke, A., Smith, D., & Booth, A. (2012). Beyond PICO: the SPIDER tool for qualitative evidence synthesis. *Qualitative Health Research*, 22(10), 1435-1443. doi:10.1177/1049732312452938
- Coughlan, M., Cronin, P., Ryan, F. (2007). Step-by-step guide to critiquing research. Part 1: quantitative research. *British Journal of Nursing*, 16(11), 658-53. doi:10.12968/bjon.2007.16.11.23681
- Cox, N. J. (2007). Speaking Stata: Turning over a new leaf. *The Stata Journal*, 7(3), 413-433.
- Cramer, E., & Hunter, B. (2019). Relationships between working conditions and emotional wellbeing in midwives. *Women & Birth*, 32(6), 521-532. doi:10.1016/j.wombi.2018.11.010
- Creedy, D. K., Sidebotham, M., Gamble, J., Pallant, J., & Fenwick, J. (2017). Prevalence of burnout, depression, anxiety and stress in Australian midwives: a cross-sectional survey. *BMC Pregnancy and Childbirth*, 17. 13. doi:10.1186/s12884-016-1212-5
- Creswell, J. W., & Creswell, J. D. (2018). *Research Design: Qualitative, Quantitative and Mixed Methods Approaches*. 5th Edition. Thousand Oaks: Sage Publications Inc.
- Czajka, J., & Beyler, A. (2016). *Declining Response Rates in Federal Surveys: Trends and Implications*. Washington: Mathematica Policy Research.
- Dale, C. M., & Logsdon, M. C. (2022). When is data too old to inform nursing science and practice? *Journal of Advanced Nursing*, 78(12), e155-e156. doi:10.1111/jan.15411
- Dall'Ora, C., Ball, J., Reinius, M., Griffiths, P. (2020). Burnout in nursing: a theoretical review. *Human Resources for Health*, 18(1). 41. doi:10.1186/s12960-020-00469-9
- Daly, D., Hannon, S., Brady, V. (2019). Motivators and challenges to research recruitment – A qualitative study with midwives. *Midwifery*, 74, 14-20. doi:10.1016/j.midw.2019.03.011
- Daniels, K., Connolly, S., Woodard, R., van Stolk, C., Patey, J., Fong, K., France, R., Vigurs, C., Herd, M. (2022). *NHS staff wellbeing: Why investing in organisational and management practices makes business sense - A rapid evidence review and economic analysis*. London: EPPI Centre, UCL Social Research Institute, University College London.

- Darling, E. K., Grenier, L. N., Mackenzie, R. K., Ramlogan-Salanga, C., Cates, E. C., Graybrook, R., Wilson-Mitchell, K. (2023). A mixed-method study exploring barriers and facilitators to midwives' mental health in Ontario. *BMC Women's Health*, 23(1). 155. doi:10.1186/s12905-023-02309-z
- Davidson, J. R., Book, S. W., Colket, L. A., Tupler, L. A., Roth, S., David, D., Feldman, M. E. (1997). Assessment of a new self-rating scale for post-traumatic stress disorder. *Psychological Medicine*, 27(1), 153-160. doi:10.1017/s0033291796004229
- Davies, A. (2019). Carrying out systematic literature reviews: an introduction. *British Journal of Nursing*, 28(15). 1008-1014. doi:10.12968/bjon.2019.28.15.1008
- Dawson, K., Newton, M., Forster, D., & McLachlan, H. (2018). Comparing caseload and non-caseload midwives' burnout levels and professional attitudes: A national, cross-sectional survey of Australian midwives working in the public maternity system. *Midwifery*, 63, 60-67. doi:10.1016/j.midw.2018.04.026
- de Koning, R., Egiz, A., Kotecha, J., Ciuculete, A. C., Ooi, S. Z., Bankole, N. D., Erhabor, J., Higginbotham, G., Khan, M., Dalle, D. U., Sichimba, D., Bandyopadhyay, S., Kanmounye, U. S. (2021). Survey Fatigue During the COVID-19 Pandemic: An Analysis of Neurosurgery Survey Response Rates. *Frontiers in Surgery*, 12(8), 690680. doi:10.3389/fsurg.2021.690680
- Denton, D., Newton, J., Bower, E. (2008). Occupational burnout and work engagement: a national survey of dentists in the United Kingdom. *British Dental Journal*, 205(7), E13; discussion 382-3. doi:10.1038/sj.bdj.2008.654
- Department of Health. (2005). *Research Governance Framework for Health and Social Care*. (2). London: Department of Health. Retrieved from http://www.dh.gov.uk/en/Publicationsandstatistics/Publications/PublicationsPolicyAndGuidance/DH_4108962
- DiGangi, J. A., Gomez, D., Mendoza, L., Jason, L. A., Keys, C. B., Koenen, K. C. (2013). Pretrauma risk factors for posttraumatic stress disorder: A systematic review of the literature. *Clinical Psychology Review*, 33(6), 728-744. doi:10.1016/j.cpr.2013.05.002
- Dixon, W. J. (1960). Simplified Estimation from Censored Normal Samples. *The Annals of Mathematical Statistics*, 31(2), 385-391. <https://www.jstor.org/stable/2237953>
- Dodge, Y. (2008). Exploratory Data Analysis. In *The Concise Encyclopedia of Statistics*. New York: Springer. doi:https://doi.org/10.1007/978-0-387-32833-1_136

- Doncaster and Bassetlaw Teaching Hospitals. (2022, December 20). Local hospitals launch staff wellbeing initiative. Retrieved from DBTH News: <https://www.dbth.nhs.uk/news/local-hospitals-launch-staff-wellbeing-initiative/>
- Drolet, M. J., Rose-Derouin, E., Leblanc, J. C., Ruest, M., Williams-Jones, B. (2023). Ethical Issues in Research: Perceptions of Researchers, Research Ethics Board Members and Research Ethics Experts. *Journal of Academic Ethics*, 21(2), 629-292. doi:10.1007/s10805-022-09455-3
- Duan, B. (1998). The robustness of trimming and Winsorization when the population distribution is skewed. New Orleans: Tulane University ProQuest Dissertations & Theses.
- Duran, A., Extremera, N., Rey, L. (2004). Engagement and Burnout: Analysing Their Association Patterns. *Psychological Reports*, 94(3 Pt 1), 1048-1050. doi:10.2466/pr0.94.3.1048-1050
- Duyx, B., Urlings, M. J., Swaen, G. M., Bouter, L. M., & Zeegers, M. P. (2017). Scientific citations favor positive results: a systematic review and meta-analysis. *Journal of Clinical Epidemiology*, 88, 92-101. doi:10.1016/j.jclinepi.2017.06.002
- Edelwich, J., & Brodsky, A. (1980). *Burn-Out - Stages of Disillusionment in the Helping Professions*. New York: Human Sciences Press.
- Eggleston, J. (2024). Frequent Survey Requests and Declining Response Rates: Evidence from the 2020 Census and Household Surveys. *Journal of Survey Statistics and Methodology*, 12(5), 1138-1156. doi:10.1093/jssam/smae022
- Ellis, L. A., Pomare, C., Churrua, K., Carrigan, A., Meulenbroeks, I., Saba, M., Braithwaite, J. (2022). Predictors of response rates of safety culture questionnaires in healthcare: a systematic review and analysis. *BMJ Open*, 12(9), e065320. doi:10.1136/bmjopen-2022-065320
- Elmir, R., Pangas, J., Dahlen, H., Schmied, V. (2017). A meta-ethnographic synthesis of midwives' and nurses' experiences of adverse labour and birth events. *Journal of Clinical Nursing*, 26(23-24), 4184-4200. doi:10.1111/jocn.13965
- Elsevier. (2017). *Ethics in Research & Publication, Factsheet: Salami Slicing*. Retrieved March 23, 2025, from: Elsevier Research Academy.: https://researcheracademy.elsevier.com/uploads/2018-02/2017_ETHICS_SS02.pdf
- Encyclopedia Britannica. (2025, February 13). Arab-Israeli wars. Retrieved March 29, 2025, from Encyclopedia Britannica: <https://www.britannica.com/event/Arab-Israeli-wars>

- Endjala, T., Amukugo, H. J., Ngitanwa, E. M. (2021). Post-Traumatic Stress Disorder among midwives after exposure to maternal death and stillbirth in Khomas Region of Namibia. *International Journal of Healthcare*, 7(2), 7. doi:10.5430/ijh.v7n2p7
- Engelbrecht, M. C., Bester, C. I., Ven De Berg, H., Van Rensburg, H. C. (2008). A Study of Predictors and Levels of Burnout: The Case of Professional Nurses in Primary Health Care Facilities in the Free State. *South African Journal of Economics*, 76(1), S15-S27. doi: 10.1111/j.1813-6982.2008.00164.x
- Enyon, R., Fry, J., Schroeder, R. (2011). The ethics of internet research. In R. Fielding, M. Lee, & G. Blank (Eds.), *The SAGE handbook of online research* (pp. 22-41). London: SAGE.
- Esfahani, M. S., Mirazee, M., Boroumandfar, K., Abedi, M. R. (2012). Job burnout and its relation with personality traits among the midwives working in Isfahan, Iran. *Iranian Journal of Nursing and Midwifery Research*, 17(3), 220-224. <https://pmc.ncbi.nlm.nih.gov/articles/PMC3696215/>
- European Journal of Midwifery. (2025). European Journal of Midwifery Instructions to Authors. Retrieved March 22, 2025, from European Journal of Midwifery: <https://www.europeanjournalofmidwifery.eu/Instructions-to-Authors,456.html>
- Fang, Y., Tang, X., Salmela-Aro, K. (2024). Early career gender differences in job burnout trajectories in Finland: Roles of work, family, and financial resources. *International Journal of Behavioral Development*, 48(5). 450-461. doi:10.1177/01650254241266107
- Favrod, C., Jan du Chêne, L., Soelch, C. M., Garthus-Niegel, S., Tolsa, J., Legault, F., Briet, V., Horsch, A. (2018). Mental Health Symptoms and Work-Related Stressors in Hospital Midwives and NICU Nurses: A Mixed Methods Study. *Frontiers in Psychiatry*, 9. 364. doi:10.3389/fpsy.2018.00364
- Feng, Y., & Cui, J. (2024). Emotional Exhaustion and Emotional Contagion: Navigating Turnover Intention of Healthcare Personnel. *Journal of Multidisciplinary Healthcare*, 17, 1731-1742. doi:10.2147/JMDH.S460088
- Fenwick, J., Sidebotham, M., Gamble, J., & Creedy, D. K. (2018). The emotional and professional wellbeing of Australian midwives: A comparison between those providing continuity of midwifery care and those not providing continuity. *Women and Birth*, 31(1), 38-43. doi:10.1016/j.wombi.2017.06.013
- Filby, A., McConville, F., Portela, A. (2016). What Prevents Quality Midwifery Care? A Systematic Mapping of Barriers in Low and Middle Income Countries from the Provider Perspective. *PLOS One*, 2(11), e0153391. doi:10.1371/journal.pone.0153391

Fisher, R. A. (1935). *The Design of Experiments*. New York: Hafner Press.

Flicker, S., Haans, D., & Skinner, H. (2004). Ethical dilemmas in research on internet communities. *Qualitative Health Research*, 14(1), 124-134. doi:10.1177/1049732303259842

Flint, S. (2024). Big T's and Little t's: Utilizing Trauma-Focused CBT Strategies with Trauma of All Kinds. 35th Annual NYAR Conference (March 3-6, 2024). Savannah, Georgia: National Youth Advocacy & Resilience.

Form, A. F., Kelly, C. M., & Morgan, A. J. (2007). Participant distress in psychiatric research: a systematic review. *Psychological Medicine*, 37(7), 917-926. doi:10.1017/S0033291706009779

Francis, R. (2013). *Report of the Mid Staffordshire NHS Foundation Trust Public Inquiry*. London: The Stationery Office. <https://assets.publishing.service.gov.uk/media/5a7ba0faed915d13110607c8/0947.pdf>

Freedom of Information (Jersey) Law 2011, L.17/2011 (The Royal Court 2011).

Freedom of Information Office. (2024, July 1). Late stage pregnancies referred to Southampton Hospital (FOI). Retrieved September 5, 2024, from Gov.Je Freedom of Information: <https://www.gov.je/government/freedomofinformation/pages/foi.aspx?ReportID=7541>

Freedom of Information office. (2024b, January 15). Massive Obstetric Haemorrhage numbers (FOI). Retrieved September 8, 2024, from Gov.Je Freedom of Information: <https://www.gov.je/Government/FreedomOfInformation/pages/foi.aspx?ReportID=7077>

Freud, A. (1964). Comments on psychic trauma. In A. Freud (Eds.), *The writings of Anna Freud* (pp. 221-241). New York: NY: International Universities Press.

Freudenberger, H. J. (1974). Staff Burn-Out. *Journal of Social Issues*, 30(1), 159-165. doi: 10.1111/j.1540-4560.1974.tb00706.x

Fumagalli, S., Panzeri, M., Borrelli, S., Ornaghi, S. (2024). Midwives' stress and burnout during the Omicron wave in Italy: An observational survey. *Journal of Advanced Nursing*, 80(11), 4510-4522. doi:10.1111/jan.16065

Fung, W. K. (1991). A statistical-test-complemented graphical method for detecting multiple outliers in two-way tables. *Journal of Applied Statistics*, 18(2), 265-274. doi:10.1080/02664769100000020

Garrett, C. (2008). The Effect of Nurse Staffing Patterns on Medical Errors and Nurse Burnout. *AORN Journal*, 87(6), 1191-1204. doi:10.1016/j.aorn.2008.01.022.

- Garrosa, E., Moreno-Jimenez, B., Liang, Y., & Gonzalez, J. L. (2008). The relationship between socio-demographic variables, job stressors, burnout, and hardy personality in nurses: An exploratory study. *International Journal of Nursing Studies*, 45(3), 418-427. doi:10.1016/j.ijnurstu.2006.09.003
- Gebriné, K. E., Lampek, K., Sárváry, A., Sárváry, A., Takács, P., Zrínyi, M. (2019). Impact of sense of coherence and work values perception on stress and self-reported health of midwives. *Midwifery*, 77, 9-15. doi:10.1016/j.midw.2019.06.006.
- Geisser, S. (1987). Influential observations, diagnostics and discovery tests. *Journal of Applied Statistics*, 14(2), 133-142. doi:10.1080/02664768700000017
- Gelinas, L., Pierce, R., Winkler, S., Cohen, I. G., Lynh, H. F., Bierer, B. E. (2017). Using social media as a research recruitment tool: Ethical issues and recommendations. *The American Journal of Bioethics*, 17(3), 3-14. doi:10.1080/15265161.2016.1276644
- Gentles, N. (2015). Appreciating the Research Process in Nursing. *Brighton Journal of Research in Health Sciences*, 2(1). <https://blogs.brighton.ac.uk/bjrhs/2015/05/14/appreciating-the-research-process-in-nursing/>
- Georgescu, T., Nedelcea, C., Gorbănescu, A., Papasteri, C., Cosmoiu, A. M., Vasile, D. L., Letzner, R. D. (2024). Psychometric evaluation of the PCL-5: assessing validity, diagnostic utility, and bifactor structures. *European Journal of Psychotraumatology*, 15(1), 2333222. doi:10.1080/20008066.2024.2333222
- Ghafourifard, M. (2024). Survey Fatigue in Questionnaire Based Research: The Issues and Solutions. *Journal of Caring Sciences*, 13(4), 214-215. doi:10.34172/jcs.33287
- Ghag, K., Winter, C., Draycott, T. (2020). 29 Obstetric emergencies. In S. Arulkumaran, W. Ledger, L. Denny, & S. Doumouchsis (Eds.), *Oxford Textbook of Obstetrics and Gynaecology* (pp. 358-373). Oxford: Oxford University Press.
- Ghavidel, F., Fallahi-Khoshknab, M., Molavynejad, S., Zarea, K. (2019). The role of organizational factors in nurse burnout: Experiences from Iranian nurses working in psychiatric wards. *Journal of Family Medicine and Primary Care*, 8(12), 3893-3899. doi:10.4103/jfmpc.jfmpc_615_19.
- Gibbert, M., Nair, L. B., Weiss, M., & Hoegl, M. (2021). Using Outliers for Theory Building. *Organizational Research Methods*, 24(1), 172-181. doi:10.1177/1094428119898877

- Golzar, J., Noor, S., Tajik, O. (2022). Convenience Sampling. *International Journal of Education and Language Studies*, 1(2), 72-77. doi:10.22034/ijels.2022.162981
- GOV.UK. (2023, April 13). NHS workforce. Ethnicity Facts and Figures. <https://www.ethnicity-facts-figures.service.gov.uk/workforce-and-business/workforce-diversity/nhs-workforce/latest/>
- Government of Jersey. (2018). The Data Protection (Jersey) Law 2018. St Helier: Government of Jersey. Retrieved from <https://www.jerseylaw.je/laws/current/Pages/15.240.aspx>
- Government of Jersey. (2020, July 20th). Air Ambulance agreement transferred to Gama Aviation. <https://www.gov.je/News/2020/pages/airambulancelgama.aspx>
- Government of Jersey. (2023, March 23rd). Crude birth rate. Retrieved from OpenData.gov.je: https://opendata.gov.je/dataset/births/resource/d567d33c-a776-4a2a-aaf3-9a38a88dbc33?_gl=1*3cz3bn*_ga*ODUwNjY3MjluMTcwODU5NDIxOQ..*_ga_07GM08Q17P*MTcxMzk1NTA1OC4yMC4xLjE3MTM5NTUwNTguMC4wLjA.
- Government of Jersey. (2024). Births and Fertility. Government of Jersey. Retrieved April 26, 2025, from <https://www.gov.je/StatisticsPerformance/Health/pages/birthsandfertility.aspx>
- Government of Jersey. (2024b). About the Jersey Census. Retrieved August 3, 2024, from gov.je: <https://www.gov.je/StatisticsPerformance/Population/pages/aboutcensus.aspx>
- Government of Jersey. (n.d.). The Maternity Unit. Government of Jersey. Retrieved August 10, 2024, from <https://www.gov.je/Health/PregnancyAndBirth/GivingBirth/pages/maternityunit.aspx>
- Government of Jersey. (n.d.b). Our consultants. Government of Jersey. Retrieved April 29th, 2024, from <https://www.gov.je/Health/Hospitals/HospitalDepartments/JerseyPrivatePatients/Consultants/Pages/OurConsultants.aspx>
- Government of Jersey. (n.d.c). Specialist care off-Island. Government of Jersey. Retrieved April 29th, 2024, from <https://www.gov.je/Health/PregnancyAndBirth/ScansAppointments/Pages/SpecialistCareOffIsland.aspx>
- Government of the United Kingdom. (2018). Data Protection Act 2018. London: The Government of the United Kingdom. Retrieved from <https://www.legislation.gov.uk/ukpga/2018/12/contents>

- Grant, C., & Osanloo, A. (2014). Understanding, Selecting, and Integrating a Theoretical Framework in Dissertation Research: Creating the Blueprint for Your "House". *Administrative Issues Journal: Connecting Education, Practice, and Research*, 4(2), 12-26. doi:10.5929/2014.4.2.9
- Gress, T. W., Denvir, J., Shapiro, J. I. (2018). Effect of removing outliers on statistical inference: implications to interpretation of experimental data in medical research. *Marshall Journal of Medicine*, 4(2), 9. doi:10.18590/mjm.2018.vol4.iss2.9
- Grubbs, F. E. (1950). Sample criteria for testing outlying observations. *The Annals of Mathematical Statistics*, 21(1), 27-58. <https://www.jstor.org/stable/2236553>
- Guan, N., Guariglia, A., Moore, P., Xu, F., Al-Janabi, H. (2022). Financial stress and depression in adults: A systematic review. *PLOS ONE*, 17(2), e0264041. doi:10.1371/journal.pone.0264041
- Guba, E. G., & Lincoln, Y. S. (1994). Competing paradigms in qualitative research. In N. K. Denzin, & Y. S. Lincoln (Eds.), *Handbook of Qualitative Research* (pp. 105-117). Thousand Oaks: Sage Publications Inc.
- Gupta, S. N. (2011). Mean, Median, Mode: An Introduction. In M. Lovric (Ed.), *International Encyclopedia of Statistical Science* (pp. 788-791). Berlin: Springer. doi:10.1007/978-3-642-04898-2_353
- Gyorffy, Z., Birkas, E., Sandor, I. (2016). Career motivation and burnout among medical students in Hungary - could altruism be a protection factor? *BMC Medical Education*, 16(182). doi:10.1186/s12909-016-0690-5
- Hackshaw, A. (2008). Small studies: strengths and limitations. *European Respiratory Journal*, 32(5), 1141-1143. doi:10.1183/09031936.00136408
- Haddaway, N. R., Page, M. J., Pritchard, C. C., McGuinness, L. A. (2022). PRISMA2020: An R package and Shiny app for producing PRISMA 2020-compliant flow diagrams, with interactivity for optimised digital transparency and Open Synthesis. *Campbell Systematic Reviews*, 18(2), e1230. doi:10.1002/cl2.1230
- Hadžibajramović, E., Schaufeli, W., De Witte, H. (2022). Shortening of the Burnout Assessment Tool (BAT)—from 23 to 12 items using content and Rasch analysis. *BMC Public Health*, 22(1), 560. doi:10.1186/s12889-022-12946-y
- Hales, A. H. (2016). Does the conclusion follow from the evidence? Recommendations for improving research. *Journal of Experimental Social Psychology*, 66, 39-46. doi:10.1016/j.jesp.2015.09.011

- Hall, L. H., Johnson, J., Watt, I., Tsipa, A., O'Connor, D. B. (2016). Healthcare Staff Wellbeing, Burnout, and Patient Safety: A Systematic Review. *PLOS One*, 8(11), e0159015. doi:10.1371/journal.pone.0159015
- Halperin, O., Idilbi, N., Robes, D., Biderman, S. N., Malka-Zeevi, H., Green, G. (2024). Predicting post-traumatic stress disorder: The complex relationship between burnout, intentions to leave and emotional support among health care professionals. *Nursing Outlook*, 72(2) 102134. doi:10.1016/j.outlook.2024.102134
- Han, Y., Karmur, B., Kulkarni, A. (2020). Comparing Effects of Treatment: Controlling for Confounding. *Neurosurgery*, 86(3), 325-331. doi:10.1093/neuros/nyz509
- Harris, A. D., McGregor, J. C., Perencevich, E. N., Furuno, J. P., Zhu, J., Peterson, D. E., Finkelstein, J. (2006). The Use and Interpretation of Quasi-Experimental Studies in Medical Informatics. *Journal of the American Medical Informatics Association*, 13(1), 16-23. doi:10.1197/jamia.M1749
- Harrison, S., Alderdice, F., Henderson, J., Redshaw, M., Quigley, M. A. (2020). Trends in response rates and respondent characteristics in five National Maternity Surveys in England during 1995-2018. *Archives of Public Health*, 25(78), 46. doi:10.1186/s13690-020-00427-w
- Hauke, J., & Kossowski, T. (2011). Comparison of Values of Pearson's and Spearman's Correlation Coefficients on the Same Sets of Data. *Quaestiones Geographicae*, 30(2), 87-93. doi:10.2478/v10117-011-0021-1
- Health and Social Security Scrutiny Panel. (2021). Review of Maternity Services. St Helier: States Greffe, Government of Jersey. Retrieved from <https://statesassembly.gov.je/ScrutinyReports/2021/Report%20-%20Review%20of%20Maternity%20Services%20-%206%20July%202021.pdf>
- Heazell, A. E., Green, M., Wright, C., Flenady, V., Frederik Frøen, J. (2008). Midwives' and obstetricians' knowledge and management of women presenting with decreased fetal movements. *Acta Obstetrica Et Gynecologica Scandinavica*, 87, 331–339. doi:10.1080/00016340801902034
- Henriksen, L., & Lukasse, M. (2016). Burnout among Norwegian midwives and the contribution of personal and work-related factors: A cross-sectional study. *Sexual & Reproductive Healthcare*, 9, 42-47. doi:10.1016/j.srhc.2016.08.001
- Hewitt, J., Wilson, M., Bonner, A., & Bloomer, M. J. (2024). Factors That Influence Access to Medical Assistance in Dying Services: An Integrative Review. *Health Expectations*, 27(5). e70058. doi:10.1111/hex.70058

- Higgins, J. P., Thomas, J., Chandler, J., Cumpston, M., Li, T., Page M, J., Welch, V. A. (2024). M. Cumpston, T Li, M.J. Page, V.A. Welch (Eds). *Cochrane Handbook for Systematic Reviews of Interventions* version 6.5 (updated August 2024). Cochrane Training. <https://training.cochrane.org/handbook/PDF/v6.4>
- Hildingsson, I., Westlund, K., & Wiklund, I. (2013). Burnout in Swedish midwives. *Sexual & Reproductive Healthcare*, 4(3), 87-91. doi:10.1016/j.srhc.2013.07.001
- Hildingsson, I., Fahlbeck, H., Larsson, B., & Johansson, M. (2024). Increasing levels of burnout in Swedish midwives – A ten-year comparative study. *Women and Birth*, 37(2), 325-331. doi:10.1016/j.wombi.2023.10.010
- Hill, C. A., Fahrney, K., Wheeless, S. C., Carson, C. P. (2006). Survey Response Inducements for Registered Nurses. *Western Journal of Nursing Research*, 28(3), 261-358. doi:10.1177/0193945905284723
- Hiller, J. (2016). Epistemological Foundations of Objectivist and Interpretivist Research. In B. L. Wheeler, & K. M. Murphy (Eds.) *Music Therapy Research: Third Edition* (pp. 99-127). Dallas: Barcelona Publishers.
- Hodge, V., & Austin, J. (2004). A Survey of Outlier Detection Methodologies. *Artificial Intelligence Review*, 22, 85-126. doi:10.1023/B:AIRE.0000045502.10941.a9
- Holden, M., & Lynch, P. (2004). Choosing the Appropriate Methodology: Understanding Research Philosophy. *The Marketing Review*, 4(4), 397-409. doi:10.1362/1469347042772428
- Holmen, H., Riiser, K., Winger, A. (2020). Home-Based Pediatric Palliative Care and Electronic Health: Systematic Mixed Methods Review. *Journal of Medical Internet Research*, 22(2), e16248. doi:10.2196/16248
- House of Commons Health and Social Care Committee. (2021). *Workforce burnout and resilience in the NHS and social care. Second Report of Session 2021–22*. London: House of Commons.
- Human Rights Act 1998. Retrieved from <https://www.legislation.gov.uk/ukpga/1998/42/contents>
- Hunter, B., Fenwick, J., Sidebotham, M., Henley, J. (2019). Midwives in the United Kingdom: Levels of burnout, depression, anxiety and stress and associated predictors. *Midwifery*, 79, 102526. doi:<https://linkinghub.elsevier.com/retrieve/pii/S0266613819302128>
- Idsoe, T., Dyregov, A., Idsoe, E. C. (2012). Bullying and PTSD symptoms. *Journal of Abnormal Child Psychology*, 40(6), 901-911. doi:10.1007/s10802-012-9620-0
- Illowsky, B., & Dean, S. (2013). *Introductory Statistics*. Houston: OpenStax.

- Ioannidis, Y. (2003). The History of Histograms (abridged). In J. Freytag, P. Lockemann, S. Abiteboul, M. Carey, P. Selinger, & A. Heuer (Eds.), *Proceedings 2003 VLDB Conference* (pp. 19-30). Burlington: Morgan Kaufmann. doi:10.1016/B978-012722442-8/50011-2
- Islamiyah, H. S., Febriyana, N., Jayanti, R. D. (2023). Factors related to burnout incidence in midwives during the Covid-19 pandemic. *Indonesian Midwifery and Health Sciences Journal*, 7(2). 142-152. doi:10.20473/imhsj.v7i2.2023.142-152
- Israel, G. D. (2009). *Determining Sample Size*. Gainesville: University of Florida, Agricultural Education and Communication Department. <https://www.psychosphere.com/Determining%20sample%20size%20by%20Glen%20Israel.pdf>
- Jaffe, A. E., DiLillo, D., Hoffman, K., Haikalis, M., Dykstra, R. E. (2015). Does it hurt to ask? A meta-analysis of participant reactions to trauma research. *Clinical Psychology Review*, 40, 40-56. doi:10.1016/j.cpr.2015.05.004
- Jagadish, H. V., Jin, H., Ooi, B. C., & Tan, K. (2001). Global Optimization of Histograms. *ACM SIGMOD Record*, 30(2), 223-234. doi:10.1145/376284.37568
- Jain, R. B. (2010). A recursive version of Grubbs' test for detecting multiple outliers in environmental and chemical data. *Clinical Biochemistry*, 43(12), 1030-1033. doi:10.1016/j.clinbiochem.2010.04.071
- Janssen, P. P., Schaufelie, W. B., Houkes, I. (1999). Work-related and individual determinants of the three burnout dimensions. *Work & Stress*, 13(1), 74-86. doi:10.1080/026783799296200
- Jensen, H. A., Lau, C. J., Davidsen, M., Fèveile, H. B., Christensen, A. I., Ekholm, O. (2022). The impact of non-response weighting in health surveys for estimates on primary health care utilization. *European Journal of Public Health*, 32(3), 450-455. doi:10.1093/eurpub/ckac032
- Jepsen, I., Juul, S., Foureur, M., Sørensen, E. E., Nøhr, E. A. (2017). Is caseload midwifery a healthy work-form? – A survey of burnout among midwives in Denmark. *Sexual & Reproductive Healthcare*, 11, 102-106. doi:10.1016/j.srhc.2016.12.001
- Johnson, B., & Gray, R. (2010). A history of philosophical and theoretical issues for mixed methods research. In A. Tashakkori, & C. Teddlie (Eds.), *SAGE Handbook of Mixed Methods in Social & Behavioral Research*. SAGE Publications. doi:10.4135/9781506335193
- Jordan, K., Fenwick, J., Slavin, V., Sidebotham, M., Gamble, J. (2013). Level of burnout in a small population of Australian midwives. *Women and Birth*, 26(1), 125-132. doi: 10.1016/j.wombi.2013.01.002

- Jorm, A. F., Kelly, C. M., Morgan, A. J. (2007). Participant distress in psychiatric research: a systematic review. *Psychological Medicine*, 37(7), 917-296. doi:10.1017/S0033291706009779
- Jung, S. (2014). Stratified Fisher's exact test and its sample size calculation. *Biometrical Journal*, 56(1), 129-140. doi:10.1002/bimj.201300048
- Kaplan, J. J., Gabrosek, J. G., Curtiss, P., Malone, C. (2014). Investigating student understanding of histograms. *Journal of Statistics Education*, 22(2). doi:10.1080/10691898.2014.11889701
- Kaur, P., Stoltzfus, J., & Yellapu, V. (2018). Descriptive statistics. *International Journal of Academic Medicine*, 4(1), 60-63. doi:10.4103/IJAM.IJAM_7_18
- Keller, H. E., & Lee, S. (2010). Ethical issues surrounding human participants research using the internet. *Ethics & Behaviour*, 13(3), 211-219. doi:10.1207/S15327019EB1303_01
- Kellerman, S. E., & Harold, J. (2001). Physician response to surveys. A review of the literature. *American Journal of Preventive Medicine*, 20(1), 61-67. doi:10.1016/s0749-3797(00)00258-0
- Kelly, J., Sadeghieh, T., Adeli, K. (2014). Peer Review in Scientific Publications: Benefits, Critiques, & A Survival Guide. *The electronic Journal of the International Federation of Clinical Chemistry and Laboratory Medicine*, 25(3), 227-243. <https://pmc.ncbi.nlm.nih.gov/articles/PMC4975196/>
- Kerkman, T., Dijkman, L. M., Baas, M. A., Evers, R., Pampus, M. G., Stramrood, C. A. (2019). Traumatic Experiences and the Midwifery Profession: A Cross-Sectional Study Among Dutch Midwives. *Journal of Midwifery & Women's Health*, 64(4), 435-442. doi:10.1111/jmwh.12946
- Khakbazan, Z., & Ebadi, A. (2019). Midwifery Professionalism: An Integrative Review. *Journal of Clinical and Diagnostic Research*, 13(3), LE01-LE08. doi:10.7860/JCDR/2019/38209.12654
- Khatri, K. K. (2020). Research Paradigm: A Philosophy of Educational Research. *International Journal of English Literature and Social Sciences*, 5(5), 1435-1440. doi: 10.22161/ijels.55.15
- Kim, H. (2017). Statistical notes for clinical researchers: Chi-squared test and Fisher's exact test. *Open lecture on statistics*, 42(2), 152-155. doi:10.5395/rde.2017.42.2.152
- Kinman, G., Teoh, K., & Harriss, A. (2020). *The Mental Health and Wellbeing of Nurses and Midwives in the United Kingdom*. London: The Society of Occupational Medicine.

- Kiss, Z. S., Vitrai, J., Dio, M., Kremer, I. L., Adam, S. (2024). High prevalence of burnout among midwives in Hungary: High job demands and low resources as potential persistent stressors, a focus on prevention. *Heliyon*, 10(2), e24495. doi:10.1016/j.heliyon.2024.e24495
- Kitchin, H. A. (2007). *Research ethics and the internet: Negotiating Canada's Tri-Council policy statement*. Halifax & Winnipeg: Fernwood.
- Knaflic, C. N. (2015). *Storytelling with Data: A Data Visualisation Guide for Business Professionals*. Hoboken: Wiley.
- Knudson, D. V., & Lindsey, C. (2014). Type I and Type II Errors in Correlations of Various Sample Sizes. *Comprehensive Psychology*, 3. doi:10.2466/03.CP.3.1
- Koerber, A., & McMichael, L. (2008). Qualitative sampling methods: A primer for technical communicators. *Journal of Business and Technical Communication*, 22(4), 454-473. doi:10.1177/105065190832036
- Kokic, P. N., & Bell, P. A. (1994). Optimal Winsorizing Cutoffs for a Stratified Finite Population Estimator. *Journal of Official Statistics*, 10(4), 419. <https://www.proquest.com/scholarly-journals/optimal-winsorizing-cutoffs-stratified-finite/docview/1266818599/se-2>
- Kolstoe, S. E. (2023). Why authors of research papers must provide evidence of ethical research practice. *Heliyon*, 9(10), e20476. doi:10.1016/j.heliyon.2023.e20476
- Kristensen, T. S. (2019, August). Scores for the three scales of the Copenhagen Burnout Inventory (CBI) in a number of populations. Squarespace.
https://www.google.com/url?sa=t&rct=j&q=&esrc=s&source=web&cd=&ved=2ahUKEwjxts-Lo_aMAxXjU0EAHX07MAsQFnoECBYQAw&url=https%3A%2F%2Fstatic1.squarespace.com%2Fstatic%2F5e5884c1459d9a210f44e9aa%2Ft%2F603ee6c3aef8030d8d79b1f0%2F1614735044760%2FInformation%2Bsheet%2Bon%2BCBI.docx%23%3A~%3Atext%3DFor%2520adults%2520outside%2520the%2520labor%2Cpoints%2520for%2520client%252Drelated%2520burnout.&usg=AOvVaw3FaBT4hsGk6tNChxIYjf1u&cshid=1745690352882017&opi=89978449
- Kristensen, T. S., Borritz, M., Villadsen, E., Christensen, K. B. (2005). The Copenhagen Burnout Inventory: A new tool for the assessment of burnout. *Work & Stress*, 19(3), 192-207.
doi:10.1080/02678370500297720
- Kronthaler, F. (2023). Charts: The Possibility to Display Data Visually. In: *Statistics Applied With Excel: Data Analysis Is (Not) an Art* (pp. 53-74). Berlin: Springer. doi:10.1007/978-3-662-64319-8_5

- Kubota, A., & Horiuchi, S. (2022). Traumatic stress experienced by Japanese midwives and its relation to burnout and work engagement. *Japan Journal of Nursing Science*, 20(1), e12505.
doi:10.1111/jjns.12505
- Kumari, A., Siddharth, S., Piyush, R., Sakshi, C., Tanveer, K., Upendra, B., Avinash, C., Kamal Bandhu, K. (2022). Interventions for workplace violence against health-care professionals: A systematic review. *Work*, 73(2), 415-427. doi:10.3233/WOR-210046
- Kwak, S. K., & Kim, J. H. (2017). Statistical data preparation: management of missing values and outliers. *Korean Journal of Anesthesiology*, 70(4), 407-411. doi:10.4097/kjae.2017.70.4.407
- Labott, S. M., Johnson, T. P., Fendrich, M., & Feeny, N. C. (2013). Emotional risks to respondents in survey research. *Journal of Empirical Research on Human Research Ethics*, 8(4), 53-66.
doi:10.1525/jer.2013.8.4.53
- Langelaan, S., Bakker, A. B., van Doornen, L. J., Schaufeli, W. B. (2006). Burnout and work engagement: Do individual differences make a difference? *Personality and Individual Differences*, 40(3), 521-532.
doi:10.1016/j.paid.2005.07.009
- Largent, E. A., & Fernandez Lynch, A. (2017). Paying Research Participants: Regulatory Uncertainty, Conceptual Confusion, and a Path Forward. *Yale Journal of Health Policy*, 17(1), 61-141.
<https://pmc.ncbi.nlm.nih.gov/articles/PMC5728432/>
- Lazarides, A. L., Belay, E. S., Anastasio, A. T., Cook, C. E., Anakwenze, O. A. (2021). Physician burnout and professional satisfaction in orthopedic surgeons during the COVID-19 Pandemic. *Work*, 69(1), 15-22.
doi:10.3233/WOR-205288
- Lee, B., Riche, N. H., Isenberg, P., & Carpendale, S. (2015). More Than Telling a Story: Transforming Data into Visually Shared Stories. *IEEE Computer Graphics and Applications*, 35(5), 84-90.
doi:10.1109/MCG.2015.99
- Lee, W., Veach, P. M., MacFarlane, I. M., & LeRoy, B. S. (2015b). Who is at Risk for Compassion Fatigue? An Investigation of Genetic Counselor Demographics, Anxiety, Compassion Satisfaction, and Burnout. *Journal of Genetic Counseling*, 24(2), 358-370. doi:10.1007/s10897-014-9716-5
- Leinweber, J., & Rowe, H. (2010). The costs of 'being with the woman': secondary traumatic stress in midwifery. *Midwifery*, 26(1), 76-87. doi:10.1016/j.midw.2008.04.003

- Leinweber, J., Creedy, D. K., Rowe, H., Gamble, J. (2017). Responses to birth trauma and prevalence of posttraumatic stress among Australian midwives. *Women and Birth*, 30(1), 40-45. doi:10.1016/j.wombi.2016.06.006
- Lent, J., & Schwartz, R. (2012). The Impact of Work Setting, Demographic Characteristics, and Personality Factors Related to Burnout Among Professional Counselors. *Journal of Mental Health Counseling*, 34(4), 355-372. doi:10.17744/mehc.34.4.e3k8u2k552515166
- Leys, C., Delacre, M., Mora, Y. L., Lakens, D., & Ley, C. (2019). How to Classify, Detect, and Manage Univariate and Multivariate Outliers, With Emphasis on Pre-Registration. *International Review of Social Psychology*, 32(1), 1-10. doi:10.5334/irsp.289
- Liao, H., & Li, Y. (2017). Outlier impact and accommodation on power. *Journal of Modern Applied Statistical Methods*, 16(1), 261-278. doi:10.17744/mehc.34.4.e3k8u2k552515166
- Limberg, D., Lambie, G., & Robinson, E. H. (2018). The Contribution of School Counselors' Altruism to Their Degree of Burnout. *Professional School Counseling*, 20(1), 127-138. doi:10.5330/1096-2409-20.1.127
- Limberg, D., Cook, C. A., Gonzales, S., McCartney, E., Romagnolo, S. (2021). Examining School Counselors' Wellness and its Contribution to their Levels of Altruism and Burnout. *Journal of School Counseling*, 19(24), 33. <https://eric.ed.gov/?id=EJ1325658>
- Linetsky, I., Grinberg, K., Granot, M. (2024). The role of self-criticism and self-compassion in the development of PTSD among midwives. *Midwifery*, 130, 103932. doi:10.1016/j.midw.2024.103932
- Lipiené Krémer, I., Dió, M., Vitrai, J., Soósné Kiss, Z. (2023). Burnout syndrome among Hungarian midwives in 2014 and 2022. *Hungarian Medical Journal*, 164(40), 1592-1599. doi:10.1556/650.2023.32884
- Lobmeier, J. (2010). Nonexperimental designs. In N. J. Salkind, *Encyclopedia of Research Design* (pp. 911-914). Thousand Oaks: SAGE Publications Inc. doi:10.4135/9781412961288
- Long, C. R., Purvis, R. S., Flood-Grady, E., Kimminau, K. S., Rhyne, R. L., Burge, M. R., Stewart, M. K., Jenkins, A. J., James, L. P., McElfish, P. A. (2019). Health researchers' experiences, perceptions and barriers related to sharing study results with participants. *Health Research Policy and Systems*, 17(1). 25. doi:10.1186/s12961-019-0422-5
- Lorber, M., & Dobnik, M. (2022). The Importance of Monitoring the Psychological Wellbeing and Mental Health of Nursing Staff for Sustainable Management. *Sustainability*, 14(14), 8300. doi:10.3390/su14148300

- Lowrance, W. W. (2012). *Privacy, Confidentiality, and Health Research*. New York: Cambridge University Press.
- Lupo, R., Lezzi, A., Conte, L., Santoro, P., Carvello, M., Artioli, G., Calabro, A., Caldararo, C., Botti, S., Carriero, M. C. (2021). Work environment and related burnout levels: survey among healthcare workers in two hospitals of Southern Italy. *Acta Biomedica*, 92(2), e2021009. doi:10.23750/abm.v92iS2.11307
- Lynn, P. (1996). Weighting for non-response. In R. Banks, A. Westlake, & C. Payne (Eds.), *Survey and Statistical Computing* (pp. 205-214). Amsterdam: North Holland.
- Macklin, R. (1989). The paradoxical case of payment as benefit to research subjects. *IRB: Ethics & Human Research*, 11(6), 1-3. doi:10.2307/3564182
- Maghera, A., Kahlke, P., Lau, A., Zeng, Y., Hoskins, C., Corbett, T., Manca, D., Lacaze-Masmonteil, T., Hemmings, D., Mandhane, P. (2014). You are how you recruit: a cohort and randomized controlled trial of recruitment strategies. *BMC Medical Research Methodology*, 14, 111. doi:10.1186/1471-2288-14-111
- Mair, P., & Wilcox, R. (2020). Robust statistical methods in R using the WRS2 package. *Behavior Research Methods*, 52, 464-488. doi:10.3758/s13428-019-01246-w
- Manzo, A. N., & Burke, J. M. (2012). Increasing Response Rate in Web-Based/Internet Surveys. In L. Gideon (Ed.), *Handbook of Survey Methodology for the Social Sciences* (pp. 327-343). New York: Springer. doi: 10.1007/978-1-4614-3876-2
- Marchand, A., Blank, M. E., Beauregard, N. (2018). Do age and gender contribute to workers' burnout symptoms? *Occupational Medicine*, 68(6), 405-411. doi:10.1093/occmed/kqy088
- Marín-González, E., Malmusi, D., Camprubí, L., Borrell, C. (2017). The Role of Dissemination as a Fundamental Part of a Research Project. *International Journal of Health Services*, 47(2), 258-276. doi:10.1177/0020731416676227
- Maslach, C., & Jackson, S. E. (1981). The measurement of experienced burnout. *Journal of Organizational Behaviour*, 2, 99-113. doi:10.1002/job.4030020205
- Maslach, C., & Leiter, M. P. (2016). Understanding the burnout experience: recent research and its implications for psychiatry. *World Psychiatry*, 15(2), 103-111. doi:10.1002/wps.20311

- Matthews, R. P., Hyde, R. L., Llewelyn, F., Shafiei, T., Newton, M. S., Forster, D. A. (2022). Who is at risk of burnout? A cross-sectional survey of midwives in a tertiary maternity hospital in Melbourne, Australia. *Women and Birth*, 35(6), e615-623. doi:10.1016/j.wombi.2022.02.010
- Maxwell, J. A. (2013). *Qualitative Research Design: An Interactive Approach* (3rd ed.). L. Bickman, & D. J. Rog, Eds. Los Angeles: SAGE.
- MBRRACE-UK. (2023). Maternal Mortality in the UK 2019-21: Surveillance and Epidemiology. In M. Knight, K. Bunch, A. Felker, R. Patel, R. Kotnis, S. Kenyon, & J. J. Kurinczuk (Eds.), *Saving Lives, Improving Mothers' Care: Lessons learned to inform maternity care from the UK and Ireland Confidential Enquiries into Maternal Deaths and Morbidity, 2019-21* (pp. 7-25). Oxford: National Perinatal Epidemiology Unit, University of Oxford. Retrieved September 7, 2024, from MBRRACE-UK: Mothers and Babies: Reducing Risk through Audits and Confidential Enquiries across the UK: https://www.npeu.ox.ac.uk/assets/downloads/mbrance-uk/reports/maternal-report-2023/MBRRACE-UK_Maternal_Compiled_Report_2023.pdf
- MBRRACE-UK. (2024, January 10th). Maternal mortality 2020-2022. MBRRACE-UK. Mothers and Babies: Reducing Risk through Audits and Confidential Enquiries across the UK. [https://www.npeu.ox.ac.uk/mbrance-uk/data-brief/maternal-mortality-2020-2022#:~:text=Maternal%20mortality%20rates%20UK%202020%2D2022,-Overall%20293%20women&text=Thus%2C%20in%20this%20triennium%20272,%25%20CI%2011.86%2D15.10\).](https://www.npeu.ox.ac.uk/mbrance-uk/data-brief/maternal-mortality-2020-2022#:~:text=Maternal%20mortality%20rates%20UK%202020%2D2022,-Overall%20293%20women&text=Thus%2C%20in%20this%20triennium%20272,%25%20CI%2011.86%2D15.10).)
- McCluskey, A., & Lalkhen, A. G. (2007). Statistics II: Central tendency and spread of data. *Continuing Education in Anaesthesia Critical Care & Pain*, 7(4), 127-30. doi:10.1093/bjaceaccp/mkm020
- McHugh, M. D., Aiken, L. H., Sloane, D. M., Windsor, C., Douglas, C., Yates, P. (2021). Effects of nurse-to-patient ratio legislation on nurse staffing and patient mortality, readmissions, and length of stay: a prospective study in a panel of hospitals. *The Lancet*, 397(10288), 1905-1913. doi:10.1016
- McHugh, M. L. (2013). The Chi-square test of independence. *Biochemia medica (Zagreb)*, 23(2), 143-149. doi:10.11613/bm.2013.018
- McNeely, S. (2012). Sensitive Issues in Surveys: Reducing Refusals While Increasing Reliability and Quality of Responses to Sensitive Survey Items. In L. Gideon (Ed.), *Handbook of Survey Methodology for the Social Sciences* (pp. 377-395). New York: Springer. doi:10.1007/978-1-4614-3876-2_22

- McPherson, K., Barnard, J. G., Tenney, M., Dorsey Holliman, B., Morrison, K., Kneeland, P., Lin, C., Moss, M. (2022). Burnout and the role of authentic leadership in academic medicine. *BMC Health Services Research*, 22, 627. doi:10.1186/s12913-022-08034-x
- McShane, B. B., Gal, D., Gelman, A., Robert, C., Tackett, J. L. (2019). Abandon Statistical Significance. *The American Statistician*, 73(1), 235-245. doi:10.1080/00031305.2018.1527253
- Meacham, S. J., & Buendia, E. (1999). Focus on Research: Modernism, Postmodernism, and Poststructuralism and Their Impact on Literacy. *Language Arts*, 76(6), 510-516. <https://www.jstor.org/stable/41483013>
- Mehra, R. (2023). Burnout Syndrome, Occupational Stress and Altruism among Nursing Profession. *Indian Journal of Health & Wellbeing*, 14(1), 29-32. <https://www.proquest.com/openview/8caf5d944cebf1a331bda63c259f5372/1?cbl=2032134&pq-origsite=gscholar>
- Mengistie, B. A., Azene, Z. N., Haile, T. T., Abiy, S. A., Abegaz, M. Y., Taye, E. B., Alemu, H. N., Demeke, M., Melese, M., Tsega, N. T., Aragaw, G. M. (2023). Work-related burnout and its associated factors among midwives working at public hospitals in northwest Ethiopia: a multi-centered study. *Frontiers in Psychiatry*, 14, e1256063. doi:10.3389/fpsyt.2023.1256063
- Meterko, M., Restuccia, J. D., Stolzmann, K., Mohr, D., Brennan, C., Glasgow, J., Kaboli, P. (2015). Response Rates, Nonresponse Bias, and Data Quality: Results from a National Survey of Senior Healthcare Leaders. *Public Opinion Quarterly*, 79(1), 130-144. doi:10.1093/poq/nfu052
- Meyer, V. M., Benjamins, S., El Moumni, M., Lange, J. F., & Pol, R. A. (2022). Global Overview of Response Rates in Patient and Health Care Professional Surveys in Surgery. A Systematic Review. *Annals of Surgery*, 275(1), e75-81. doi:10.1097/SLA.0000000000004078
- Meynaar, I. A., Ottens, T., Zegers, M., van Mol, M. M., van der Horst, I. C. (2021). Burnout, resilience and work engagement among Dutch intensivists in the aftermath of the COVID-19 crisis: A nationwide survey. *Journal of Critical Care*, 62, 1-5. doi:10.1016/j.jcrc.2020.11.010
- Microsoft 365. (n.d.) Get organized with Gantt chart templates. Retrieved December 13, 2023, from Microsoft 365: <https://create.microsoft.com/en-us/templates/gantt-charts>
- Mind Garden. (2025). Maslach Burnout Inventory™ (MBI). Retrieved March 3, 2025, from Mind Garden: <https://www.mindgarden.com/117-maslach-burnout-inventory-mbi>

- Miocević, M., Levy, R., Savord, A. (2020). The role of exchangeability in sequential updating of findings from small studies and the challenges of identifying exchangeable data sets. In R. van de Schoot, & M. Miocević (Eds.), *Small Sample Size Solutions: A Guide for Applied Researchers and Practitioners* (pp. 13-29). Oxon: Routledge.
- Mishna, F. (2012). *Bullying: A guide to research, intervention, and prevention*. Oxford: Oxford University Press.
- Mishra, P., Pandey, C. M., Singh, U., Keshri, A., Sabaretnam, M. (2019). Selection of appropriate statistical methods for data analysis. *Annals of Cardiac Anaesthesia*, 22(3), 297-301. doi:10.4103/aca.ACA_248_18
- Misra, S. (2012). Randomized double blind placebo control studies, the "Gold Standard" in intervention based studies. *Indian Journal of Sexually Transmitted Diseases and AIDS*, 33(2), 131-134. doi:10.4103/0253-7184.102130
- Miteu, G. D. (2024). Ethics in scientific research: a lens into its importance, history, and future. *Annals of Medicine and Surgery*, 86, 2395-2398. doi:10.1097/MS9.0000000000001959
- Mohrman, S. A., & Lawler, E. E. (2012). Generating knowledge that drives change. *Academy of Management Perspectives*, 26, 41-51. <https://www.jstor.org/stable/23208284>
- Mölenberg, F. J., de Vries, C., Burdof, A., van Lenthe, F. J. (2021). A framework for exploring non-response patterns over time in health surveys. *BMC Medical Research Methodology*, 21, 37. doi:10.1186/s12874-021-01221-0
- Molina-Praena, J., Ramirez-Baena, L., Gomez-Urquiza, J. L., Canadas, G. R., De la Fuente, E. I., & Canadas-De la Fuente, G. A. (2018). Levels of Burnout and Risk Factors in Medical Area Nurses: A Meta-Analytic Study. *International Journal of Environmental Research and Public Health*, 15(12), 2800. doi:10.3390/ijerph15122800
- Mollart, L., Newing, C., Foureur, M. (2009). Midwives' emotional wellbeing: impact of conducting a structured antenatal psychosocial assessment (SAPSA). *Women and Birth*, 22(3), 82-88. doi:10.1016/j.wombi.2009.02.001
- Mollart, L., Skinner, V. M., Newing, C., Foureur, M. (2013). Factors that may influence midwives work-related stress and burnout. *Women and Birth*, 26(1), 26-32. doi:10.1016/j.wombi.2011.08.002
- Moran, L., Foster, K., Bayes, S. (2023). What is known about midwives' well-being and resilience? An integrative review of the international literature. *Birth*, 50(4), 672-688. doi:10.1111/birt.12756

- Mumford, Z., & Nigam, Y. (2024). Maggots in Medicine: A Narrative Review Discussing the Barriers to Maggot Debridement Therapy and Its Utilisation in the Treatment of Chronic Wounds. *Journal of Clinical Medicine*, 22, 6746. doi:10.3390/jcm13226746
- National Academies of Sciences, Engineering, and Medicine. (2022). Understanding Ontologies, in R. M. Kaplan, & A. S. Beatty (Eds.) *Ontologies in the Behavioural Sciences: Accelerating Research and the Spread of Knowledge*, Washington DC: The National Academies Press. Retrieved from <https://www.ncbi.nlm.nih.gov/books/NBK584339/>
- National Commission for the Protection of Human Subjects of Biomedical and Behavioral Research. (1979). THE BELMONT REPORT - Ethical Principles and Guidelines for the Protection of Human Subjects of Research. U.S. Department of Health and Human Services. Retrieved from https://www.hhs.gov/ohrp/sites/default/files/the-belmont-report-508c_FINAL.pdf
- National Institute for Health and Care Excellence. (2015). Safe midwifery staffing for maternity settings. London: NICE.
- National Institute for Health and Care Excellence. (2023, December). When should I suspect post-traumatic stress disorder (PTSD)? NICE Clinical Knowledge Summaries. <https://cks.nice.org.uk/topics/post-traumatic-stress-disorder/diagnosis/diagnosis/>
- National Institute for Health and Care Excellence. (2023b, December). Post-traumatic stress disorder: How common is it? Retrieved April 22nd, 2024, from NICE Clinical Knowledge Summaries: <https://cks.nice.org.uk/topics/post-traumatic-stress-disorder/background-information/prevalence/>
- National Institute for Health and Care Excellence. (2023c, September 29). Intrapartum care: management of postpartum haemorrhage. Retrieved September 8, 2024, from Intrapartum care: <https://www.nice.org.uk/guidance/ng235/documents/supporting-documentation-7>
- NHS. (2024). NHS Hospital and Community Health Services (HCHS): HCHS staff, excluding medical staff, by staff group, Agenda for Change band and spine point, in NHS Trusts and other core organisations, as at 31 March 2023, headcount. NHS England Digital. https://digital.nhs.uk/binaries/content/assets/website-assets/supplementary-information/supplementary-info-2024/hchs-staff-by-staff-group-afc-band-and-spine-point-march-2023_ah4721.xlsx
- NHS Employers. (2025, February 25). Rest, Rehydrate, Refuel Project. Retrieved from NHS Employers: <https://www.nhsemployers.org/case-studies/rest-rehydrate-refuel-project>

NHS England. (2024, January 25). Record number of nurses and midwives working in NHS. NHS England: <https://www.england.nhs.uk/2024/01/record-number-of-nurses-and-midwives-working-in-nhs/>

NHS Health Research Authority. (2024). GDPR guidance for researchers and study coordinators. Retrieved August 7, 2024, from NHS Health Research Authority: <https://www.hra.nhs.uk/planning-and-improving-research/policies-standards-legislation/data-protection-and-information-governance/gdpr-guidance/>

NHS Isle of Wight. (2021). Annual Report and Accounts 2020/21. Newport: Isle of Wight NHS. Retrieved April 26th, 2024, from <https://www.iow.nhs.uk/about-us>

Nightingale, S., Spiiby, H., Sheen, K., Slade, P. (2018). Posttraumatic stress symptomatology following exposure to perceived traumatic perinatal events within the midwifery profession: The impact of trait emotional intelligence. *Journal of Advanced Nursing*, 74(9), 2115-2125. doi:10.1111/jan.13719

NIST/SEMATECH. (2012). Histogram Interpretation: Skewed (Non-Normal) Right. In NIST/SEMATECH e-Handbook of Statistical Methods, doi:10.18434/M32189
<https://www.itl.nist.gov/div898/handbook/eda/section3/eda33a6.htm>

Nursing and Midwifery Council. (2018). The Code. London: NMC.

Nursing and Midwifery Council. (2021, June 8th). NMC comments on the "Workforce burnout and resilience in the NHS and social care" report. NMC. <https://www.nmc.org.uk/news/news-and-updates/health-social-care-burnout-comment/>

Nursing and Midwifery Council. (2023, June 23rd). NMC responds to GMC findings around medical workforce pressures. NMC. <https://www.nmc.org.uk/news/news-and-updates/nmc-responds-to-gmc-findings-around-medical-workforce-pressure/>

Nursing and Midwifery Council. (2024). UK permanent register data table. Retrieved April 1, 2025, from Registration data reports:
<https://view.officeapps.live.com/op/view.aspx?src=https%3A%2F%2Fwww.nmc.org.uk%2Fglobalassets%2Fsitedocuments%2Fdata-reports%2F2024%2Fseptember%2Fnmc-register-september-2024-uk-data-tables.xlsx&wdOrigin=BROWSELINK>

Nursing and Midwifery Council. (2024b, January 26). Equality, diversity and inclusion data tables 2023-2024. Nursing and Midwifery Council.
https://www.nmc.org.uk/globalassets/sitedocuments/annual_reports_and_accounts/edi/2024/edi-annual-data-tables-2023-2024.xls accessed 29/3/25

Nursing and Midwifery Council. (2024c). NMC Register Leavers' Survey Summary 2024. London: NMC.

Nyklíče, I., & Pop, V. J. (2005). Past and familial depression predict current symptoms of professional burnout. *Journal of Affective Disorders*, 88(1), 63-68. doi:10.1016/j.jad.2005.06.007

Office for National Statistics. (2024, October 28). Births in England and Wales: 2023. Annual live births, stillbirths, maternities, and fertility rates in England and Wales by factors including parent age, ethnicity, deprivation, gestational age, and birthweight. Office for National Statistics: <https://www.ons.gov.uk/peoplepopulationandcommunity/birthsdeathsandmarriages/livebirths/bulletins/birthsummarytablesenglandandwales/2023>

Ogunsuji, O., Ogundipe, H., Adebayo, O., Oladehin, T., Oiwoh, S., Obafemi, O., Soneye, O., Agaja, O., Uyilawa, O., Efuntoye, O., Alatishe, T., Williams, A., Ilesanmi, O., Atilola, O. (2022). Internal Reliability and Validity of Copenhagen Burnout Inventory and Oldenburg Burnout Inventory Compared with Maslach Burnout Inventory among Nigerian Resident Doctors: A Pilot Study. *Dubai Medical Journal*, 5(2), 89-95. doi:10.1159/000521376

Onoz, B., & Oguz, B. (2003). Assessment of Outliers in Statistical Data Analysis. In N. B. Harmancioglu, S. D. Ozkul, O. Fistikoglu, & P. Geerders (Eds.), *Integrated Technologies for Environmental Monitoring and Information Production* (Vols. Nato Science Series, 23), pp. 173-180). Dordrecht: Springer. doi:10.1007/978-94-010-0231-8_13

Oreskovich, M. R., Kaups, K. L., Balch, C. M., Hanks, J. B., Satele, D., Sloan, J., Meredith, C., Buhl, A., Dyrbye, L. N., Shanafelt, T. D. (2012). Prevalence of alcohol use disorders among American surgeons. *Archives of Surgery*, 147(2) 168-174. doi:10.1001/archsurg.2011.1481

Oreskovich, M. R., Shanafelt, T., Dyrbye, L. N., Tan, L., Sotile, W., Satele, D., West, C. P., Sloan, J., Boone, S. (2015). The prevalence of substance use disorders in American physicians. *American Journal on Addictions*, 24(1), 30-38. doi:10.1111/ajad.12173

Page, M. J., McKenzie, J. E., Higgins, J. P. (2018). Tools for assessing risk of reporting biases in studies and syntheses of studies: a systematic review. *BMJ Open*, 8(3), e019703. doi:10.1136/bmjopen-2017-019703

Paing, L., O'Keefe, K., McMurtrie, B., Williams, M. N. (2023). Does Answering Survey Questions About Mental Health Cause Distress? *PsyArXiv Preprints*. <https://doi.org/10.31234/osf.io/pqnvx>

Panagioti, M., Geraghty, K., Johnson, J., Zhou, A., Panagopoulou, E., Chew-Graham, C., Peters, D., Hodkinson, A., Riley, R., Esmail, A. (2018). Association Between Physician Burnout and Patient Safety,

- Professionalism, and Patient Satisfaction: A Systematic Review and Meta-analysis. *JAMA Internal Medicine*, 178(10), 1317-1331. doi:10.1001/jamainternmed.2018.3713
- Partridge, A. H., Wong, J. S., Knudsen, K., Gelman, R., Sampson, E., Gadd, M. (2005). Offering participants results of a clinical trial: sharing results of a negative study. *Research Letters*, 365(9463), 963-964. doi:https://doi.org/10.1016/S0140-6736(05)71085-0
- Paruzel-Czachura, M., Baran, L., Spendel, Z. (2021). Publish or be ethical? Publishing pressure and scientific misconduct in research. *Research Ethics*, 17(3), 375-397. doi:10.1177/1747016120980562
- Patel, R. S., Sekhri, S., Bhimanadham, N. N., Imran, S., Hossain, S. (2019). A Review on Strategies to Manage Physician Burnout. *Cureus*, 11(6), e4805. doi:10.7759/cureus.4805
- Paxton, A., Maine, D., Freedman, L., Fry, D., Lobis, S. (2005). The evidence for emergency obstetric care. *International Journal of Gynecology & Obstetrics*, 88(2), 181-193. doi:10.1016/j.ijgo.2004.11.026
- Pearson, K. (1896). Mathematical contributions to the theory of evolution. III. Regression, heredity, and panmixia. *Philosophical Transactions A*, 187, 253-318. doi:10.1098/rsta.1896.0007
- Pedlow, S., Wang, Y., Scheib, E., Shin, H. C. (2005). More Outlier Weight Issues in REACH 2010. *Proceedings of the Survey Research Methods Section, American Statistical Association* (pp. 3463-3469). Alexandria: American Statistical Association.
- Perazo, S., Clyne, W., Turner, A., Fulton, E. A., Gerada, C. (2016). 'Midwives Overboard!' Inside their hearts are breaking, their makeup may be flaking but their smile still stays on. *Women & Birth*, 29(3), e59-e66. doi:10.1016/j.wombi.2015.10.006
- Pérez-Guerrero, E. E., Guillén-Medina, M. R., Márquez Sandoval, F., Vera-Cruz, J. M., Gallegos-Arreola, M. P., Rico-Méndez, M. A., Aguilar-Velázquez, J. A., Gutiérrez-Hurtado, I. A. (2024). Methodological and Statistical Considerations for Cross-Sectional, Case–Control, and Cohort Studies. *Journal of Clinical Medicine*, 13(14), 4005. doi:10.3390/jcm13144005
- Petroni, R., Sigman, R., Willimack, D., Cohen, S., Tucker, C. (2004). Response Rates and Nonresponse in Establishment Surveys – BLS and Census Bureau. *ASA Section on Survey Research Methods*, 4159-4166. <http://www.asasrms.org/Proceedings/y2004/files/Jsm2004-000405.pdf>
- Pettitta, L., Jiang, L., Hartel, C. E. (2016). Emotional contagion and burnout among nurses and doctors: Do joy and anger from different sources of stakeholders matter? *Stress & health*, 4, 358-369. doi:10.1002/smi.2724

- Pfleegor, A. G., Katz, M., Bowers, M. T. (2017). Publish, Perish, or Salami Slice? Authorship Ethics in an Emerging Field. *Journal of Business Ethics*, 156, 189-208. doi:10.1007/s10551-017-3578-3
- Piperac, P., Todorovic, J., Terzic-Supic, Z., Maksimovic, A., Karic, S., Pilipovic, F., & Soldatovic, I. (2021). The Validity and Reliability of the Copenhagen Burnout Inventory for Examination of Burnout among Preschool Teachers in Serbia. *International Journal of Environmental Research and Public Health*, 18(3), 6805. doi:10.3390/ijerph18136805
- Price, P. C., Jhangiani, R., Chiang, I. A., Leighton, D. C., Cuttler, C. (2017). *Research Methods in Psychology* (3rd US Ed.). Montreal: PressBooks.
- PTSD UK. (2024). Post Traumatic Stress Disorder stats and figures. Retrieved April 22nd, 2024, from PTSD UK: <https://www.ptsduk.org/ptsd-stats/>
- Public Health Jersey. (2024). Births and Breastfeeding Profile 2023. Public Health Intelligence. St Helier: Public Health Jersey. Retrieved from <https://www.gov.je/SiteCollectionDocuments/Government%20and%20administration/Births%20and%20Breastfeeding%20Profile%202023.pdf>
- Public Health Jersey. (2025, Feb 5). The Case for Prevention. Annual Director of Public Health Report 2024. Executive Summary. Retrieved April 21, 2025, from Gov.Je States Reports: <https://www.gov.je/Government/Pages/StatesReports.aspx?ReportID=5902>
- Purvanova, R. K., & Muros, J. P. (2010). Gender differences in burnout: A meta-analysis. *Journal of Vocational Behavior*, 77(2), 168-185. doi:10.1016/j.jvb.2010.04.006
- Purvis, R. S., Long, C. R., Eisenberg, L. R., Hester, D. M., Cunningham, T. V., Holland, A., Chatrathi, H. E., McElfish, P. A. (2020). First Do No Harm: Ethical Concerns of Health Researchers That Discourage the Sharing of Results With Research Participants. *AJOB Empirical Bioethics*, 11(2), 104-113. doi:10.1080/23294515.2020.1737980
- Ranganathan, P. (2021). An Introduction to Statistics: Choosing the Correct Statistical Test. *Indian Journal of Critical Care Medicine*, 25(Suppl 2), S184-S186. doi:10.5005/jp-journals-10071-23815
- Rath, K. S., Huffman, L. B., Phillips, G. S., Carpenter, K. M., & Fowler, J. M. (2015). Burnout and associated factors among members of the society of gynecologic oncology. *American Journal of Obstetrics & Gynecology*, 213(6), e1-e9. doi:10.1016/j.ajog.2015.07.036

- Ravaldi, C., Carelli, E., Frontini, A., Mosconi, L., Tagliavini, S., Cossu, E., Crescioli, G., Lombardi, N., Bonaiuti, R., Bettiol, A., Facchinetti, F., Vannacci, A. (2022). The BLOSSoM study: Burnout after perinatal LOSS in Midwifery. Results of a nation-wide investigation in Italy. *Women and Birth*, 35(1), 48-58. doi:10.1016/j.wombi.2021.01.003
- Ray-Sannerud, B. N., Leyshon, S., Vallevik, V. B. (2015). Introducing Routine Measurement of Healthcare Worker's Well-being as a Leading Indicator for Proactive Safety Management Systems Based on Resilience Engineering. *Procedia Manufacturing*, 3, 319-326. doi:10.1016/j.promfg.2015.07.163
- RCOG. (2012). *Shoulder Dystocia. Green-top Guideline No. 42. 2nd Edition / March 2012*. RCOG, London. https://www.rcog.org.uk/media/ewgpnmio/gtg_42.pdf
- RCOG. (2024). Prevention and Treatment of Work-Related Post-Traumatic Stress Symptoms in the Maternity and Gynaecology Workforce. London: RCOG. doi:https://www.rcog.org.uk/media/ztknq3tg/gpp19-ptss-pub-jul-24.pdf
- Rees, C. S., Heritage, B., Osseiran-Moisson, R., Chamberlain, D., Cusack, L., Anderson, J., Terry, V., Rogers, C., Hemsworth, D., Cross, W., Hegney, D. G. (2016). Can We Predict Burnout among Student Nurses? An Exploration of the ICWR-1 Model of Individual Psychological Resilience. *Frontiers in Psychology*, 7, 1072. doi:10.3389/fpsyg.2016.01072
- Resnik, D. B. (2015). Bioethical issues in providing financial incentives to research participants. *Medicolegal and Bioethics*, 5, 35-41. doi:10.2147/MB.S70416
- Resnik, D. B. (2016). Employees as research participants: Ethical and policy issues. *IRB: Ethics & Human Research*, 38(4), 11-16.
- Richardson, W. S., Nishikawa, M. C., & Hayward, R. S. (1995). The well-built clinical question: a key to evidence-based decisions. *ACP Journal Club*, 123(3), A12-13. <https://pubmed.ncbi.nlm.nih.gov/7582737/>
- Robinson, K. A., Johantgen, M. E., Storr, C. L., Gaitens, J. M., Atlas, R. O., Ogbolu, Y. (2022). Cross-Sectional Study of the Frequency and Severity of Traumatic Childbirth Events and How They Affect Maternity Care Clinicians. *Journal of Obstetric, Gynecologic & Neonatal Nursing*, 52(1), 84-94. doi:10.1016/j.jogn.2022.08.006
- Rosner, B. (1975). On the detection of many outliers. *Technometrics*, 17(2), 221-227. doi:10.2307/1268354

- Rotenstein, L. S., Torre, M., Ramos, M. A., Rosales, R. C., Guille, C., Sen, S., Mata, D. A. (2018). Prevalence of Burnout Among Physicians: A Systematic Review. *JAMA*, 320(11), 1131-1150. doi:10.1001/jama.2018.1277
- Rouleau, D., Fournier, P., Philibert, A., Mbengue, B., Dumont, A. (2012). The effects of midwives' job satisfaction on burnout, intention to quit and turnover: a longitudinal study in Senegal. *Human Resources for Health*, 10(9). doi:10.1186/1478-4491-10-9
- Rowles, E. (2017). An overview of the evidence-based practice process for novice researchers. *Nursing Standard*, 31(43), 50-60. doi:10.7748/ns.2017.e10643
- Royal College of Midwives. (2018, March 14th). New Survey - Burn-out fears for UK midwives. Royal College of Midwives. <https://www.rcm.org.uk/media-releases/2018/march/new-survey-burn-out-fears-for-uk-midwives/>
- Royal College of Midwives. (2020, July 16th). NHS must act now to break the burnout cycle in maternity services. Royal College of Midwives. <https://www.rcm.org.uk/media-releases/2020/july/nhs-must-act-now-to-break-the-burnout-cycle-in-maternity-services/>
- Royal College of Midwives. (2021, October 4th). RCM warns of midwife exodus as maternity staffing crisis grows. Royal College of Midwives: <https://www.rcm.org.uk/media-releases/2021/september/rcm-warns-of-midwife-exodus-as-maternity-staffing-crisis-grows/>
- Royal College of Midwives. (2024, March). Solution Series. Retrieved April 21, 2025, from Royal College of Midwives: <https://rcm.org.uk/solution-series/>
- Royal College of Midwives. (n.d.). Home [LinkedIn page]. Retrieved April 21, 2025, from LinkedIn: <https://www.linkedin.com/company/the-royal-college-of-midwives/?originalSubdomain=uk>
- Royal College of Nursing. (n.d.). Rest rehydrate refuel. Retrieved from Royal College of Nursing: <https://www.rcn.org.uk/Page-Testing/Rest-rehydrate-refuel>
- Royal College of Obstetricians & Gynaecologists. (2012). Shoulder Dystocia, Green-top Guideline No. 42, 2nd Edition. London: RCOG.
- Sahlqvist, S., Song, Y., Bull, F., Adams, E., Preston, J., Ogilvie, D., & the iConnect Consortium. (2011). Effect of questionnaire length, personalisation and reminder type on response rate to a complex postal survey: randomised controlled trial. *BMC Medical Research Methodology*, 11(62). doi:10.1186/1471-2288-11-62

- Sale, J. E., Lohfeld, L. H., Brazil, K. (2002). Revisiting the Quantitative-Qualitative Debate: Implications for Mixed-Methods Research. *Quality & Quantity*, 36, 43-53. doi:10.1023/A:1014301607592
- Salvagioni, D. A., Melanda, F. N., Mesas, A. E., González, A. D., Gabani, F. L., de Andrade, S. M. (2017). Physical, psychological and occupational consequences of job burnout: A systematic review of prospective studies. *PLOS One*, 12(10), e0185781. doi:10.1371/journal.pone.0185781
- Sammut, R., Griscti, O., & Norman, I. J. (2021). Strategies to improve response rates to web surveys: A literature review. *International Journal of Nursing Studies*, 123, 104058. doi:10.1016/j.ijnurstu.2021.104058.
- Sathyanarayana Rao, T. S., & Andrade, C. (2016). Part publication: When it is ethical and when it is not. *Indian Journal of Psychiatry*, 58(4), 357-358. doi:10.4103/0019-5545.196725
- Schaufeli, W. B., & Taris, T. W. (2005). The conceptualization and measurement of burnout: Common ground and worlds apart. *Work & Stress*, 19(3), 256-262. doi:10.1080/02678370500385913
- Schnurr, P. P. (2024). Epidemiology and Impact of PTSD. Retrieved August 3, 2024, from PTSD: National Center for PTSD: <https://www.ptsd.va.gov/professional/treat/essentials/epidemiology.asp>
- Schrøder, K., Larsen, P. V., Jørgensen, J. S., Hjelmberg, J. V., Lamont, R. F., & Hvidt, N. C. (2016). Psychosocial health and well-being among obstetricians and midwives involved in traumatic childbirth. *Midwifery*, 41, 45-53. doi:10.1016/j.midw.2016.07.013
- Schrøder, K., la Cour, K., Jørgensen, J. S., Lamont, R. F., Hvidt, N. C. (2017). Guilt without fault: A qualitative study into the ethics of forgiveness after traumatic childbirth. *Social Science & Medicine*, 176, 14-20. doi:10.1016/j.socscimed.2017.01.017
- Science Direct. (2025). Midwifery Guide for Authors. Retrieved March 22, 2025, from Science Direct: <https://www.sciencedirect.com/journal/midwifery/publish/guide-for-authors>
- Science Direct. (2025b). International Journal of Nursing Studies Guide for Authors. Retrieved March 22, 2025, from Science Direct: <https://www.sciencedirect.com/journal/international-journal-of-nursing-studies/publish/guide-for-authors>
- Sedgwick, P. (2014). Non-response bias versus response bias. *British Medical Journal*, 348, g2573. doi:10.1136/bmj.g2573

- Shadish, W. R., Cook, T. D., & Campbell, D. T. (2002). *Experimental and Quasi-Experimental Designs for Generalized Causal Inference*. Boston: Houghton Mifflin.
- Shah, M. K., Gandrakota, N., Cimiotti, J. P., Ghose, N., Moore, M., Ali, M. K. (2021). Prevalence of and Factors Associated With Nurse Burnout in the US. *JAMA Network Open*, 4(2), e2036469. doi:10.1001/jamanetworkopen.2020.36469
- Shalowitz, D. V., & Miller, F. G. (2008). Communicating the Results of Clinical Research to Participants: Attitudes, Practices, and Future Directions. *PLoS Med*, 5(5), e91. doi:10.1371/journal.pmed.0050091
- Shanafelt, T. D., Balch, C. M., Dyrbye, L., Bechamps, G., Russell, T., Satele, D., Rummans, T., Swartz, K., Novotny, P. J., Sloan, J., Oreskovich, M. R. (2011). Special Report: Suicidal Ideation Among American Surgeons. *Archives of Surgery*, 146(1), 54-62. doi:10.1001/archsurg.2010.292
- Sheen, K., Spiby, H., & Slade, P. (2015). Exposure to traumatic perinatal experiences and posttraumatic stress symptoms in midwives: Prevalence and association with burnout. *International Journal of Nursing Studies*, 52(2), 578-587. doi:10.1016/j.ijnurstu.2014.11.006
- Shi, X., & Zhang, L. (2017). Effects of altruism and burnout on driving behavior of bus drivers. *Accident Analysis & Prevention*, 102, 110-115. doi:10.1016/j.aap.2017.02.025
- Shin, S., Park, J. H., Bae, S. H. (2018). Nurse staffing and nurse outcomes: A systematic review and meta-analysis. *Nursing Outlook*, 66(3), 273-282. doi:10.1016/j.outlook.2017.12.002.
- Shiyab, W., Ferguson, C., Rolls, K., Halcomb, E. (2023). Solutions to address low response rates in online surveys. *European Journal of Cardiovascular Nursing*, 22, 441-444. doi:10.1093/eurjcn/zvad030
- Shorten, A. (2013, September 26). When is the evidence too old? *BMJ Evidence-Based Nursing Blog*: <https://blogs.bmj.com/ebn/2013/09/26/when-is-the-evidence-too-old/>
- Sidhu, R., Su, B., Shapiro, K. R., & Stoll, K. (2020). Prevalence of and factors associated with burnout in midwifery: A scoping review. *European Journal of Midwifery*, 4(4). doi:10.18332/ejm/115983
- Simionato, G. K., & Simpson, S. (2018). Personal risk factors associated with burnout among psychotherapists: A systematic review of the literature. *Journal of Clinical Psychology*, 74(9), 1431-1456. doi:10.1002/jclp.22615

- Simonetti, J. A., Clinton, W. L., Taylor, L., Mori, A., Fihn, S. D., Helfrich, C. D., Nelson, K. (2020). The impact of survey nonresponse on estimates of healthcare employee burnout. *Healthcare (Amsterdam, Netherlands)*, 8(3), 100451. doi:10.1016/j.hjdsi.2020.100451
- Simpson, S., & Dorling, D. (1994). Those Missing Millions: Implications for Social Statistics of Non-response to the 1991 Census. *Journal of Social Policy*, 23(4), 543-567. doi:10.1017/S0047279400023345
- Slade, P., Sheen, K., Collinge, S., Butters, J., Spiby, H. (2018). A programme for the prevention of post-traumatic stress disorder in midwifery (POPPY): indications of effectiveness from a feasibility study. *European Journal of Psychotraumatology*, 9(1), e1518069. doi:10.1080/20008198.2018.1518069
- Smith, A. H., Dixon, A. L., Page, L. A. (2009). Health-care professionals' views about safety in maternity services: a qualitative study. *Midwifery*, 25(1), 21-31. doi:10.1016/j.midw.2008.11.004
- Smith, M. G., Witte, M., Rocha, S., & Basner, M. (2019). Effectiveness of incentives and follow-up on increasing survey response rates and participation in field studies. *BMC Medical Research Methodology*, 19(230), 21-36. doi:10.1186/s12874-019-0868-8
- Soares, J. J., Grossi, G., Sundin, O. (2007). Burnout among women: associations with demographic/socio-economic, work, life-style and health factors. *Archives of Women's Mental Health*, 10, 61-71. doi:10.1007/s00737-007-0170-3
- Solent University. (2024, October 22). Systematic Reviews: Selecting and Appraising Data. LibGuides@Solent: <https://libguides.solent.ac.uk/c.php?g=679956&p=4849464>
- Song, F., Parekh, S., Hooper, L., Loke, Y. K., Ryder, J., Sutton, A. J., Hing, C., Kwok, C. S., Pang, C., Harvey, I. (2010). Dissemination and publication of research findings: an updated review of related biases. *Health Technology Assessment*, 14(8), iii, ix-xi, 1-193. doi:10.3310/hta14080
- Soria, J., Zervoulis, K., Bolou, A. (2024) A survey examining the relationship between burnout, professional empowerment, and personality traits of midwives of an inner London NHS Trust. *European Journal of Midwifery*, 2(8). doi:10.18332/ejm/184208
- Spearman, C. (1904). The Proof and Measurement of Association between Two Things. *The American Journal of Psychology*, 15(1), 72-101. doi:10.2307/1412159
- Spence Laschinger, H. K., & Fida, R. (2014). New nurses burnout and workplace wellbeing: The influence of authentic leadership and psychological capital. *Burnout Research*, 1, 19-28. doi:10.1016/j.burn.2014.03.002

- Stallman, J. (2003). John Dewey's New Humanism and Liberal Education for the 21st Century. *Education and Culture*, 19(2). Retrieved from <https://docs.lib.purdue.edu/eandc/vol19/iss2/art4>
- Stem-and-leaf display. (2024, October 9). Retrieved February 11, 2025, from Wikipedia: https://en.wikipedia.org/wiki/Stem-and-leaf_display
- Stoll, K., & Gallagher, J. (2019). A survey of burnout and intentions to leave the profession among Western Canadian midwives. *Women and Birth*, 32(4), e441-449. doi:10.1016/j.wombi.2018.10.002
- Sumpter, J. P., Runnalls, T. J., Johnson, A. C., Barcelo, D. (2023). A 'Limitations' section should be mandatory in all scientific papers. *Science of the Total Environment*, 857(20), 159395. doi:10.1016/j.scitotenv.2022.159395
- Taherdoost, H. (2016). Sampling Methods in Research Methodology; How to Choose a Sampling Technique for Research. *International Journal of Academic Research in Management*, 5(2), 18-27. doi:10.2139/ssrn.3205035
- Taylor & Francis. (2023, July 21). European Journal of Psychotraumatology Instructions for authors. Retrieved March 22, 2025, from Taylor & Francis Online: <https://www.tandfonline.com/action/authorSubmission?show=instructions&journalCode=zept20>
- Thériault, R., Shachar, M. S., Patil, I., Lüdecke, D., Wiernik, B., Makowski, D. (2024). Check your outliers! An introduction to identifying statistical outliers in R with easystats. *Behavior Research Methods*, 56. doi:10.3758/s13428-024-02356-w
- Thomas, E. (2004). An introduction to medical statistics for health care professionals: Describing and presenting data. *Musculoskeletal Care*, 2(4), 218-228. doi:pdf/10.1002/msc.73
- Thompson, C. B., & Panacek, E. A. (2007). Basics of Research Part 4 - Research Study Designs: Non-experimental. *Air Medical Journal*, 26(1), 18-22. doi:10.1016/j.amj.2006.10.003
- Timmermans, S. (2011). The Joy of Science: Finding Success in a "Failed" Randomized Clinical Trial. *Science, Technology, & Human Values*, 36(4), 549-572. doi:10.1177/0162243910366155
- Tolonen, H., Helakorpi, S., Talala, K., Helasoja, V., Martelin, T., Prättälä, R. (2006). 25-year trends and socio-demographic differences in response rates: Finnish adult health behaviour survey. *European Journal of Epidemiology*, 21(6), 409-415. doi:10.1007/s10654-006-9019-8

- Tooher, R. L., Middleton, P. F., Crowther, C. A. (2008). A thematic analysis of factors influencing recruitment to maternal and perinatal trials. *BMC Pregnancy Childbirth*, 8(36). doi:10.1186/1471-2393-8-36
- Townsend, L., & Wallace, C. (2016). *Social Media Research: A Guide to Ethics*. Aberdeen: University of Aberdeen.
- Tukey, J. (1977). *Exploratory Data Analysis*. London: Pearson.
- Tullu, M. S. (2019). Writing the title and abstract for a research paper: Being concise, precise, and meticulous is the key. *Saudi Journal of Anaesthesia*, 13(Suppl 1), S12-S17. doi:10.4103/sja.SJA_685_18
- U.S. Department of Veterans Affairs. (2025, March 25). PTSD Checklist for DSM-5 (PCL-5), PTSD: National Center for PTSD, U.S. Department of Veterans Affairs.
<https://www.ptsd.va.gov/professional/assessment/adult-sr/ptsd-checklist.asp> Retrieved 25th April 2025
- Vaičienė, V., Blaževičienė, A., Macijauskiene, J., Sidebotham, M. (2021). The prevalence of burnout, depression, anxiety and stress in the Lithuanian midwifery workforce and correlation with sociodemographic factors. *Nursing Open*, 9(4), 2209-2216. doi:10.1002/nop2.948
- Vail, E. A., & Avidan, M. S. (2022). Trials with 'non-significant' results are not insignificant trials: a common significance threshold distorts reporting and interpretation of trial results. *British Journal of Anaesthesia*, 129(5), 643-646. doi:10.1016/j.bja.2022.06.023
- van de Mortel, T. F. (2008). Faking It: Social Desirability Response Bias in Self-report Research. *The Australian Journal of Advanced Nursing*, 25(4), 40-48. https://www.ajan.com.au/archive/Vol25/Vol_25-4_vandeMortel.pdf
- Van Mol, C. (2017). Improving web survey efficiency: the impact of an extra reminder and reminder content on web survey response. *International Journal of Social Research Methodology*, 20(4), 317-327. doi:10.1080/13645579.2016.1185255
- Vance, M. C., & Howell, J. D. (2020). Shell Shock and PTSD: A Tale of Two Diagnoses. *Mayo Clinic Proceedings*, 95(9), 1827-1830. doi:10.1016/j.mayocp.2020.06.002
- Vassos, M. V., & Nankervis, K. L. (2012). Investigating the importance of various individual, interpersonal, organisational and demographic variables when predicting job burnout in disability support workers. *Research in Developmental Disabilities*, 33(6), 1780-1791. doi:10.1016/j.ridd.2012.04.016

- Vrendenburgh, L. D., Carlozzi, A. F., Stein, L. B. (1999). Burnout in counseling psychologists: Type of practice setting and pertinent demographics. *Counselling Psychology Quarterly*, 12, 293-302.
doi:10.1080/09515079908254099
- Wahlberg, A., Sachs, M. A., Johannesson, K. B., Hallberg, G., Jonsson, M., Svanberg, A. S., Hogberg, U. (2017). Self-reported exposure to severe events on the labour ward among Swedish midwives and obstetricians: A cross-sectional retrospective study. *International Journal of Nursing Studies*, 65, 8-16.
doi:10.1016/j.ijnurstu.2016.10.009
- Wahlberg, A., Sachs, M. A., Johannesson, k., Hallberg, G., Jonsson, M., Svanberg, A. S., Hogberg, U. (2016). Post-traumatic stress symptoms in Swedish obstetricians and midwives after severe obstetric events: a cross-sectional retrospective survey. *BJOG: An International Journal of Obstetrics & Gynaecology*, 124(8), 1264-1271. doi:10.1111/1471-0528.14259
- Wang, X., & Cheng, Z. (2020). Cross-Sectional Studies - Strengths, Weaknesses, and Recommendations, Supplement: An Overview of Study Design and Statistical Considerations. *CHEST*, 158(1 (Supplement)), S65-S71. [https://journal.chestnet.org/issue/S0012-3692\(20\)X0008-0](https://journal.chestnet.org/issue/S0012-3692(20)X0008-0)
- Warelow, P. J. (2013). Changing philosophies: a paradigmatic nursing shift from Nightingale, Australian *Journal of Advanced Nursing*, 31(1), 36-45.
<https://www.ajan.com.au/archive/Vol31/Issue1/5Warelow.pdf>
- Weathers, F. W., Blake, D. D., Schnurr, P. P., Kaloupek, D. G., Marx, B. P., Keane, T. M. (2013). The Clinician-Administered PTSD Scale for DSM-5 (CAPS-5). Retrieved March 21, 2025, from PTSD: National Center for PTSD: <https://www.ptsd.va.gov/professional/assessment/adult-int/caps.asp>
- Weathers, F. W., Litz, B. T., Keane, T. M., Palmieri, P. A., Marx, B. P., Schnurr, P. P. (2013b). The PTSD Checklist for DSM-5 (PCL-5). Retrieved June 1, 2023, from: PTSD: National Center for PTSD: <https://www.ptsd.va.gov/professional/assessment/adult-sr/ptsd-checklist.asp>
- Webb, B. (2002). Using focus groups as a research method: A personal experience. *Journal of Nursing Management*, 10, 27-35. doi:10.1046/j.0966-0429.2001.00273.x
- Weeks, W. B. (2018). Physician Burnout - Overdiagnosis and Unproven Interventions. *JAMA Internal Medicine*, 178(4), 576. doi:10.1001/jamainternmed.2018
- Weiss, D. (1997). The Impact of Event Scale-Revised. In J. P. Wilson, & T. M. Keane (Eds.), *Assessing Psychological Trauma and PTSD* (pp. 399-411). New York: Guilford Press.

- West, C. P., Dyrbye, L. N., Satele, D. V., Sloan, J. A., Shanafelt, T. D. (2012). Concurrent Validity of Single-Item Measures of Emotional Exhaustion and Depersonalization in Burnout Assessment. *Journal of General Internal Medicine*, 27(11), 1445-1452. doi:10.1007/s11606-012-2015-7
- Wiley. (n.d.). JAN Author Guidelines. Retrieved March 22, 2025, from Wiley Online Library: <https://onlinelibrary.wiley.com/page/journal/13652648/homepage/forauthors.html>
- Williams, B. M. (2023, November 9). Qualitative Research, Word Counts, and Publishing Woes. Medium. <https://drbritwilliams.medium.com/qualitative-research-word-counts-and-publishing-woes-21a5ed723e5f>
- Williams, B., Entwistle, V., Haddow, G., & Wells, M. (2008). Promoting research participation: Why not advertise altruism? *Social Science & Medicine*, 66(7), 1451-1456. doi:10.1016/j.socscimed.2007.12.013.
- Williams, J. (2006). Why women choose midwifery: a narrative analysis of motivations and understandings in a group of first-year student midwives. *Evidence-Based Midwifery*, 4(2), 46. <https://link.gale.com/apps/doc/A167030939/AONE?u=anon~288d2df9&sid=googleScholar&xid=611d5d51>
- Wilson, S., Draper, H., & Ives, J. (2008). Ethical issues regarding recruitment to research studies within the primary care consultation. *Family Practice*, 25(6), 456-461. doi:10.1093/fampra/cmn076
- Windover, A. K., Martinez, K., Mercer, M. B. (2018). Correlates and Outcomes of Physician Burnout Within a Large Academic Medical Center. *JAMA Internal Medicine*, 178(6), 856-858. doi:10.1001/jamainternmed.2018.0019
- World Health Organisation (WHO). (2025). QD85 Burnout. ICD-11 for Mortality and Morbidity Statistics 2025-01. Retrieved April 8, 2025, from ICD-11 for Mortality and Morbidity Statistics 2025-01: <https://icd.who.int/browse/2025-01/mms/en#129180281>
- World Health Organisation. (2025). 6B40 Post traumatic stress disorder. ICD-11 for Mortality and Morbidity Statistics 2025-01. Retrieved April 8, 2025, from ICD-11 for Mortality and Morbidity Statistics 2025-01: <https://icd.who.int/browse/2025-01/mms/en#129180281>
- World Medical Association. (1964/2022). WMA Declaration of Helsinki - Ethical Principles for Medical Research Involving Human Subjects. Ferney-Voltaire: World Medical Association. Retrieved from <https://www.wma.net/policies-post/wma-declaration-of-helsinki/>

- Wright, E. M., Matthai, M. T., Warren, N. (2017). Methods for Alleviating Stress and Increasing Resilience in the Midwifery Community: A Scoping Review of the Literature. *Journal of Midwifery & Women's Health*, 62, 737-745. doi:10.1111/jmwh.12651
- Wu, Y., Howarth, M., Zhou, C., Hu, M., Cong, W. (2019). Reporting of ethical approval and informed consent in clinical research published in leading nursing journals: a retrospective observational study. *BMC Medical Ethics*, 20(94). doi:10.1186/s12910-019-0431-5
- Xia, Y., Wei, X., Tang, J. (2024). Understanding language barrier: how employee language anxiety impacts employee innovative performance. *Current Psychology*, (43), 11804–11815. doi:10.1007/s12144-023-05292-8
- Yettram, J. (2025, Jan 17). "Cultural work is not something that happens overnight", *Bailiwick Express*. <https://www.bailiwickexpress.com/news/jerseys-maternity-service-takes-steps-address-workplace-culture-concerns/>
- Yimeng, G., Kopec, J. A., Cibere, J., Li, L. C., Goldsmith, C. H. (2016). Population Survey Features and Response Rates: A Randomized Experiment. *American Journal of Public Health*, 106, 1422-1426. doi:10.2105/AJPH.2016.303198
- Young, P., & MacLennan, K. (2022). Human factors in obstetrics. *Anaesthesia & Intensive Care Medicine*, 23(8), 467-471. doi:10.1016/j.mpaic.2022.05.002 External Link
- Zhang, J., Zhang, N., He, H., Du, S., Ma, G. (2020). Different Amounts of Water Supplementation Improved Cognitive Performance and Mood among Young Adults after 12 h Water Restriction in Baoding China: A Randomized Controlled Trial (RCT). *International Journal of Environmental Research and Public Health*, 24(17), 7792. doi:10.3390/ijerph17217792
- Zutlevics, T. (2016). Could providing financial incentives to research participants be ultimately self-defeating? *Research Ethics*, 12(3), 137-148. doi:10.1177/1747016115626756

Appendices

Appendix A, 16/04/2024, Version 1

Databases Included in Literature Search Strategy

Abstracts in New Technology & Engineering	Academic OneFile	Accountancy Lite via LexisLibrary	Acland's Video Atlas of Human Anatomy	ACM Digital Library
AES (Audio Engineering Society) E-Library	AJ Buildings Library	Altmetric Explorer	Applied Social Sciences Index and Abstracts (ASSIA)	Architectural Drawings and Building Information
Archives Unbound	Arts & Humanities Full Text	Arts Premium Collection	BBC Shakespeare Archive Resource	BCIS (Building Cost Information Service)
BFI Inview	Bibliography of British and Irish History (BBIH)	Biological Science Collection	BioMed Central	BioMed Central Journals
BioOne	Biosis Citation Index	Biotechnology Research Abstracts	Bloomsbury Applied Visual Arts.	Bloomsbury Cultural History
Bloomsbury Encyclopedia of Philosophers.	BMJ Best Practice	Box of Broadcasts (BoB)	British Education Index	British Periodicals
British Standards Online	Business Source Premier	Cambridge Core	Cambridge Histories Online	Cardiff Index to Legal Abbreviations
Child Development and Adolescent Studies	China Law Database	Churchill Archive.	CINAHL Plus	Cochrane Library
Community Care Inform - Adult	Community Care Inform - Child	Construction and Building Abstracts	Construction Information Service (CIS)	CRCNetBase: Forensics & Criminal Justice
Criminal Justice	Data Citation Index	Digital Theatre Plus	DOAJ: Directory of Open Access Journals	Early European Books
Earth, atmospheric & aquatic science database	Ebook Central	EconPapers	EDINA Digimap	Education Abstracts
Education Database	Educational Administration Abstracts	Embase	Emerald Management Xtra	Emerald Premier: Engineering collection
Emerging Markets Case Studies Collections 2012-2017	ERIC	Essential Science Indicators	ETHOS	Europe PubMed Central

Faculti (Education collection)	FT.com	Gale Literature	Gale Primary Sources	Gale Virtual Reference Library
General OneFile	Global Health Observatory (GHO)	GreenFILE	Greenleaf Online Library	Hathi Trust Digital Library
HeinOnline: Law Journal Library	HighWire Press Journals	Historical Texts (Incl. EEBO and ECCO).	Hospitality and Tourism Complete	IBISWorld
ICE Virtual Library	IEEE Xplore	IMSLP Petrucci Music Library	InCites	International Bibliography of the Social Sciences
Internet Archive	IOP Journal Archive	ISURV	John Johnson Collection	Journal Archives
Journal Citation Reports	JSTOR	JSTOR - 19th Century British Pamphlets	JSTOR Books (open access)	Lawtel
Lexis PSL	LexisLibrary	Linguistics and Language Behavior Abstracts	Literary Encyclopedia	LWW Health Library
LWW Total Access	Maternity and Infant Care	Medical Embryology Animations	MEDLINE	MEDLINE (Ovid)
MEDLINE (Web of Science)	Migration to New Worlds	Military & Government Collection	Mintel Reports	Music Periodicals Database
National Criminal Justice Reference Service Abstracts	National Library of Medicine (NLM) Digital Collections	Natural Science Collection	NEC3 Contracts Set	OECD iLibrary
OneFile: News	OpenDoar	Ophthalmology Book Collection	OVID Journals	Oxford Dictionary of National Biography (ODNB)
Oxford English Dictionary (OED)	Oxford Music Online: Grove Music Online	Oxford University Research Archive	Passport	PEDRO Physiotherapy Evidence Database
Performing Arts Periodicals Database	PhilPapers	Police Professional	Professional Development Collection	Project Muse
ProQuest Agricultural & Environmental Science Database.	ProQuest Art, Design and Architecture Collection	ProQuest Materials Science & Engineering Database	ProQuest SciTech Collection	ProQuest Sociology Database
PsycARTICLES	Psychology & Behavioral Sciences Collection	PsycINFO	PsycTESTS	PTSDpubs
Public Health Image Library	Public Library of Science (PLOS)	Public Library of Science (PLOS) Medicine	PubMed	PubMed Bookshelf
PubMed Central (PMC)	PubMed Central Journals	Royal Society of Chemistry Journal Archive	SAGE Journals Online	SAGE Knowledge

SAGE Research Methods Online	ScienceDirect	ScienceDirect Open Access Journals	SciTech Collection	SCOPUS
Screen Studies	Screen Studies Collection	Social Care Online	Social Science Database	Social Sciences Premium Collection
Social Work Explorer	Social Work Toolkit	Sociological Abstracts	SPORTDiscus	Springer Ebooks
Springer Open Journals	Tax and Accountancy LexisLibrary Practice Area	The Proceedings of the Old Bailey: London's Central Criminal Court, 1674 to 1913	Times Digital Archive	Toxicology Abstracts
TOXLINE	TRILT (Television and Radio Index for Learning and Teaching)	TRIP Database	UK Parliamentary Papers	Visible Body
Visual Arts Data Service (VADS)	Vogue Archive	warc	Web of Science	Wellcome images
Westlaw UK	WGSN	Wiley Online Library	WorldLII - World Legal Information Institute	XpertHR Professional
ZETOC	Zoological Record	19th century British pamphlets.	4D Interactive Anatomy	

Note. This table presents an alphabetised list of all databases included in the literature review search strategy.

Appendix B, 26/04/2025, Version 1

Reference List of Global Studies included in Literature Review

- Alemu, S. S., Hajure, M., Agago, M. T., Hussien, F., Gesisa, H. G., Teferi, S. M., Yohanes, D., & Wedajo, L. F. (2024). Prevalence of burnout and associated factors among midwives, 2023: institution-based cross-sectional study, *Frontiers in Public Health*, 12, 1422915, doi: 10.3389/fpubh.2024.1422915
- Creedy, D. K., Sidebotham, M., Gamble, J., Pallant, J., & Fenwick, J. (2017). Prevalence of burnout, depression, anxiety and stress in Australian midwives: a cross-sectional survey. *BMC Pregnancy and Childbirth*, 17. doi:10.1186/s12884-016-1212-5
- Beck, C. T., LoGiudice, J., & Gable, R. K. (2015). A Mixed-Methods Study of Secondary Traumatic Stress in Certified Nurse-Midwives: Shaken Belief in the Birth Process. *Journal of Midwifery & Women's Health*, 60(1), 16-23. doi:10.1111/jmwh.12221
- Cohen, R., Leykin, D., Golan-Hadari, D., & Lahad, M. (2017). Exposure to traumatic events at work, posttraumatic symptoms and professional quality of life among midwives. *Midwifery*, 50, 1-8. doi:10.1016/j.midw.2017.03.009
- Dawson, K., Newton, M., Forster, D., & McLachlan, H. (2018). Comparing caseload and non-caseload midwives' burnout levels and professional attitudes: A national, cross-sectional survey of Australian midwives working in the public maternity system. *Midwifery*, 63, 60-67. doi:https://linkinghub.elsevier.com/retrieve/pii/S0266613818301335
- Esfahani, M. S., Mirazee, M., Boroumandfar, K., & Abedi, M. R. (2012). Job burnout and its relation with personality traits among the midwives working in Isfahan, Iran. *Iranian Journal of Nursing and Midwifery Research*, 17(3), 220-224.
- Favrod, C., Jan du Chêne, L., Soelch, C. M., Garthus-Niegel, S., Tolsa, J., Legault, F., Briet, V., Horsch, A. (2018). Mental Health Symptoms and Work-Related Stressors in Hospital Midwives and NICU Nurses: A Mixed Methods Study. *Frontiers in Psychiatry*, 9. doi:10.3389/fpsyt.2018.00364
- Fenwick, J., Sidebotham, M., Gamble, J., & Creedy, D. K. (2018). The emotional and professional wellbeing of Australian midwives: A comparison between those providing continuity of midwifery care and those not providing continuity. *Women and Birth*, 31(1), 38-43. doi:https://linkinghub.elsevier.com/retrieve/pii/S1871519217301415

Fumagalli, S., Panzeri, M., Borrelli, S., & Ornaghi, S. (2024). Midwives' stress and burnout during the Omicron wave in Italy: An observational survey. *Journal of Advanced Nursing*, 80(11), 4510-4522. doi:10.1111/jan.16065

Henriksen, L., & Lukasse, M. (2016). Burnout among Norwegian midwives and the contribution of personal and work-related factors: A cross-sectional study. *Sexual & Reproductive Healthcare*, 9, 42-47. doi:https://linkinghub.elsevier.com/retrieve/pii/S1877575616300842

Hildingsson, I., Westlund, K., & Wiklund, I. (2013). Burnout in Swedish midwives. *Sexual & Reproductive Healthcare*, 4(3), 87-91. doi:https://doi.org/10.1016/j.srhc.2013.07.001

Hildingsson, I., Fahlbeck, H., Larsson, B., & Johansson, M. (2024). Increasing levels of burnout in Swedish midwives – A ten-year comparative study. *Women and Birth*, 37(2), 325-331. doi:https://linkinghub.elsevier.com/retrieve/pii/S1871519223003025

Islamiyah, H. S., Febriyana, N., & Jayanti, R. D. (2023). Factors related to burnout incidence in midwives during the Covid-19 pandemic. *Indonesian Midwifery and Health Sciences Journal*, 7(2). Retrieved from <http://e-journal.unair.ac.id/index.php/IMHSJ>

Jepsen, I., Juul, S., Foureur, M., Sørensen, E. E., & Nøhr, E. A. (2017). Is caseload midwifery a healthy work-form? – A survey of burnout among midwives in Denmark. *Sexual & Reproductive Healthcare*, 11, 102-106. doi: 10.1016/j.srhc.2016.12.001

Jiang, W., Wang, Y., Zhang, J., Song, D., Pu, C., & Shan, C. (2023). The Impact of the Workload and Traumatic Stress on the Presenteeism of Midwives: The Mediating Effect of Psychological Detachment. *Journal of Nursing Management*, 2023, 1686151. doi: 10.1155/2023/1686151

Jordan, K., Fenwick, J., Slavin, V., Sidebotham, M., & Gamble, J. (2013). Level of burnout in a small population of Australian midwives. *Women and Birth*, 26(1), 125-132. doi:http://dx.doi.org/10.1016/j.wombi.2013.01.002

Kerkman, T., Dijkman, L. M., Baas, M. A., Evers, R., Pampus, M. G., & Stramrood, C. A. (2019). Traumatic Experiences and the Midwifery Profession: A Cross-Sectional Study Among Dutch Midwives. *Journal of Midwifery & Women's Health*, 64(4), 435-442. doi:10.1111/jmwh.12946

Kiss, Z. S., Vitrai, J., Dio, M., Kremer, I. L., & Adam, S. (2024). High prevalence of burnout among midwives in Hungary: High job demands and low resources as potential persistent stressors, a focus on prevention. *Heliyon*, 10, e24495. doi:<https://doi.org/10.1016/j.heliyon.2024.e24495>

Leinweber, J., Creedy, D. K., Rowe, H., & Gamble, J. (2017). Responses to birth trauma and prevalence of posttraumatic stress among Australian midwives. *Women and Birth*, 30(1), 40-45. doi: 10.1016/j.wombi.2016.06.006

Lipienné Krémer, I., Dió, M., Vitrai, J., & Soósné Kiss, Z. (2023). Burnout syndrome among Hungarian midwives in 2014 and 2022. *Hungarian Medical Journal*, 164(40), 1592-1599. doi:10.1556/650.2023.32884

Linetsky, I., Grinberg, K., & Granot, M. (2024). The role of self-criticism and self-compassion in the development of PTSD among midwives. *Midwifery*, 130, 103932. doi:<https://doi.org/10.1016/j.midw.2024.103932>

Matthews, R. P., Hyde, R. L., Llewelyn, F., Shafiei, T., Newton, M. S., & Forster, D. A. (2022). Who is at risk of burnout? A cross-sectional survey of midwives in a tertiary maternity hospital in Melbourne, Australia. *Women and Birth*, 35(6), e615-623. doi:<https://doi.org/10.1016/j.wombi.2022.02.010>

Mengistie, B. A., Azene, Z. N., Haile, T. T., Abiy, S. A., Abegaz, M. Y., Taye, E. B., Alemu, H. N., Demeke, M., Melese, M., Tsega, N. T., Aragaw, G. M. (2023). Work-related burnout and its associated factors among midwives working at public hospitals in northwest Ethiopia: a multi-centered study. *Frontiers in Psychiatry*, 14, e1256063. doi:10.3389/fpsy.2023.1256063

Mollart, L., Skinner, V. M., Newing, C., & Foureur, M. (2013). Factors that may influence midwives work-related stress and burnout. *Women and Birth*, 26(1), 26-32. doi:10.1016/j.wombi.2011.08.002

Ravaldi, C., Carelli, E., Frontini, A., Mosconi, L., Tagliavinie, S., Cossu, E., Crescioli, G., Lombardi, N., Bonaiuti, R., Bettiol, A., Facchinetti, F., Vannacci, A. (2022). The BLOSSoM study: Burnout after perinatal LOSS in Midwifery. Results of a nation-wide investigation in Italy. *Women and Birth*, 35(1), 48-58. doi:<http://dx.doi.org/10.1016/j.wombi.2021.01.003>

Rouleau, D., Fournier, P., Philibert, A., Mbengue, B., & Dumont, A. (2012). The effects of midwives' job satisfaction on burnout, intention to quit and turnover: a longitudinal study in Senegal. *Human Resources for Health*, 10(9). Retrieved from <http://www.human-resources-health.com/content/10/1/9>

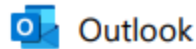
Stoll, K., & Gallagher, J. (2019). A survey of burnout and intentions to leave the profession among Western Canadian midwives. *Women and Birth*, 32(4), e441-449. doi:
<https://linkinghub.elsevier.com/retrieve/pii/S1871519218303196>

Vaičienė, V., Blaževičienė, A., Macijauskiene, J., & Sidebotham, M. (2021). The prevalence of burnout, depression, anxiety and stress in the Lithuanian midwifery workforce and correlation with sociodemographic factors. *Nursing Open*, 9(4), 2209-2216.

Wahlberg, A., Sachs, M. A., Johannesson, K., Hallberg, G., Jonsson, M., Svanberg, A. S., & Hogberg, U. (2016). Post-traumatic stress symptoms in Swedish obstetricians and midwives after severe obstetric events: a cross-sectional retrospective survey. *BJOG: An International Journal of Obstetrics & Gynaecology*, 124(8), 1264-1271. doi:10.1111/1471-0528.14259

Appendix C, 08/12/2023, Version 1

Permission from Lead Midwife to Proceed with Invitation to Participate



RE: Midwifery Research

From [redacted] <[redacted]@[redacted]>

Date Fri 08/12/2023 11:32

To [redacted] <[redacted]1@chester.ac.uk>

Dear [redacted]

Thank you for your email regarding your study. I have no problem at all with you contacting [redacted] midwives about the rates of burnout and PTSD amongst midwives.

If I can be of any help to you during this time please do not hesitate to contact me.

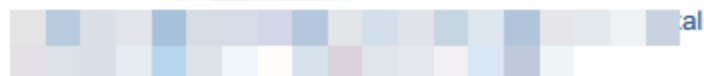
Kind regards



Lead Midwife

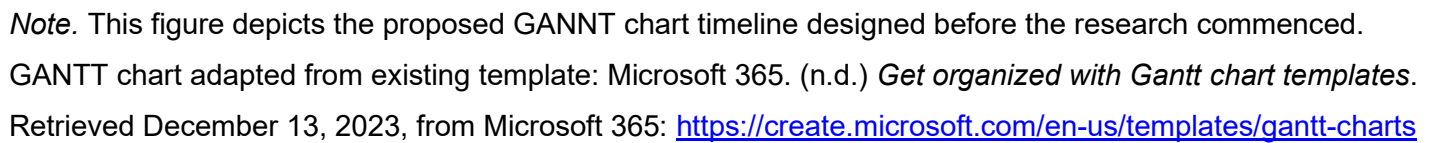
Professional Midwifery Advocate

Direct dial – [redacted]



Note. This screenshot is of the email from the Lead Midwife that provided permission to contact Jersey midwives to participate in the research. All identifying details have been blurred for confidentiality.

GANTT Chart Timeline for Research



Appendix E, 01/08/2023-07/02/2024, Version 1**Scientific Merit Clearance Letter, Sponsorship, and Insurance from University of Chester, and Ethics REC Review Favourable Outcome Letter by Local Health Service**

BE/bh
07 February 2024



**University of
Chester**

Faculty of Health, Medicine & Society
Wheeler Building
Castle Drive
Chester
CH1 1SL
Email: hscethics@chester.ac.uk

Dear [REDACTED]

Project Title: Do the rates of burnout and Post-Traumatic Stress Disorder Symptoms in Jersey midwives reflect those identified in midwives worldwide? A quantitative study.

Reference Number: RESC1223-1193

Chief Investigator: [REDACTED]

Student Number [REDACTED]

Course of Study: MSc Professional Studies

Educational Supervisor: [REDACTED]

I am pleased to confirm that the above research project has been subject to an independent scientific critique carried out by the School of Nursing & Healthcare Education Research Ethics Sub-Committee, of the University of Chester's Faculty of Health, Medicine & Society. The review included consideration of the research question, methodology, target group and plans for the recruitment of participants.

Overall, the reviewers considered the project worthwhile and of scientific merit, and that the protocol describes appropriate plans for the successful completion of the research.

You will now need to work with the University Research & Innovation Office to advise you in proceeding to submission of your application to R&D – [REDACTED]

Once you have received approval from the R&D – [REDACTED] please send a copy of the approval letter to hscethics@chester.ac.uk for our records.

Yours sincerely



[REDACTED]
Chair, School of Nursing & Healthcare Education Research Ethics Sub-Committee

cc Research & Innovation Office
cc Academic Supervisor

Note. This figure depicts the scientific merit clearance letter obtained from University of Chester.



7th February 2024

To whom it may concern

Sponsorship letter for student project on taught programme

Project: Do the rates of burnout and Post-Traumatic Stress Disorder Symptoms in Jersey midwives reflect those identified in midwives worldwide? A quantitative study.

Reference Number: RESC1223-1193

Student Name: [REDACTED]

Student Number: [REDACTED]

Course of Study: MSc Professional Studies

Academic Supervisor: [REDACTED]

The University of Chester is willing to take on the responsibilities of Sponsor for the above student research project, subject to ethical approval being obtained from the relevant NHS REC to which it is being submitted.

This project has been independently internally reviewed by the School of Nursing & Healthcare Education Research Ethics Sub Committee who has confirmed that the project is worthwhile and of scientific merit, and that the protocol describes appropriate plans for the successful completion of the research.

Yours faithfully

[REDACTED] Executive Dean
Faculty of Health, Medicine & Society

Cc: Student, Academic Supervisor,
Research & Innovation Office,
Deputy Bursar

University of Chester, Parkgate Road, Chester CH1 4BJ • Tel +44 (0)1244 511000 • www.chester.ac.uk

Registered Charity HQ 526938 • 'Working towards Equality of Opportunity • Extending Opportunities through Education'

Note. This figure depicts the sponsorship letter obtained from University of Chester.



TO WHOM IT MAY CONCERN

1st August 2023

Dear Sir/Madam

UNIVERSITY OF CHESTER AND ALL ITS SUBSIDIARY COMPANIES

We confirm that the above Institution is a Member of U.M. Association Limited, and that the following cover is currently in place:

PROFESSIONAL INDEMNITY

Certificate of Entry No.	UM043/99
Period of Indemnity	1 st August 2023 to 31 st July 2024
Limit of Indemnity	£10,000,000 any one claim and in the aggregate except for Pollution where cover is limited to £1,000,000 in the aggregate
Cover provided by	U.M. Association Limited

If you have any queries in respect of the above details, please do not hesitate to contact us.

Yours faithfully



For U.M. Association Limited

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Note. This figure depicts an insurance letter obtained from University of Chester.



TO WHOM IT MAY CONCERN

1st August 2023

Dear Sir/Madam

UNIVERSITY OF CHESTER AND ALL ITS SUBSIDIARY COMPANIES

We confirm that the above Institution is a Member of U.M. Association Limited, and that the following covers are currently in place:

PUBLIC AND PRODUCTS LIABILITY (Medical Malpractice)

Certificate of Entry No.	UM043/99
Period of Indemnity	1 st August 2023 to 31 st July 2024
Includes	Indemnity to Principal and includes cover whilst University employees and its students are engaged in Health and Social Care activities worldwide – excluding Medical Malpractice claims except as under
Includes	Medical Malpractice (mistreatment) claims against the University and its employees and its students providing the latter are working under the supervision of a medically qualified person
Limit of Indemnity	a) £50,000,000 any one event and in the aggregate in respect of Products Liability and Unlimited in the aggregate in respect of Public Liability b) Medical Malpractice – £10,000,000 any one event and in the aggregate
Cover provided by	U.M. Association Limited

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1st August 2023

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EMPLOYERS' LIABILITY

Certificate No.	Y016458QBE0123A/043
Period of Indemnity	1 st August 2023 to 31 st July 2024
Limits of Indemnity	£10,000,000 Primary Limit any one event unlimited in the aggregate £20,000,000 Excess Limit
Includes	Indemnity to Principal
Covers provided by	QBE UK Limited (Primary Limit) U.M. Association Limited (Excess Limit)

PUBLIC AND PRODUCTS LIABILITY

Certificate of Entry No.	UM043/99
Period of Indemnity	1 st August 2023 to 31 st July 2024
Includes	Indemnity to Principal
Limit of Indemnity	£50,000,000 any one event and in the aggregate in respect of Products Liability and unlimited in the aggregate in respect of Public Liability
Cover provided by	U.M. Association Limited

If you have any queries in respect of the above details, please do not hesitate to contact us.

Yours faithfully



For U.M. Association Limited

5 St Helen's Place, London EC3A 6AB | T: 020 7847 8670 | www.umal.co.uk

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Note. This figure depicts an insurance letter obtained from University of Chester.



CERTIFICATE OF EMPLOYERS' LIABILITY INSURANCE (a)

(Where required by regulation 5 of the Employers' Liability (Compulsory Insurance) Regulations 1998 (the Regulations), one or more copies of this certificate must be displayed at each place of business at which the policy holder employs persons covered by the policy)

1. Name of policy holder Policy No Y016458QBE0123A/043
University of Chester

2. Date of commencement of insurance policy 1st August 2023

3. Date of expiry of insurance policy 31st July 2024

We hereby certify that subject to paragraph 2:

1. the policy to which this certificate relates satisfies the requirements of the relevant law applicable in Great Britain, Northern Ireland, Isle of Man, Island of Jersey, Island of Guernsey, Island of Alderney; or any offshore installations in territorial waters around Great Britain and its Continental Shelf (b): and;
2. (a) the minimum amount of cover provided by this policy is no less than £5 million (c); or
~~(b) the cover provided under this policy relates to claims in excess of [£] but not exceeding [£].~~
3. the policy covers the holding company and all its subsidiaries

Signed on behalf of QBE UK Limited (Authorised Insurer)



Notes

- (a) *Where the employer is a company to which regulation 3(2) of the Regulations applies, the certificate shall state in a prominent place, either that the policy covers the holding company and all its subsidiaries, or that the policy covers the holding company and all its subsidiaries except any specifically excluded by name, or that the policy covers the holding company and only the named subsidiaries.*
- (b) *Specify applicable law as provided for in regulation 4(6) of the Regulations.*
- (c) *See regulation 3(1) of the Regulations and delete whichever of paragraphs 2(a) or 2(b) does not apply. Where 2(b) is applicable, specify the amount of cover provided by the relevant policy.*

Important

Display will be satisfied if the certificate is made available in electronic form and each relevant employee to whom it relates has reasonable access to it in that form.

QBE UK Limited, 30 Fenchurch Street, London, EC3M 3BD - Registered in England No. 1781561
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Note. This figure depicts an insurance letter obtained from University of Chester.



TO WHOM IT MAY CONCERN

1st August 2023

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We confirm that the above Institution is a Member of U.M. Association Limited, and that the following cover is currently in place in respect of Clinical Trials undertaken within the United Kingdom subject to the cover terms, conditions and exceptions:

CLINICAL TRIALS COVERAGE

Certificate of Entry No.	UM043/99
Period of Indemnity	1 st August 2023 to 31 st July 2024
Limit of Indemnity	£30,000,000 any one claim and in the aggregate including claims costs and expenses
Basis of Cover	Legal Liability or No Fault cover
Cover Provided by	U.M. Association Limited
Main Cover Exclusions	i) Trials involving subjects under 5 years of age ii) Trials assisting with or altering in any way the process of conception iii) Trials investigating or participation in methods of contraception iv) Trials involving genetic engineering other than for preventing or and diagnosing disease v) Trials involving drugs or surgery or nutrients vi) Trials involving persons known to be pregnant vii) Trials involving products manufactured by the University viii) Trials involving 'E-Cigarettes'

Yours faithfully



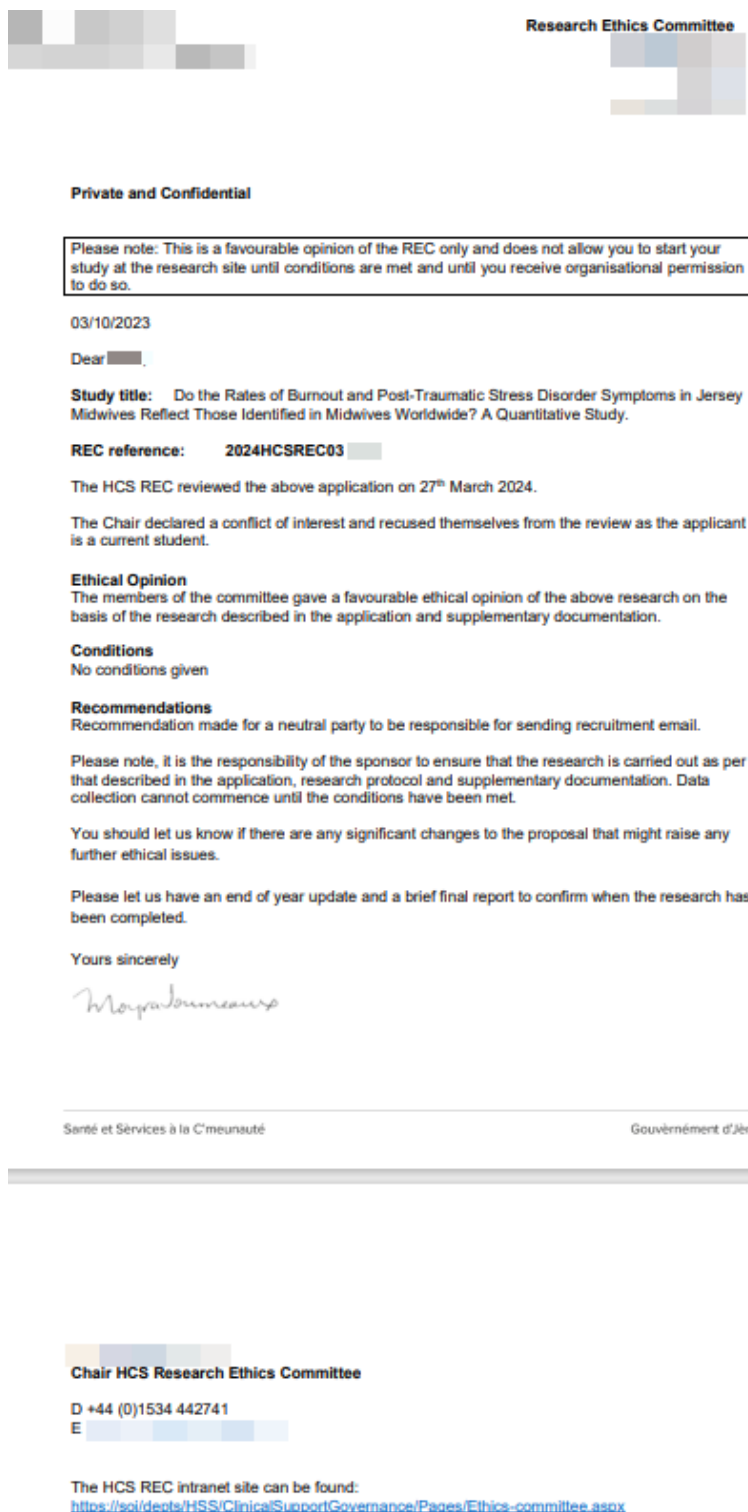
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Note. This figure depicts an insurance letter obtained from University of Chester.



Note. This figure depicts the favourable opinion letter from the local health service REC.

Appendix F, 03/11/2023, Version 1

Participant Information Sheet

Do the Rates of Burnout and Post-Traumatic Stress Disorder Symptoms in Jersey Midwives Reflect those Identified in Midwives Worldwide? A Quantitative Study.

You are being invited to take part in a research study. 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 or not you wish to take part.

Thank you for reading this.

What is the purpose of the study?

Research conducted in several countries worldwide has shown that midwives and other medical birth attendants are at a greater risk of burnout and PTSD than members of other professions. Stressors such as insufficient staff levels, increased work demands, and bullying have been proven to trigger both burnout and PTSD.

This study aims to assess the rates of burnout and PTSD symptoms in midwives who currently work in Jersey. This can then be compared to the research from other countries to determine if the rates are statistically significantly higher than, lower than, or equal to those experienced worldwide. A similar rate to other studies would strengthen the theory that midwifery work is high-risk for causing burnout and PTSD regardless of difference in cultures, working practices and workplace environments. However, if the rate is found to be significantly different to prior research findings further research can be considered to explore the reasons behind this.

Why have I been chosen?

You have been chosen because you are an NMC registered midwife working in Jersey.

Do I have to take part?

It is up to you to decide whether to take part. If you decide to take part, you are still free to withdraw up to the day before data analysis commences (13/05/24) and without giving a reason. A decision to withdraw at any time, or a decision not to take part, will not affect your role as a midwife or your personal life in any way. If you choose to withdraw before data analysis commences, you will still be able to receive your assessment results if you had requested them. If you request your results but change your mind before receiving them, please contact the lead researcher ([NAME REDACTED] – [EMAIL REDACTED]) as soon as possible to ensure they are not sent.

If you decide to withdraw from the study before data analysis commences, your data will be securely destroyed.

What will happen to me if I take part?

If you decide to take part, you already have a digital copy of this sheet for you to keep. By clicking the link to the survey, you will first access a digital consent form. If you consent to take part, completion of this form will lead you to the assessment tools for burnout and PTSD. These tools can be used anonymously – your name on the consent form will not be linked to your answers. When the data from the surveys is downloaded, each response will be allocated a unique participation number instead. No-one will be identifiable in the final report.

Should you wish to know your assessment scores, there is the option to provide an email address at the end of your survey to receive these. If your email address contains your name, please be aware that this does remove anonymity, however only the researcher will have these details. You can choose to use an email address that does not identify you if you wish.

What are the possible disadvantages and risks of taking part?

The topics of burnout and PTSD can be emotionally charged. It is possible that some participants may feel emotionally distressed during their participation. To minimise distress and anxiety, you will not be shown your burnout and PTSD scores automatically at the end of the assessment. You can opt to have these sent to you via email should you wish.

Support will be available from the researcher who is a qualified Professional Midwifery Advocate (PMA). You can also reach out to one of the other PMAs within [REDACTED] by talking to them directly, by email, or by phone. If you are not sure which staff members are PMAs, please speak to either the researcher or the Labour Ward Coordinator on duty who can advise you. You will also be signposted to local and national support services including:

AXA Employee Assistance Programme helpline, 0800 0727 072

Mental Health Crisis Team, +44 (0) 1534 445290

JTT, <https://www.gov.je/Health/Mental/pages/jerseytalkingtherapies.aspx>

Listening Lounge, <https://www.facebook.com/listeninglounge>

Mind Jersey, <https://www.mindjersey.org/>

Jersey Recovery College, <https://www.recovery.je/>

Hub of Hope, <https://hubofhope.co.uk/>

Samaritans, <https://www.samaritans.org/> or 116 123 free from any phone

TogetherAll app, <https://togetherall.com/en-gb/>

What are the possible benefits of taking part?

By taking part, you will be contributing to the understanding of burnout and PTSD in midwifery, which will hopefully benefit midwives in the future.

What if something goes wrong?

If you wish to complain or have any concerns about any aspect of the way you have been approached or treated during the course of this study, please contact: Professor [NAME REDACTED], Executive Dean of the Faculty of Health, Medicine and Society, University of Chester, Riverside Campus, Castle Drive, Chester, Cheshire, CH1 1SL. Tel: 01244 513380.

Email: [EMAIL REDACTED]

The University does not accept responsibility for any harm experienced apart from that which is proven to have been caused through its negligence. In the unlikely event that you experience harm through your participation in the research, and this is due to the negligent conduct of the researchers, then you may have grounds to bring legal action. If you choose to bring such action, you may incur legal costs.

Will my taking part in the study be kept confidential?

All information which is collected about you during the research will be kept strictly confidential so that only the researcher carrying out the research and their supervisor will have access to such information. You will provide your name for the consent form only, and your data will be coded after collection to anonymise it. If you wish to know your individual burnout/PTSD screening results, and/or you would like to be contacted with the study findings, you will have to provide an email address.

What will happen to my data?

Participants should note that data collected from this project may be retained and published in an anonymised form. By agreeing to participate in this project, you are consenting to the retention and publication of data. Email addresses will not be used for any other purpose, only to send you your individual survey results and the overall findings of the study. Data will be retained for a minimum of 10 years after last use.

What will happen to the results of the research study?

The results will be written up into a report as part of the researcher's programme of study: MSc in Professional Studies with the University of Chester. It is hoped that the findings may be used to improve the understanding of PTSD in midwives. Individuals who participate will not be identified in any subsequent report or publication.

Who is organising the research?

The Centre for Public Health Research at the University of Chester will be involved in organising, supervising, and monitoring the study.

Who may I contact for further information?

If you would like more information about the research before you decide whether you would be willing to take part, please contact:

[NAME REDACTED] – [EMAIL ADDRESS REDACTED]

Thank you for your interest in this research.

Appendix G, 31/01/2024, Version 3**Recruitment and Advertisement Materials****Appendix G, Figure 1***Email Advertisement*

Hello all,

You are being invited to participate in a study titled "Do the Rates of Burnout and Post-Traumatic Stress Disorder Symptoms in Jersey Midwives Reflect those Identified in Midwives Worldwide? A Quantitative Study."

This study is part of my MSc in Professional Studies with the University of Chester.

Please find attached the Participant Information Sheet with details of what the study is for, and why I am inviting you to participate.

If you would like to participate, please use the following link to access the study survey:

[LINK REDACTED]

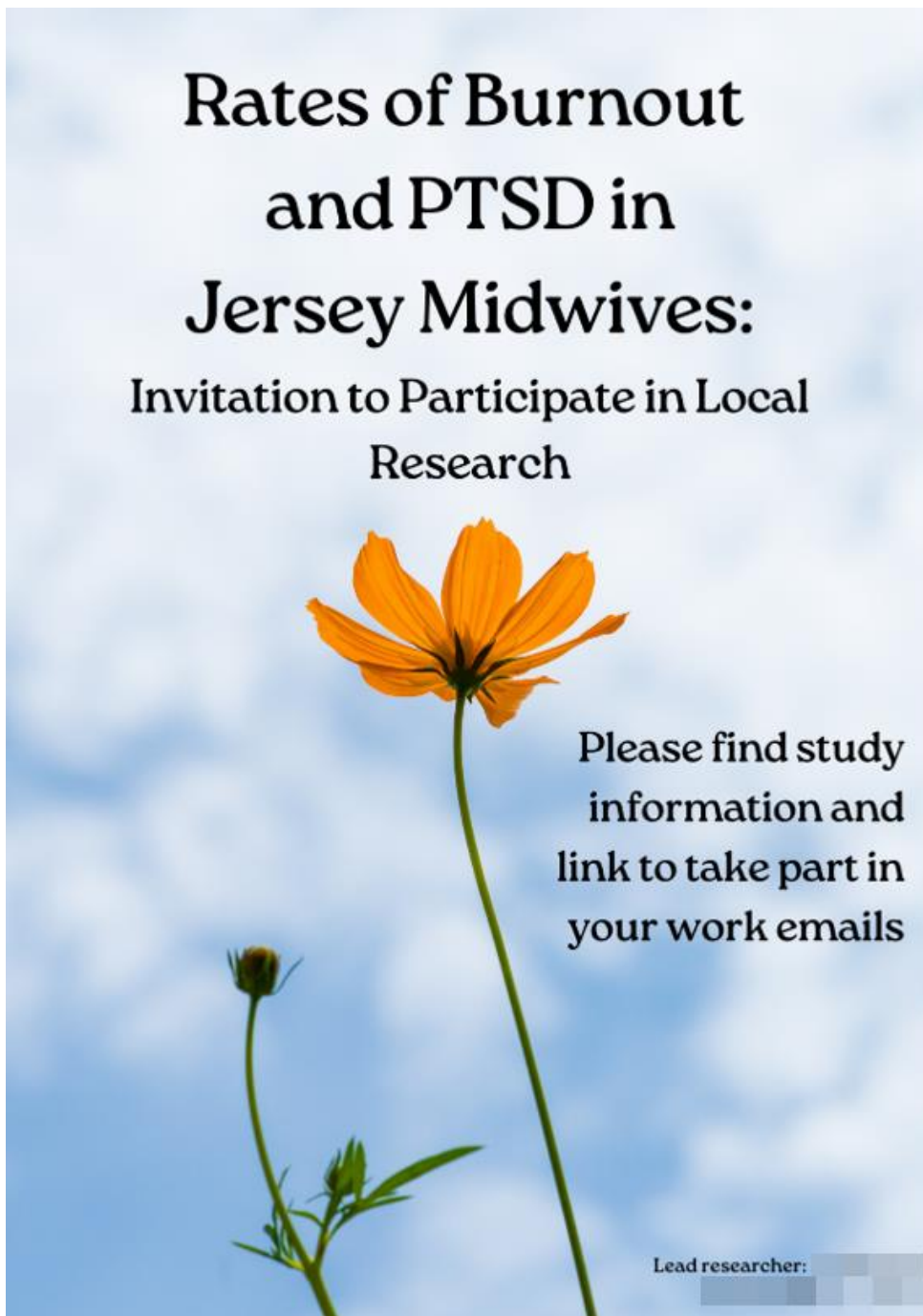
Kind regards,

[NAME REDACTED]

Lead Researcher

Note. This figure depicts the email sent to potential participants.

Appendix G, Figure 2*Poster Advertisement*



Note. This figure depicts a poster designed to advertise the research.

Appendix H, 06/12/2023, Version 1

Risk Assessment

Faculty of Health & Social Care

General Risk Assessment Pro-forma

Assessment Undertaken By				
Department / Location	Faculty of Health and Social Care – Research Office			
Signed		Date	December 2023	
Hazards identified	Risk of, or from & who is at risk	Control measures already in place	Further Actions Required	Review Date
Invasion of Privacy & Breach of Confidentiality	Should survey results be inadvertently shared outside of the study with participant identifier (e.g., name), there is a risk of participants experiencing feelings of distress and/or embarrassment related to invasion of privacy.	The only mandatory identifier attached to participant data at point of collection is their name, attached to the consent form questions. Email addresses are voluntary to provide should the participant wish to know their screening results, or the results of the study. Once submitted, the data will be codified with a unique participant number so that confidentiality and privacy are maintained during analysis. A list of names, emails and participant numbers will be kept on a separate spreadsheet, which will be a password protected file on a laptop with a separate password used to login to it. To ensure participants can answer the survey in an environment where they feel safe to do so, the survey link will be accessible from any wi-fi enabled	Escalation to supervisor if required.	TBC

		device (e.g., mobile, tablet, laptop, PC) so that they can complete it outside of work hours should they wish. To ensure results are not inadvertently emailed to an incorrect address, participants are asked to enter the email address twice to reduce risk of typos or automatic form-fillers entering incorrect data.		
Surveys are related to mental health and distressing events	Participant at risk of emotional distress	Researcher is trained Professional Midwifery Advocate who can offer debrief and restorative clinical supervision session to participant.	Patient information leaflet details this risk and signposts to multiple different support services. Escalation to supervisor if required.	TBC

Note. This figure depicts the risk assessment completed prior to the research.

Appendix I, 01/06/2023, Version 1**Copenhagen Burnout Inventory****Part one: Personal burnout**

Definition: Personal burnout is a state of prolonged physical and psychological exhaustion.

Questions:

1. How often do you feel tired?
2. How often are you physically exhausted?
3. How often are you emotionally exhausted?
4. How often do you think: "I can't take it anymore"?
5. How often do you feel worn out?
6. How often do you feel weak and susceptible to illness?

Response categories: Always, Often, Sometimes, Seldom, Never

Scoring: Always: 100; Often: 75; Sometimes: 50; Seldom: 25; Never/Almost never: 0

Part two: Work-related burnout

Definition: Work-related burnout is a state of prolonged physical and psychological exhaustion, which is perceived as related to the person's work.

Questions:

1. Is your work emotionally exhausting?
2. Do you feel burnt out because of your work?
3. Does your work frustrate you?
4. Do you feel worn out at the end of the working day?
5. Are you exhausted in the morning at the thought of another day of work?

6. Do you feel that every working hour is tiring for you?
7. Do you have enough energy for family and friends during leisure time?

Response categories:

For the first three questions: To a very high degree, To a high degree, Somewhat, To a low degree, To a very low degree.

For the last question: Always, Often, Sometimes, Seldom, Never/almost never. Reversed score for last question.

Scoring as for first scale:

Part three: Client-related burnout

Definition: Client-related burnout is a state of prolonged physical and psychological exhaustion, which is perceived as related to the person's work with clients*.

*Clients include patients, social service recipients, elderly citizens, or inmates.

Questions:

1. Do you find it hard to work with clients?
2. Do you find it frustrating to work with clients?
3. Does it drain your energy to work with clients?
4. Do you feel that you give more than you get back when you work with clients?
5. Are you tired of working with clients?
6. Do you sometimes wonder how long you will be able to continue working with clients?

Response categories:

For the first four questions: To a very high degree, To a high degree, Somewhat, To a low degree, To a very low degree.

For the two last questions: Always/Often/Sometimes/Seldom/Never/almost never.

Scoring as for the first two scales.

Note: This figure depicts the CBI used within this research. Adapted from: Kristensen, T. S., Borritz, M., Villadsen, E., & Christensen, K. B. (2005). The Copenhagen Burnout Inventory: A new tool for the assessment of burnout. *Work & Stress*, 19(3), 192-207.

Appendix J, 01/06/2023, Version 1**PCL-5**

Instructions: Below is a list of problems that people sometimes have in response to a very stressful experience. Please read each problem carefully and then circle one of the numbers to the right to indicate how much you have been bothered by that problem in the past month.

In the past month, how much were you bothered by:

1. Repeated, disturbing, and unwanted memories of the stressful experience?
2. Repeated, disturbing dreams of the stressful experience?
3. Suddenly feeling or acting as if the stressful experience were actually happening again (as if you were actually back there reliving it)?
4. Feeling very upset when something reminded you of the stressful experience?
5. Having strong physical reactions when something reminded you of the stressful experience (for example, heart pounding, trouble breathing, sweating)?
6. Avoiding memories, thoughts, or feelings related to the stressful experience?
7. Avoiding external reminders of the stressful experience (for example, people, places, conversations, activities, objects, or situations)?
8. Trouble remembering important parts of the stressful experience?
9. Having strong negative beliefs about yourself, other people, or the world (for example, having thoughts such as "I am bad," "There is something seriously wrong with me," "No one can be trusted," "The world is completely dangerous")?
10. Blaming yourself or someone else for the stressful experience or what happened after it?
11. Having strong negative feelings such as fear, horror, anger, guilt, or shame?
12. Loss of interest in activities that you used to enjoy?
13. Feeling distant or cut off from other people?

14. Trouble experiencing positive feelings (for example, being unable to feel happiness or have loving feelings for people close to you)?
15. Irritable behaviour, angry outbursts, or acting aggressively?
16. Taking too many risks or doing things that could cause you harm?
17. Being 'superalert' or watchful or on guard?
18. Feeling jumpy or easily startled?
19. Having difficulty concentrating?
20. Trouble falling or staying asleep?

Scoring for each question:

Not at all (0)

A little bit (1)

Moderately (2)

Quite a bit (3)

Extremely (4)

Cluster Scoring:

Cluster B (items 1-5), cluster C (items 6-7), cluster D (items 8-14), and cluster E (items 15-20).

Symptom Endorsement Scoring:

Treat each answer of 'Moderately', 'Quite a Bit', or 'Extremely' as an endorsed symptom, then use the DSM-5 diagnostic rule which requires 1 B item, 1 C item, 2 D items, and 2 E items from the clusters.

Note. This figure depicts the PCL-5 used within this research. Adapted from: Weathers, F. W., Litz, B. T., Keane, T. M., Palmieri, P. A., Marx, B. P., & Schnurr, P. P. (2013b). *The PTSD Checklist for DSM-5 (PCL-5)*. Retrieved June 1, 2023, from PTSD: National Center for PTSD:

<https://www.ptsd.va.gov/professional/assessment/adult-sr/ptsd-checklist.asp>

MS Forms Survey for Participants

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Burnout and Post-Traumatic Stress Disorder (PTSD) In Jersey Midwives

* Required

Consent Form

Please answer the consent questions to progress to the study questions.
If you do not agree to any of the consent questions, please exit the survey form.

Participants should note that data collected from this project may be retained and published in an anonymised form. By agreeing to participate in this project, you are consenting to the retention and publication of data. Data will be retained for a minimum of 10 years after last use

1. I have read and understood the participant information sheet and I have had the chance to ask questions. *

☐ Yes

2. I understand that my participation is voluntary and that I am free to withdraw my information up to 13th May 2024, without giving any reason. I understand that withdrawal of my data will not be possible once it has been included in the report. *

☐ Yes

3. I understand that the data will be written up as part of a report and that I will not be able to be identified in the report. *

☐ Yes

4. I understand and agree that data collected from this project may be retained in an anonymised form. *

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Mobile

4. I understand and agree that data collected from this project may be retained in an anonymised form. * 

☐ Yes

5. I agree to the anonymous information being used in publications and conferences. * 

☐ Yes

6. I agree to take part in the above study. * 

☐ Yes

7. Please enter your name to agree consent to participate. This will not be linked to your burnout/PTSD assessment and is purely for consent purposes. * 

8. Please enter today's date * 



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14. How often do you feel weak and susceptible to illness? [1]

- ☐ Always
- ☐ Often
- ☐ Sometimes
- ☐ Seldom
- ☐ Never

15. Is your work emotionally exhausting? [1]

- ☐ To a very high degree
- ☐ To a high degree
- ☐ Somewhat
- ☐ To a low degree
- ☐ To a very low degree

16. Do you feel burnt out because of your work? [1]

- ☐ To a very high degree
- ☐ To a high degree
- ☐ Somewhat
- ☐ To a low degree
- ☐ To a very low degree

17. Does your work frustrate you? [1]

- ☐ To a very high degree
- ☐ To a high degree
- ☐ Somewhat
- ☐ To a low degree
- ☐ To a very low degree

18. Do you feel worn out at the end of the working day? [1]

- ☐ Always
- ☐ Often
- ☐ Sometimes
- ☐ Seldom
- ☐ Never

19. Are you exhausted in the morning at the thought of another day at work? [A]

- ☐ Always
- ☐ Often
- ☐ Sometimes
- ☐ Seldom
- ☐ Never

20. Do you feel that every working hour is tiring for you? [A]

- ☐ Always
- ☐ Often
- ☐ Sometimes
- ☐ Seldom
- ☐ Never

21. Do you have enough energy for family and friends during leisure time? [A]

- ☐ Always
- ☐ Often
- ☐ Sometimes
- ☐ Seldom
- ☐ Never

22. Do you find it hard to work with patients? [A]

- ☐ To a very high degree
- ☐ To a high degree
- ☐ Somewhat
- ☐ To a low degree
- ☐ To a very low degree

23. Do you find it frustrating to work with patients? [A]

- ☐ To a very high degree
- ☐ To a high degree
- ☐ Somewhat
- ☐ To a low degree
- ☐ To a very low degree

24. Does it drain your energy to work with patients? 

- ☐ To a very high degree
- ☐ To a high degree
- ☐ Somewhat
- ☐ To a low degree
- ☐ To a very low degree

25. Do you feel that you give more than you get back when you work with patients? 

- ☐ To a very high degree
- ☐ To a high degree
- ☐ Somewhat
- ☐ To a low degree
- ☐ To a very low degree

26. Are you tired of working with patients? 

- ☐ Always
- ☐ Often
- ☐ Sometimes
- ☐ Seldom
- ☐ Never

27. Do you sometimes wonder how long you will be able to continue working with patients? 

- ☐ Always
- ☐ Often
- ☐ Sometimes
- ☐ Seldom
- ☐ Never

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Burnout and Post-Traumatic Stress Disorder (PTSD) In Jersey Midwives

Post-Traumatic Stress Disorder

Below is a list of 20 problems that people sometimes have in response to a very stressful experience.

Please think back to the worst event you have experienced as a midwife.

Keeping your worst event in mind, please read each problem carefully and then select one answer to indicate how much you have been bothered by that problem in the past month.

28. Repeated, disturbing, and unwanted memories of the stressful experience?

☐ Not at all

☐ A little bit

☐ Moderately

☐ Quite a bit

☐ Extremely

29. Repeated, disturbing dreams of the stressful experience?

☐ Not at all

☐ A little bit

☐ Moderately

☐ Quite a bit

☐ Extremely

30. Suddenly feeling or acting as if the stressful experience were actually happening again (as if you were actually back there reliving it)?

☐ Not at all

☐ A little bit

☐ Moderately

☐ Quite a bit

☐ Extremely

31. Feeling very upset when something reminded you of the stressful experience?

☐ Not at all

☐ A little bit

☐ Moderately

☐ Quite a bit

☐ Extremely

32. Having strong physical reactions when something reminded you of the stressful experience (for example, heart pounding, trouble breathing, sweating)? [1]

- ☐ Not at all
- ☐ A little bit
- ☐ Moderately
- ☐ Quite a bit
- ☐ Extremely

33. Avoiding memories, thoughts, or feelings related to the stressful experience? [1]

- ☐ Not at all
- ☐ A little bit
- ☐ Moderately
- ☐ Quite a bit
- ☐ Extremely

34. Avoiding external reminders of the stressful experience (for example, people, places, conversations, activities, objects, or situations)? [1]

- ☐ Not at all
- ☐ A little bit
- ☐ Moderately
- ☐ Quite a bit
- ☐ Extremely

35. Trouble remembering important parts of the stressful experience? [1]

- ☐ Not at all
- ☐ A little bit
- ☐ Moderately
- ☐ Quite a bit
- ☐ Extremely

36. Having strong negative beliefs about yourself, other people, or the world (for example, having thoughts such as: I am bad, there is something seriously wrong with me, no one can be trusted, the world is completely dangerous)? [1]

- ☐ Not at all
- ☐ A little bit
- ☐ Moderately
- ☐ Quite a bit
- ☐ Extremely

37. Blaming yourself or someone else for the stressful experience or what happened after it? [4]

- ☐ Not at all
- ☐ A little bit
- ☐ Moderately
- ☐ Quite a bit
- ☐ Extremely

38. Having strong negative feelings such as fear, horror, anger, guilt, or shame? [4]

- ☐ Not at all
- ☐ A little bit
- ☐ Moderately
- ☐ Quite a bit
- ☐ Extremely

39. Loss of interest in activities that you used to enjoy? [4]

- ☐ Not at all
- ☐ A little bit
- ☐ Moderately
- ☐ Quite a bit
- ☐ Extremely

40. Feeling distant or cut off from other people? [4]

- ☐ Not at all
- ☐ A little bit
- ☐ Moderately
- ☐ Quite a bit
- ☐ Extremely

41. Trouble experiencing positive feelings (for example, being unable to feel happiness or have loving feelings for people close to you)? [4]

- ☐ Not at all
- ☐ A little bit
- ☐ Moderately
- ☐ Quite a bit
- ☐ Extremely

42. Irritable behaviour, angry outbursts, or acting aggressively? 

- ☐ Not at all
- ☐ A little bit
- ☐ Moderately
- ☐ Quite a bit
- ☐ Extremely

43. Taking too many risks or doing things that could cause you harm? 

- ☐ Not at all
- ☐ A little bit
- ☐ Moderately
- ☐ Quite a bit
- ☐ Extremely

44. Being "superalert" or watchful or on guard? 

- ☐ Not at all
- ☐ A little bit
- ☐ Moderately
- ☐ Quite a bit
- ☐ Extremely

45. Feeling jumpy or easily startled? 

- ☐ Not at all
- ☐ A little bit
- ☐ Moderately
- ☐ Quite a bit
- ☐ Extremely

46. Having difficulty concentrating? 

- ☐ Not at all
- ☐ A little bit
- ☐ Moderately
- ☐ Quite a bit
- ☐ Extremely

47. Trouble falling or staying asleep? 

- ☐ Not at all
- ☐ A little bit
- ☐ Moderately
- ☐ Quite a bit
- ☐ Extremely

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Burnout and Post-Traumatic Stress Disorder (PTSD) In Jersey Midwives

Results and Future Contact

48. Would you like to know your individual screening results, be informed of the study findings, or be contacted in the future should further research be planned?

☐ Yes

☒ No

You can print a copy of your answer after you submit

Back Submit

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* Required

Contact Details

49. Please select what contact you would like (choose as many as apply):

☐ I would like to know my individual screening results

☐ I would like to be informed of the study findings

☐ I would like to be contacted in the future should further research be planned

50. Email addresses will not be used for any other purpose, only for the purpose(s) you have selected in the previous question.

Please enter your email address *

Enter your answer

51. Please confirm your email address *

Enter your answer

You can print a copy of your answer after you submit

Back Submit

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Note. These figures all depict the MS Forms survey presented to participants, inclusive of consent form.

Academic Supervision Record



University of
Chester

Student Name:	
Academic Supervisor:	

[illegible]



Record of Contact	
It is the student's responsibility to complete a record sheet for each supervisory meeting	
Date/Time/Duration:	26.03.24 / 11.30-12.30 / 1 hour
Work Submitted before meeting:	Draft of methodology design
Supervisor (s) present:	

What was discussed	Plan of action agreed
Comments on first draft of design/methodology including grammar, references, suggested amendments and improvements.	Comments emailed to me to refer to when working on next draft. Continue with proposed timeline for draft submissions

Date of next meeting 13th May 2024

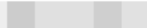
Signature Student:



Signature Supervisor:



Date 26.03.25

Record of Contact It is the student's responsibility to complete a record sheet for each supervisory meeting	
Date/Time/Duration:	13.05.24, 1500-1600, 1hr
Work Submitted before meeting:	Draft literature review and introduction
Supervisor (s) present:	

What was discussed	Plan of action agreed
Lit review focus is too broad for word limit in an MSc. Suggested improvements to introduction.	Total rewrite needed. Reduce scope of studies from 80+ to max of 20. Focus on UK-only studies for full analysis, then briefly incorporate global studies in terms of prevalences found. Minor amendments on introduction to be made.

Date of next meeting TBC

Signature Student:



Signature Supervisor:



Date 13.05.24

Record of Contact	
It is the student's responsibility to complete a record sheet for each supervisory meeting	
Date/Time/Duration:	10.03.25
Work Submitted before meeting:	Findings, and plan for final chapters (sent September 2024)
Supervisor (s) present:	HP

What was discussed	Plan of action agreed
Catch up as long period of ill health prevented working on dissertation. Discussed difficulties of completing dissertation with ongoing ill health. No further deferrals being considered at the moment, as need to get assignment submitted to be able to rest and recuperate. Discussed draft findings/final chapter plan that had been submitted before health break, now a bit out of date with new literature review.	To focus on lit review <u>total</u> re-write first and get this reassessed during next supervision meeting. Rework findings to fit with altered literature review. Progress to other chapters.

Date of next meeting 09.04.25

Signature Student:



Signature Supervisor:



Date 10.03.25

Record of Contact It is the student's responsibility to complete a record sheet for each supervisory meeting	
Date/Time/Duration:	09.04.25, 1500-1600, 1hr
Work Submitted before meeting:	Literature Review Rewrite
Supervisor (s) present:	

What was discussed	Plan of action agreed
Moving analysis further ahead rather than at end. Areas where analysis could be strengthened Impacted by continuing health problems	Amendments to be made including moving analysis, strengthening arguments. Advised areas that can be cut down to reduce word length.

Date of next meeting N/A – ad hoc email support as and when required.

Signature Student:



Signature Superviso



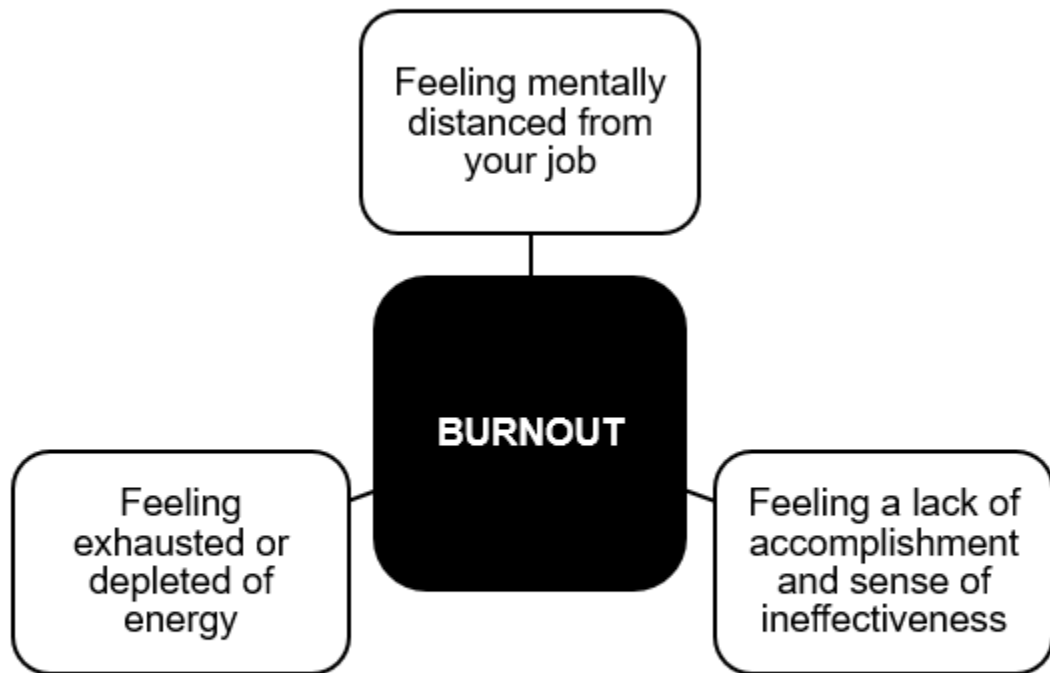
Date 09.04.25

Thank you for maintaining this record of supervisory contact.

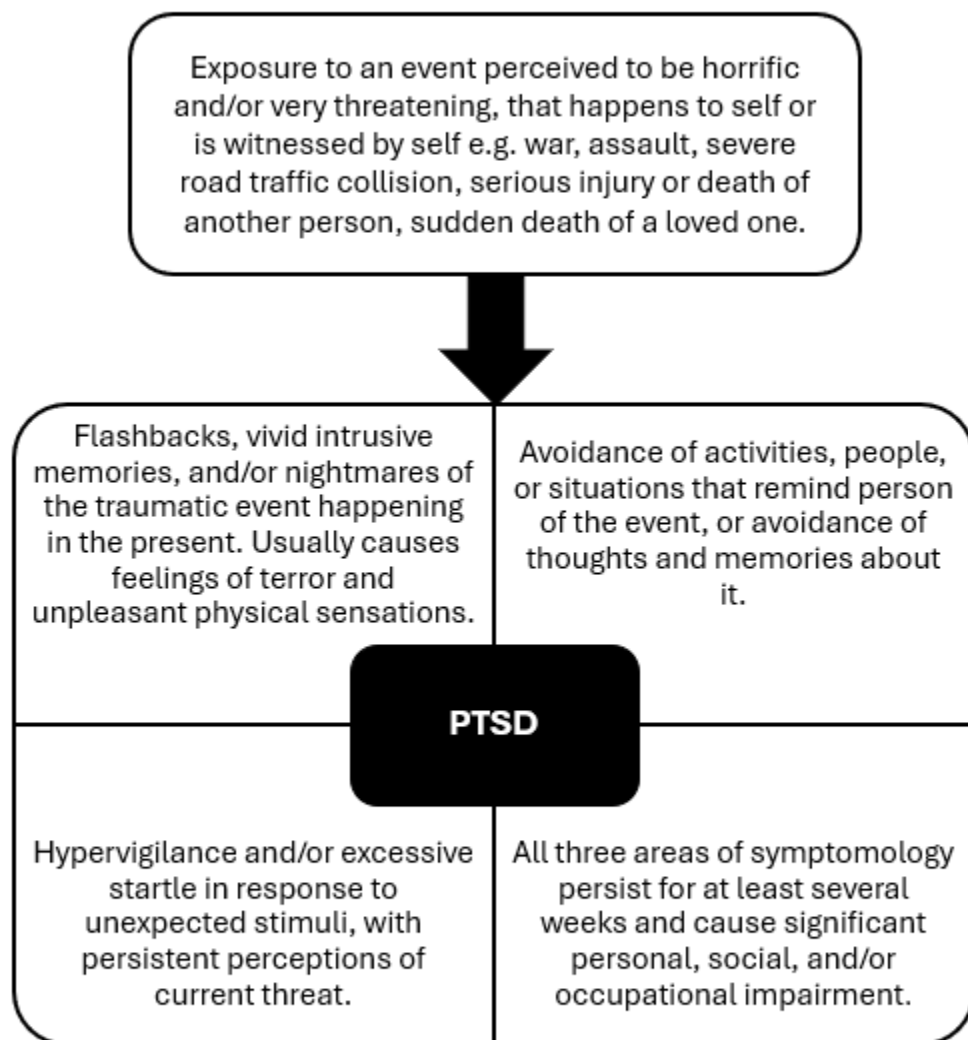
Note. These figures depict the record of supervision between candidate and supervisor. Names have been redacted for anonymity.

Appendix M, 26/04/2025

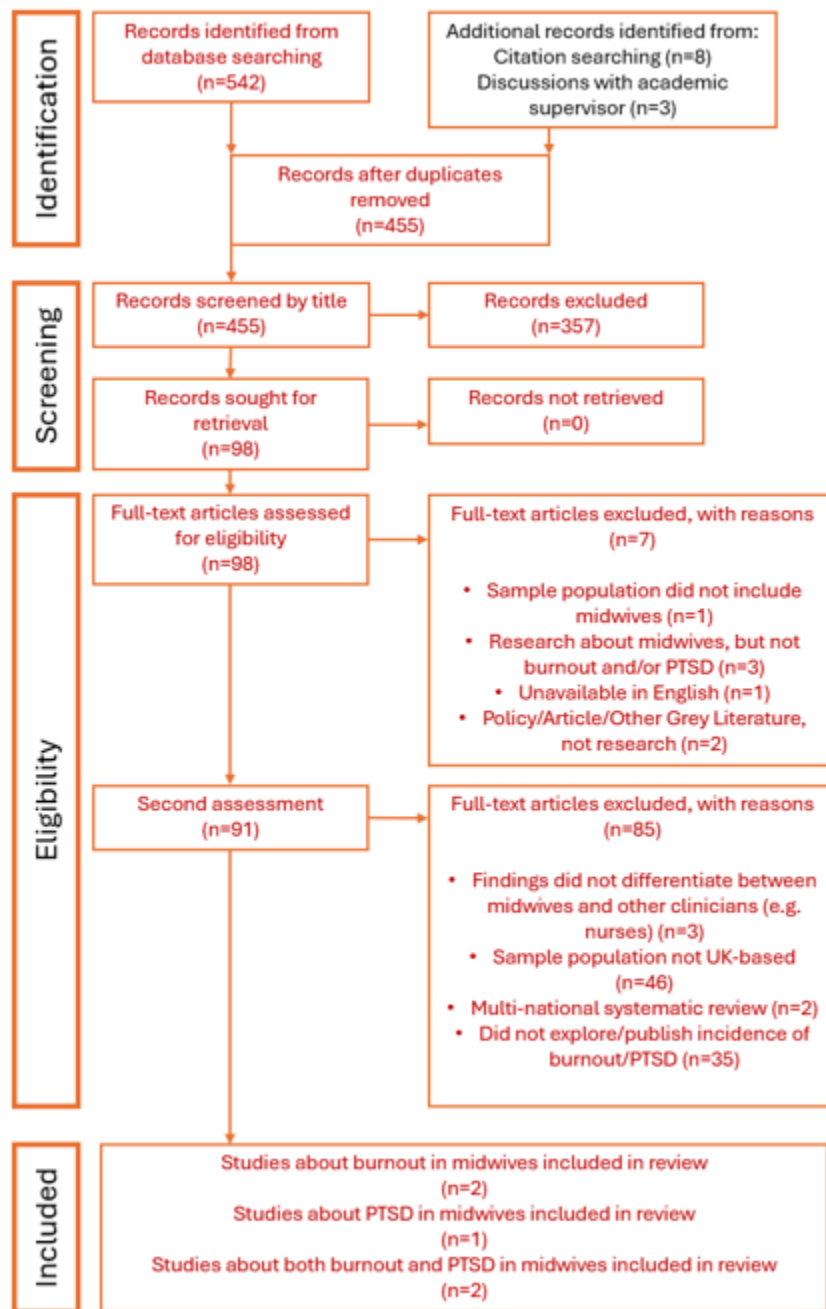
All Figures and All Tables

Figure 1*Radial Cluster Depicting the 3 Dimensions of Burnout*

Note. This figure depicts a radial cluster showing the 3 dimensions of burnout. To emphasise that the dimensions can occur alone (without burnout) or together (burnout), the definition has been shown pictorially as opposed to a direct quote. Adapted from: World Health Organisation. (2025). *QD85 Burnout*. ICD-11 for Mortality and Morbidity Statistics 2025-01: <https://icd.who.int/browse/2025-01/mms/en#129180281>

Figure 2*Matrix Depicting the Major Criteria of PTSD*

Note. This figure depicts a matrix showing the criteria of PTSD symptoms necessary for diagnosis. To emphasise that the dimensions can occur alone (non-PTSD) or together (PTSD), the definition has been shown pictorially as opposed to a direct quote. Adapted from: World Health Organisation. (2025). 6B40 Post traumatic stress disorder. ICD-11 for Mortality and Morbidity Statistics 2025-01: <https://icd.who.int/browse/2025-01/mms/en#129180281>

Figure 3*Literature Review Strategy Flow Diagram*

Note. This figure depicts the literature review in flow diagram format. The format has been adapted from the PRISMA diagram: Haddaway, Page, Pritchard & McGuinness. (2022). PRISMA2020: An R package and Shiny app for producing PRISMA 2020-compliant flow diagrams, with interactivity for optimised digital transparency and Open Synthesis. *Campbell Systematic Reviews*, 18(2), e1230. DOI: 10.1002/cl2.1230

Figure 4

Predictive and preventative factors, Outcomes and Conflicting Findings Identified in the Burnout Studies

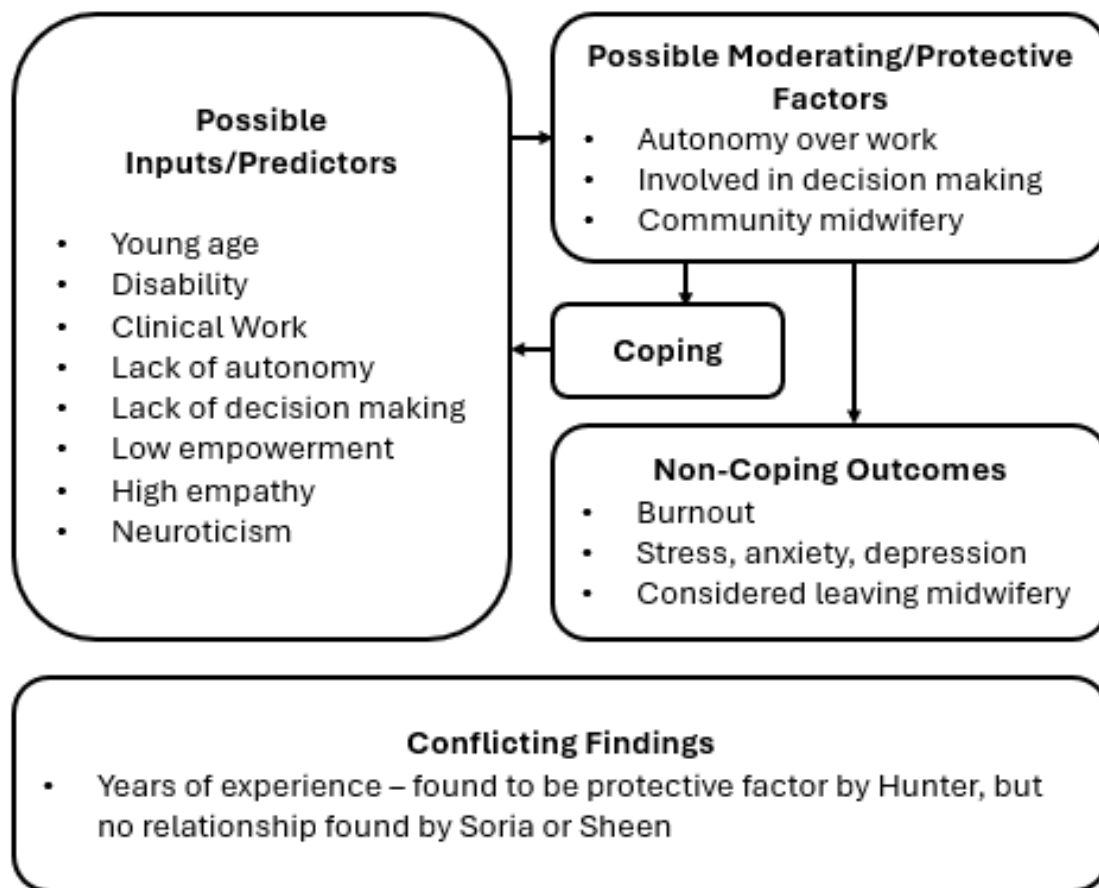


Figure 5

Predictive and Preventative Factors, Outcomes and Conflicting Findings Identified in the PTSD Studies

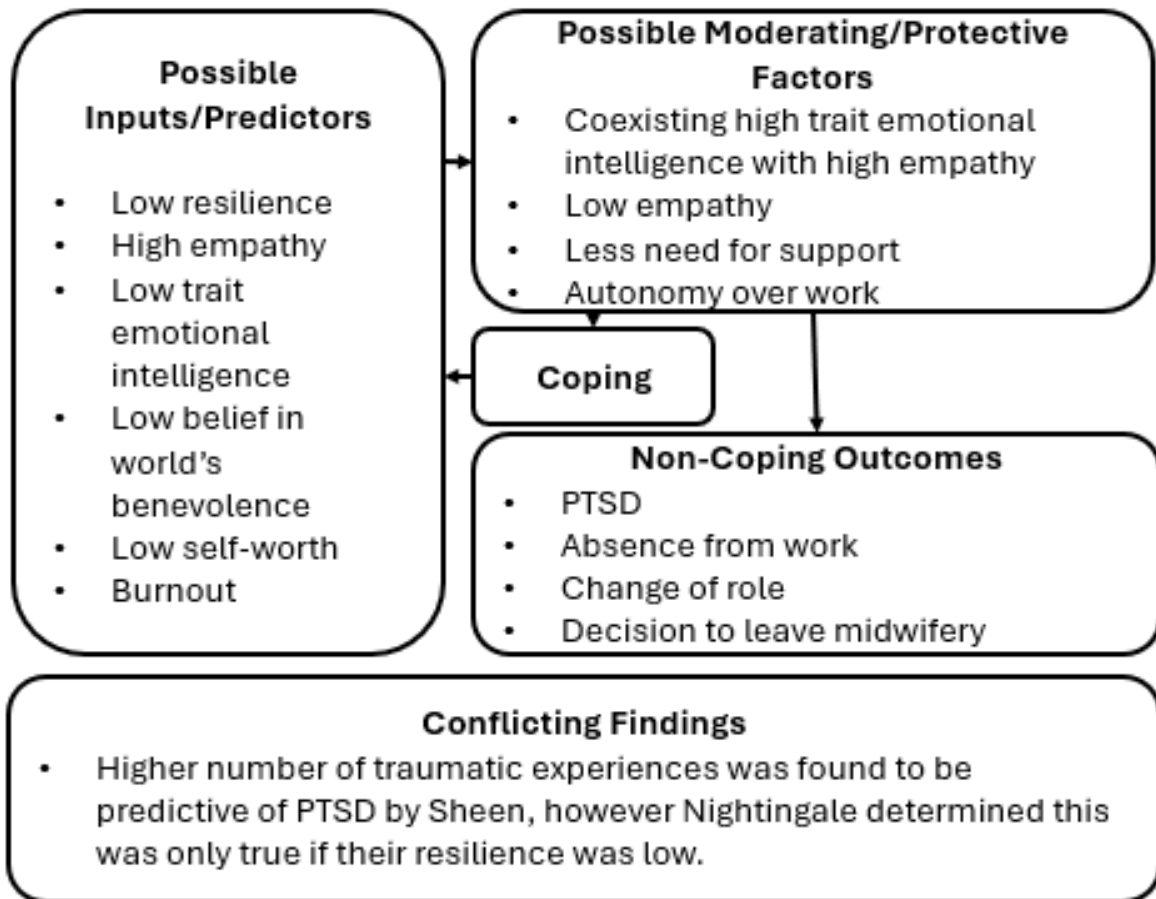
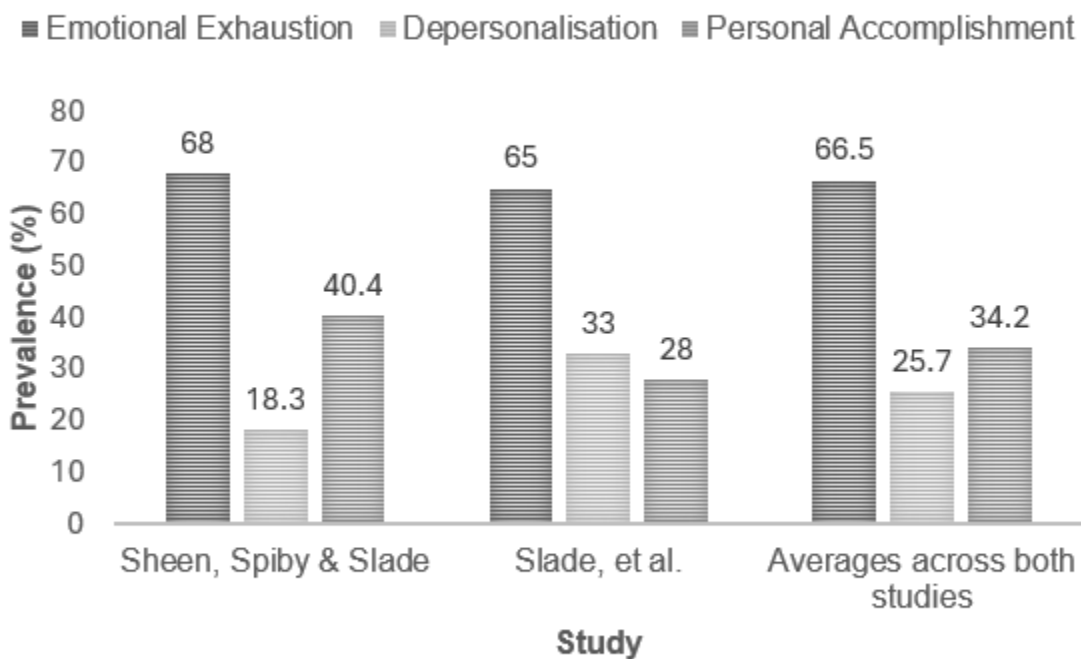


Figure 6

Prevalence of Burnout in Each CBI Domain



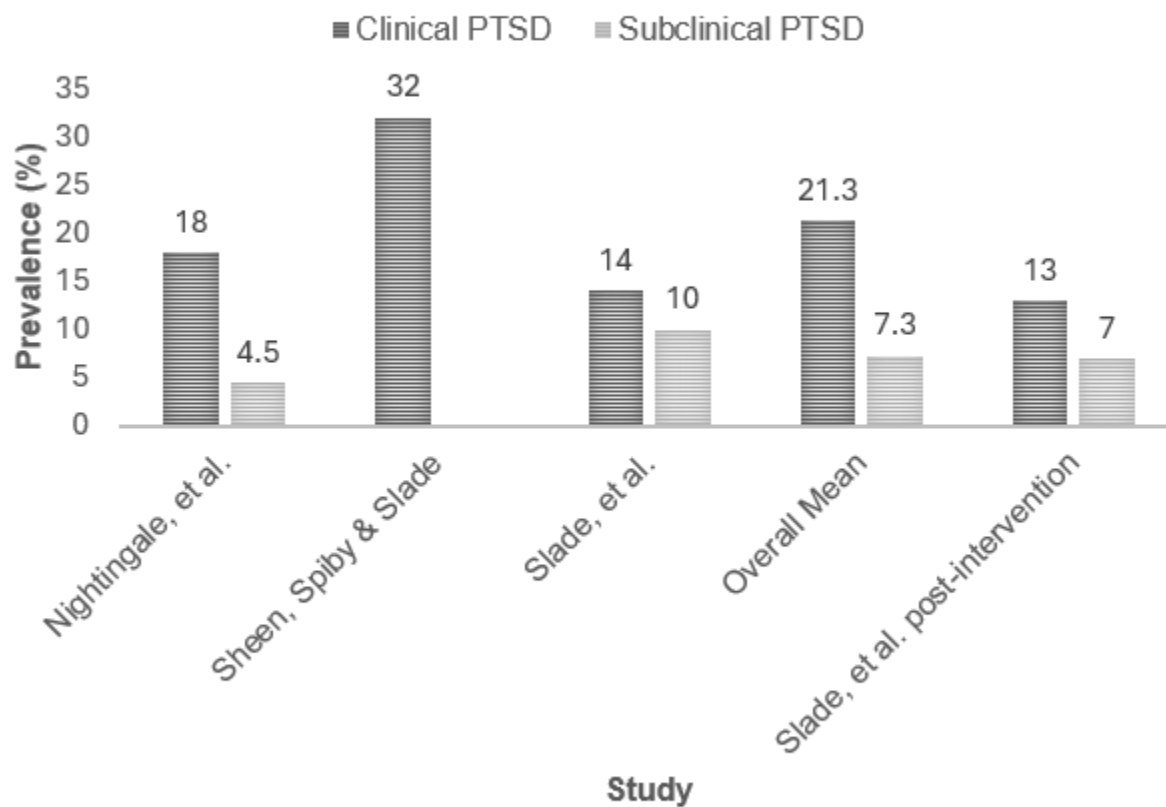
Note. This figure depicts the prevalence of burnout found in each UK study that utilised the CBI. Mean averages of the two studies are also presented

Figure 7*Prevalence of Burnout in Each MBI Domain*

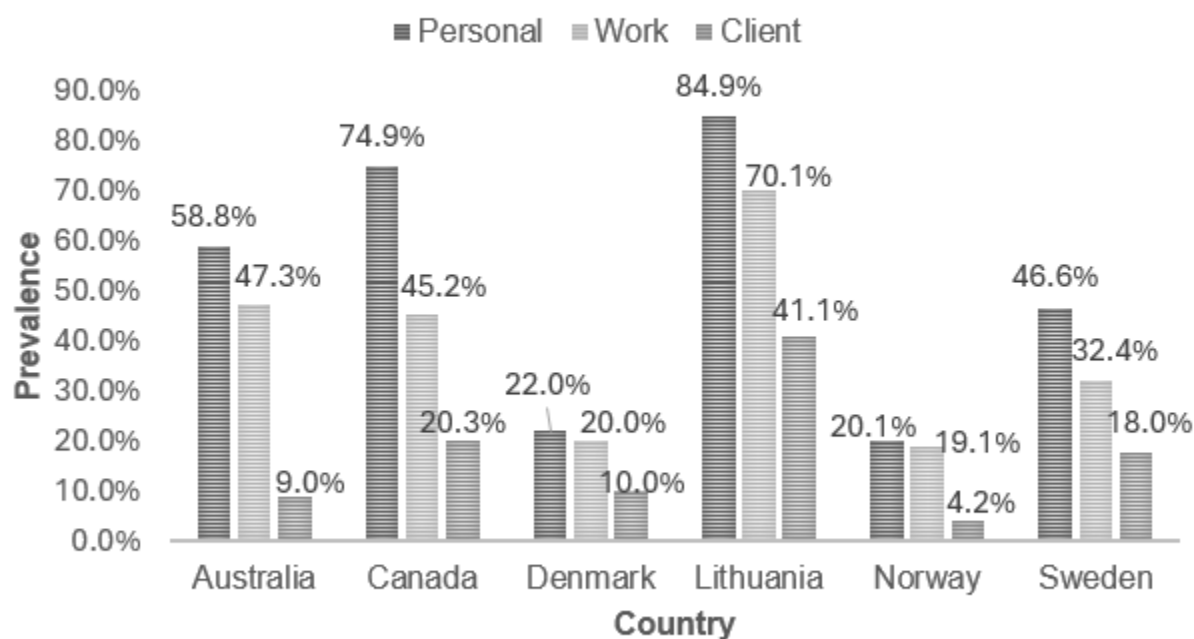
Note. This figure depicts the prevalence of burnout found in each UK study that utilised the MBI. Mean averages of the two studies are also presented

Figure 8

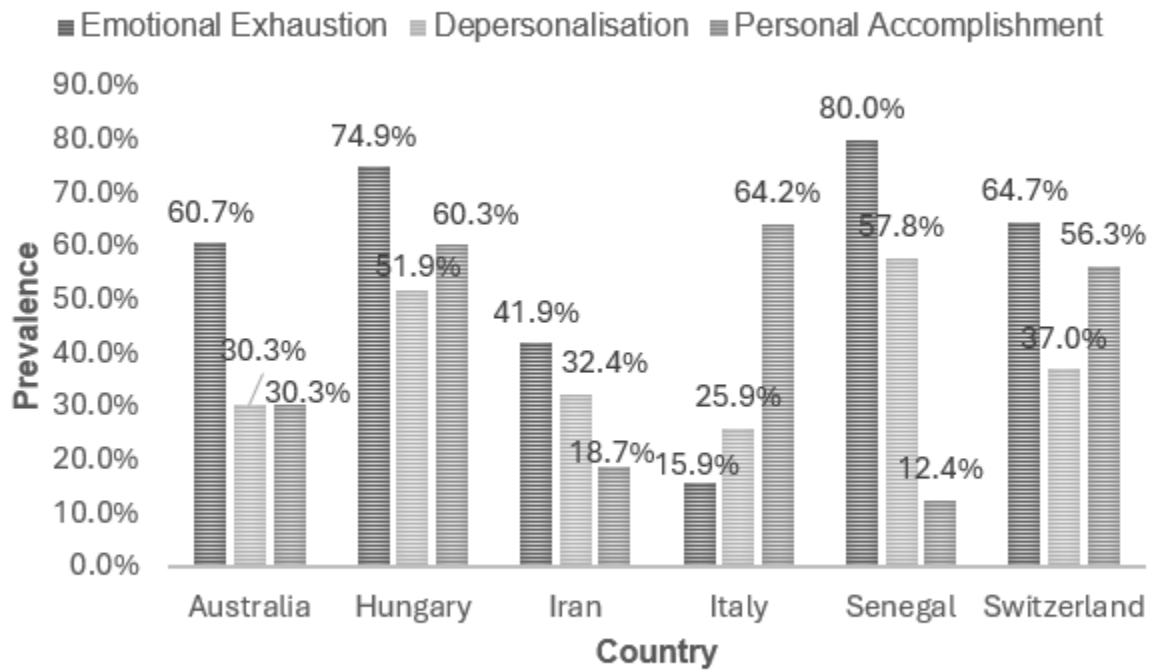
Prevalence of PTSD and Sub-Clinical PTSD



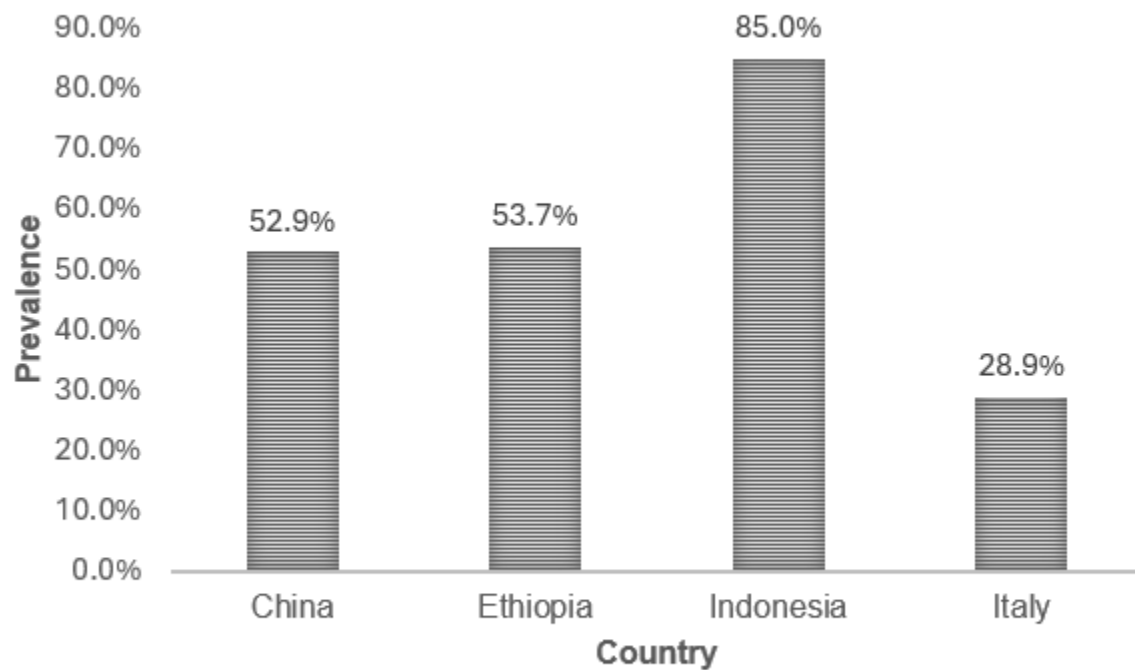
Note. This figure depicts the prevalence of PTSD and sub-clinical PTSD found in each UK study. Mean averages of the studies are also presented, as well as the post-intervention prevalences from Slade *et al.*

Figure 9*Prevalence of Burnout in Each CBI Domain (Global)*

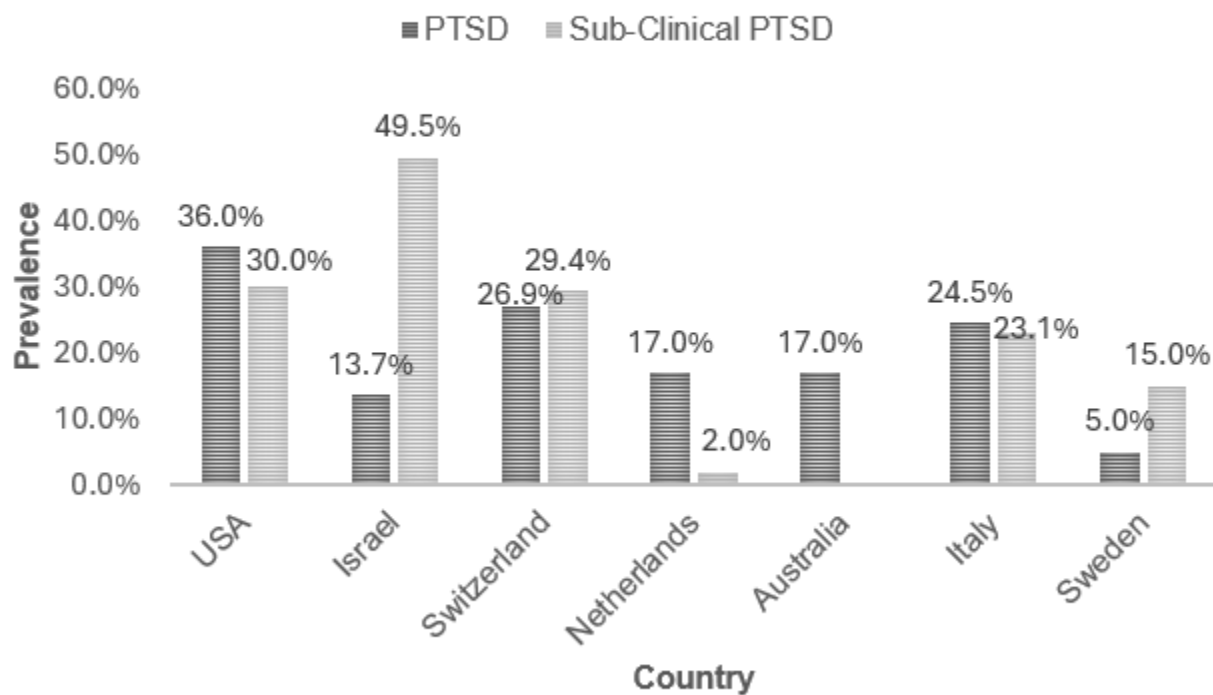
Note. This figure depicts the mean prevalence of burnout found in each country that utilised the CBI for research.

Figure 10*Prevalence of Burnout in Each MBI Domain (Global)*

Note. This figure depicts the mean prevalence of burnout found in each country that utilised the MBI for research.

Figure 11*Prevalence of Burnout in Each MBI Domain (Global)*

Note. This figure depicts the prevalence of burnout found in each country that utilised tools other than the CBI/MBI.

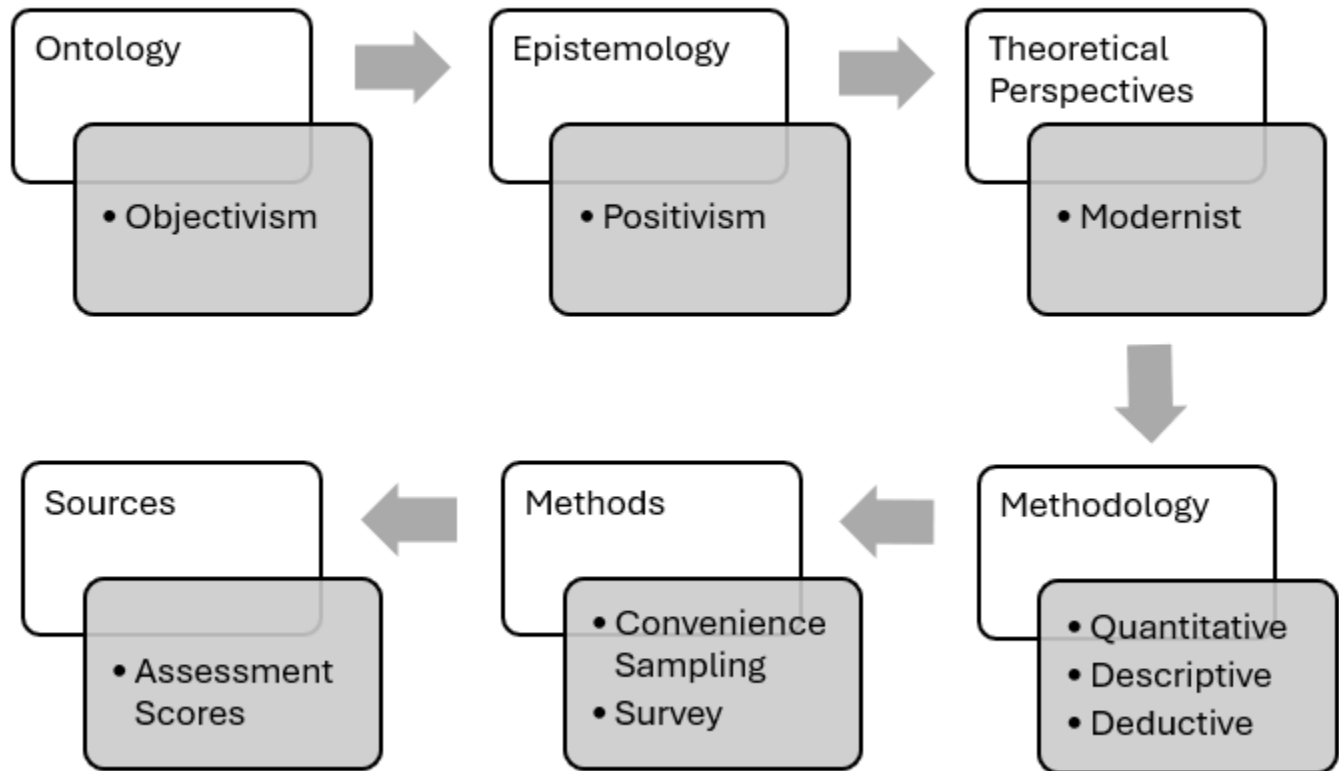
Figure 12*Prevalence of PTSD and Sub-Clinical PTSD (Global)*

Note. This figure depicts the prevalence of PTSD and sub-clinical PTSD found in each country.

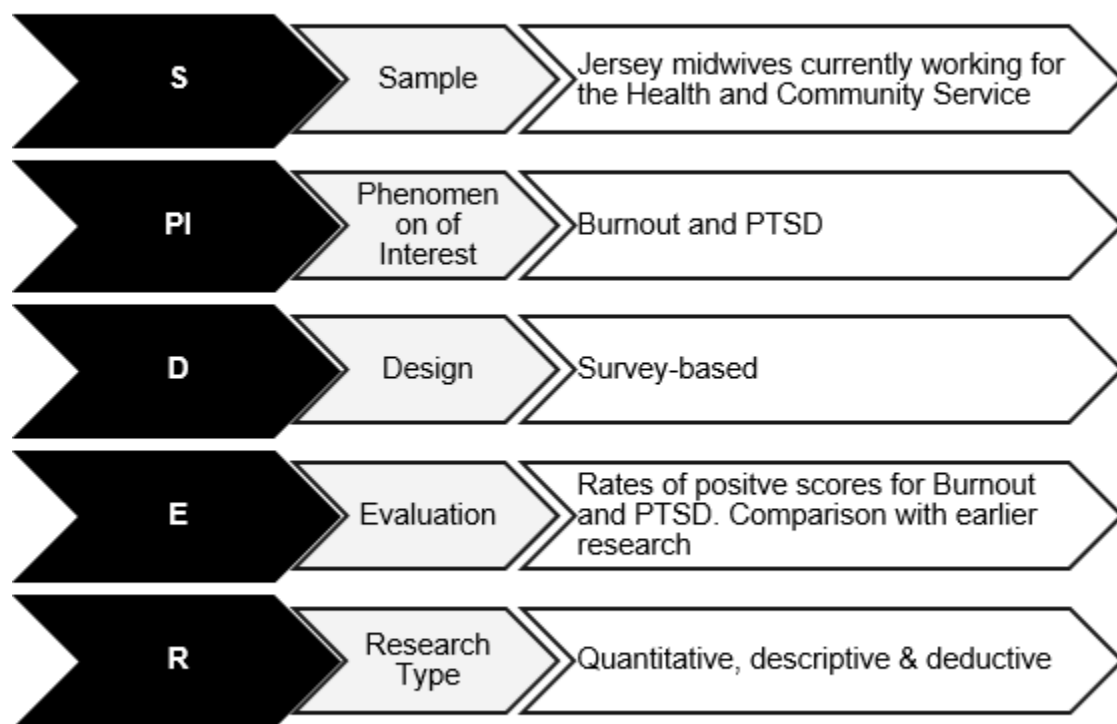
Figure 13*Research Design Process*

Step 1	The initial thought to build a house
•The initial idea to explore prevalence of burnout and PTSD in Jersey midwives is thought of.	
Step 2	Choosing what type of house to build
•The researcher's underpinning theoretical beliefs help to establish what type of research will establish the desired findings.	
Step 3	Drafting the blueprint and organising materials
•Designing the research including methodology, data collection methods, and sources of data.	
Step 4	Building works
•The research begins. Data collection and analysis takes place.	
Step 5	The house is built
•The research produces its findings.	
Step 6	Moving in and adding a conservatory
•Discussion of the findings takes place. The findings may prompt for further research in the topic area.	

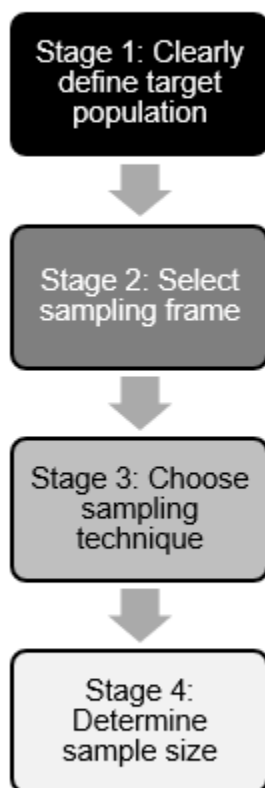
Note. This figure depicts the steps taken to develop the research design. Adapted from: Grant, C. & Osanloo, A. (2014). Understanding, Selecting, and Integrating a Theoretical Framework in Dissertation Research: Creating the Blueprint for Your "House". *Administrative Issues Journal: Connecting Education, Practice, and Research*, 4(2), 12-26

Figure 14*Philosophical and Theoretical Flowchart*

Note. This figure depicts the philosophical and theoretical perspectives that guided the research

Figure 15*SPIDER Tool for Question Formation*

Note. This figure depicts the SPIDER tool used to formulate the research questions. Adapted from: Cooke, A., Smith, D., & Booth, A. (2012) Beyond PICO: the SPIDER tool for qualitative evidence synthesis. *Qualitative Health Research*, 22, 1435-1443

Figure 16*Sample Decision Process*

Note. This figure depicts the process of deciding sample size. Adapted from: Taherdoost, H. (2016). Sampling Methods in Research Methodology; How to Choose a Sampling Technique for Research. *International Journal of Academic Research in Management*, 5(2), 18-27. DOI: 10.2139/ssrn.3205035

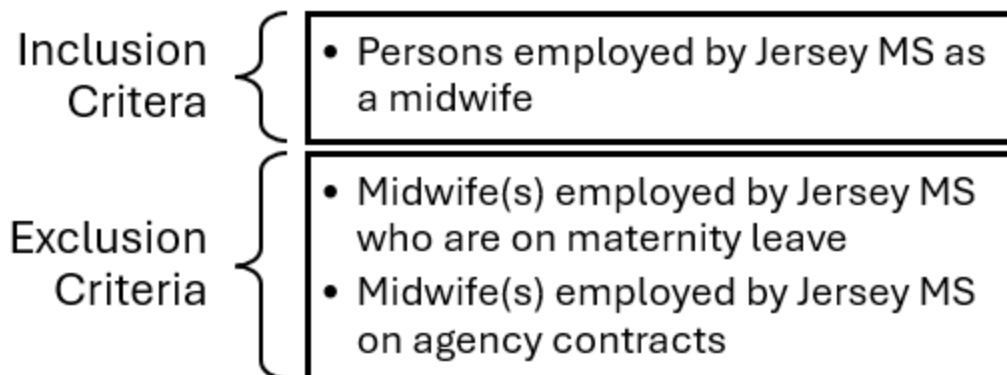
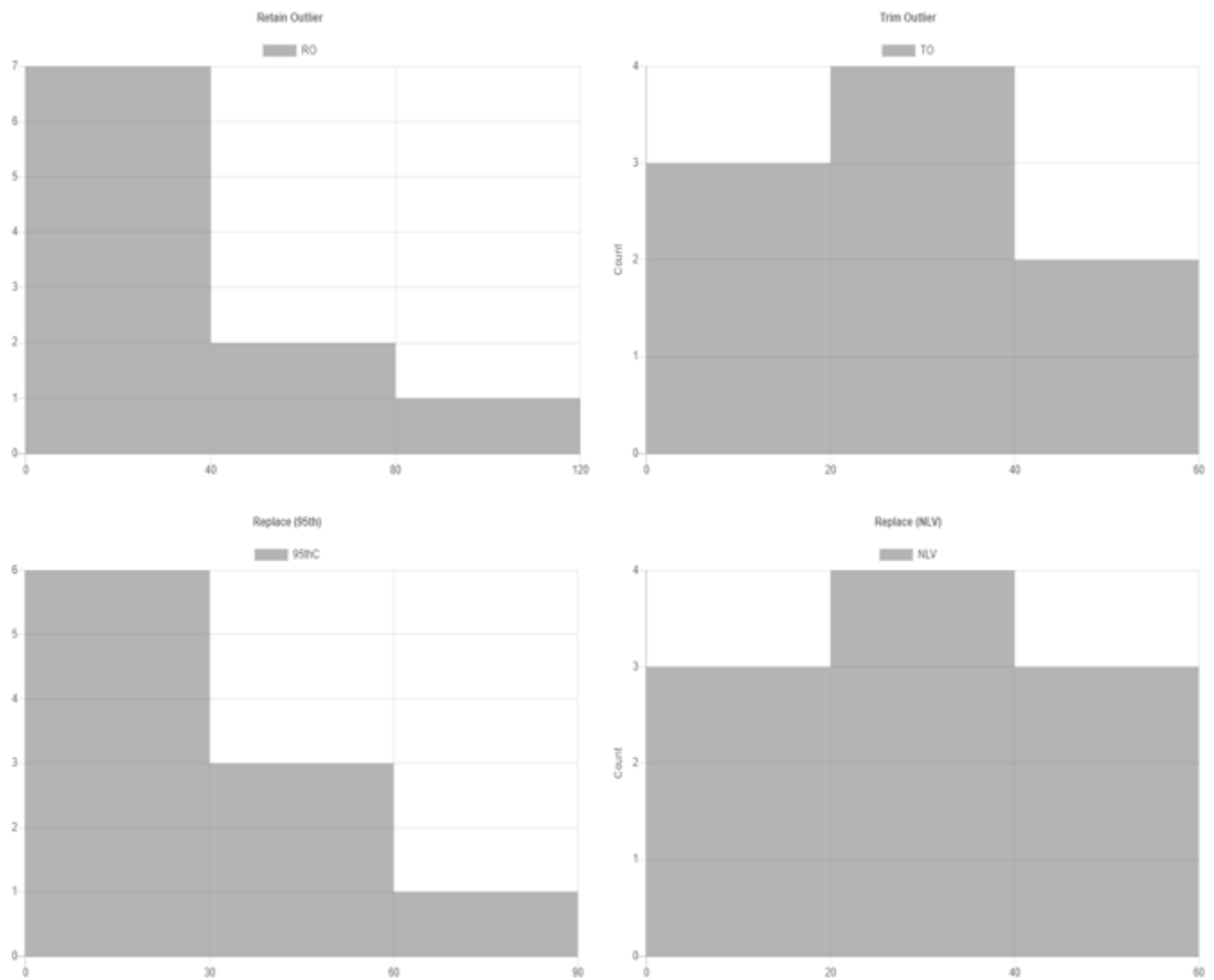
Figure 17*Inclusion and Exclusion Criteria*

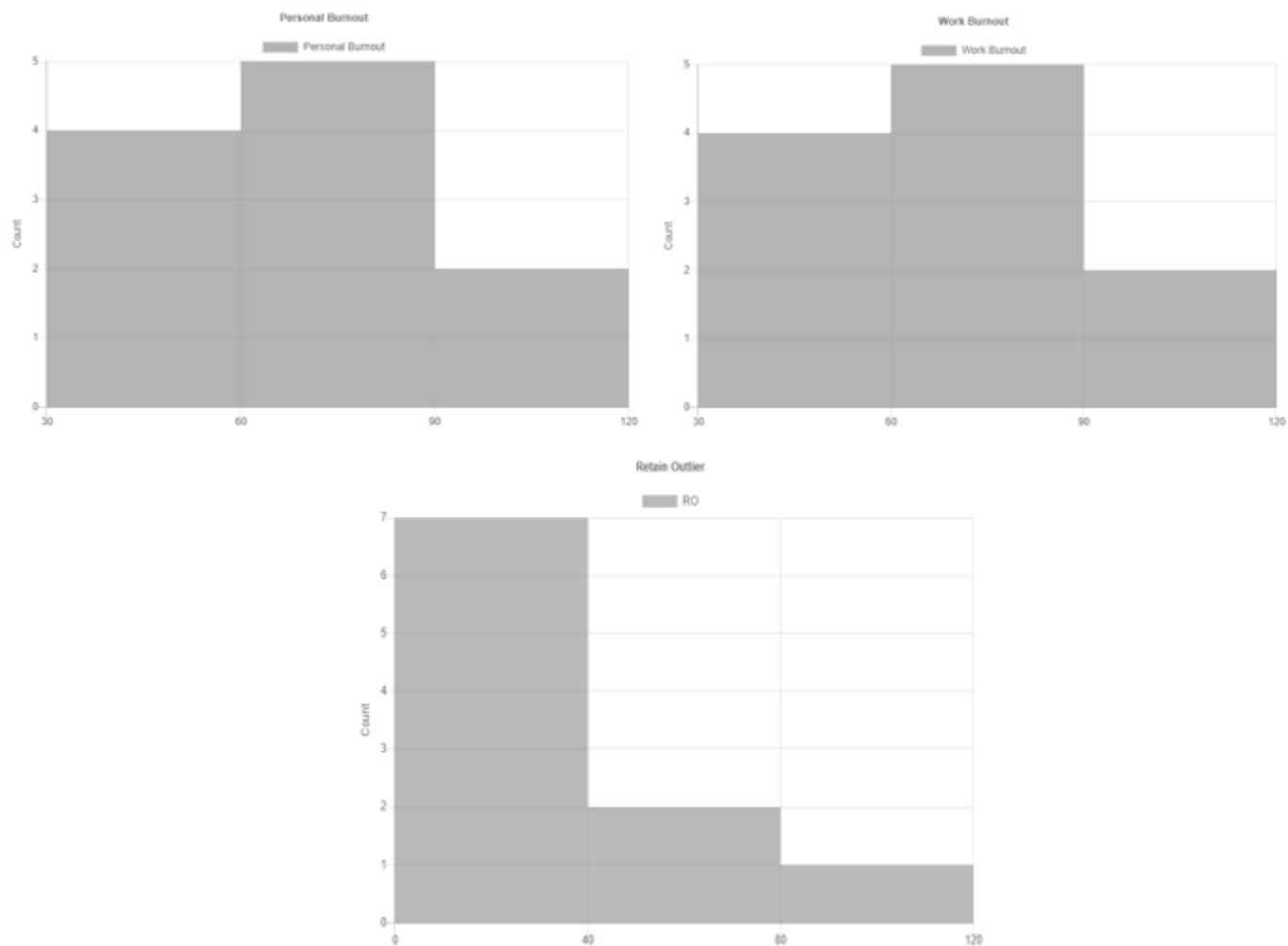
Figure 18

Data Analysis Process

Foundation for Data Analysis	
A	Collate Research Data
	• Export of surveys into Excel document and identify missing data • AutoSum formulas to calculate burnout and PTSD scores for each participant • Presentation of raw scores in tables • Determine severity of burnout for each participant by comparing scores to pre-defined ranges and labelling as appropriate • Complete Symptom Endorsement PTSD scoring on each response and label PTSD diagnostic status
B	Assessment of Outliers
	• Use Stem and Leaf Tables to assess participant scores for outliers • +/- Grubbs Test (1950) to determine significance of outliers if any found • Further assessment of outliers to be determined if any proven to be statistically significant
C	Collate Other Research Data
	• Collate all prevalences found in UK and Global research • Calculate mean prevalences for countries with >1 research study
D	Presentation of Descriptive Data
	• Excel formulas to calculate central tendencies (mean and median, exclude mode) and minimum/maximum scores. Histograms for dispersion of data • Graphical presentation of central tendencies and minimum/maximum • Table and narrative presentation of prevalences • Graphical presentations of research data alongside UK and Global data
Secondary Analysis	
D	Comparative Analysis Options
	These choices are dependent on the data obtained during the research and will be explored once data is known (e.g. sample size, distribution, earlier research findings). Tests that may be appropriate include: • Chi-Square / Z-Test / Fisher's exact test for Jersey-UK comparisons • Chi-Square / ANOVA / Kruskal-Wallis Test for global comparisons

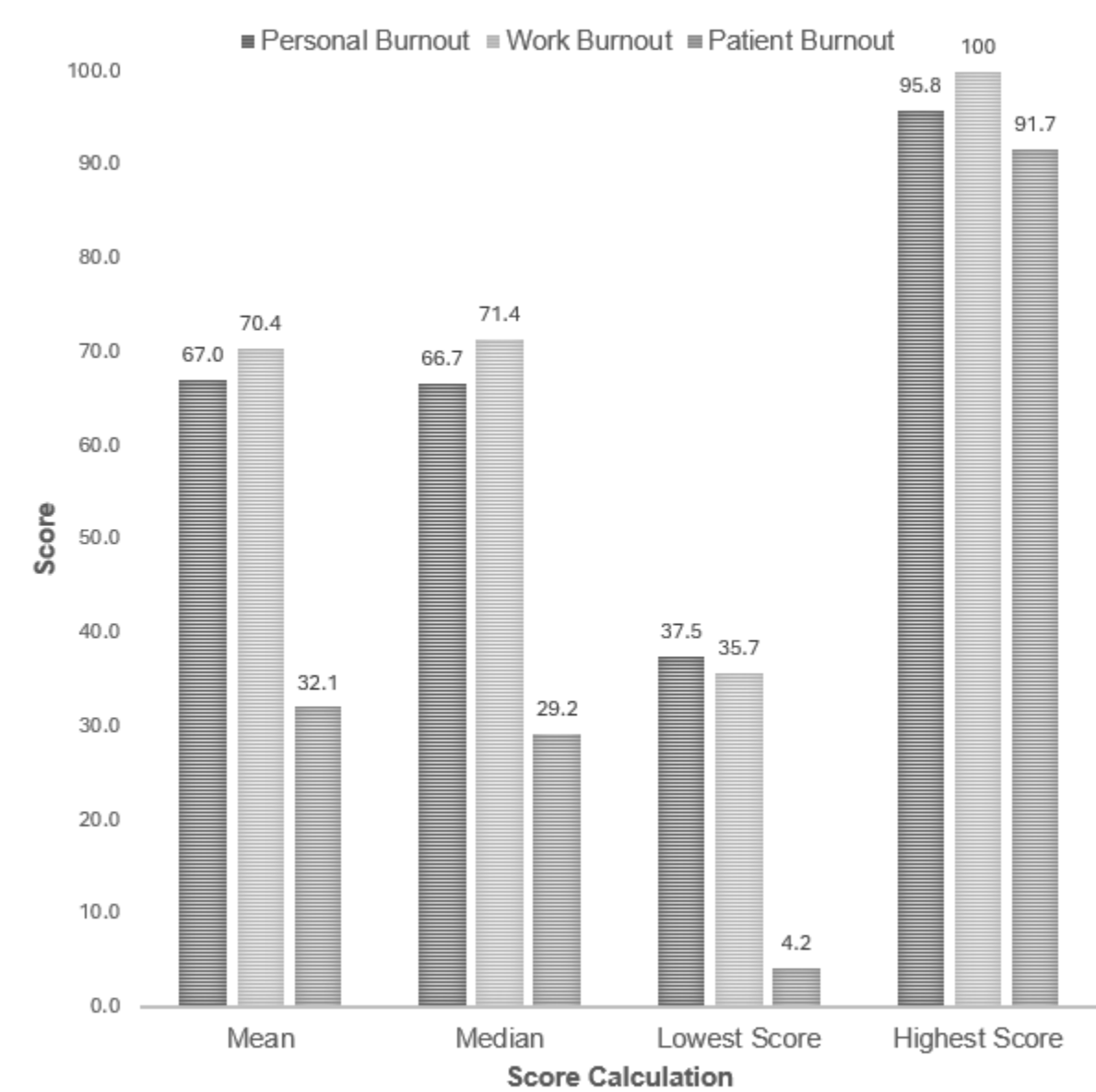
Figure 19*Outlier Control Histograms*

Note. This figure depicts histograms of the data distribution after controlling for the outlier. Clockwise from the top left: Retaining Outlier, Trimming Outlier, Winsorization (Next Largest Value), and Winsorization (95th centile).

Figure 20*Histograms of Each Burnout Domain*

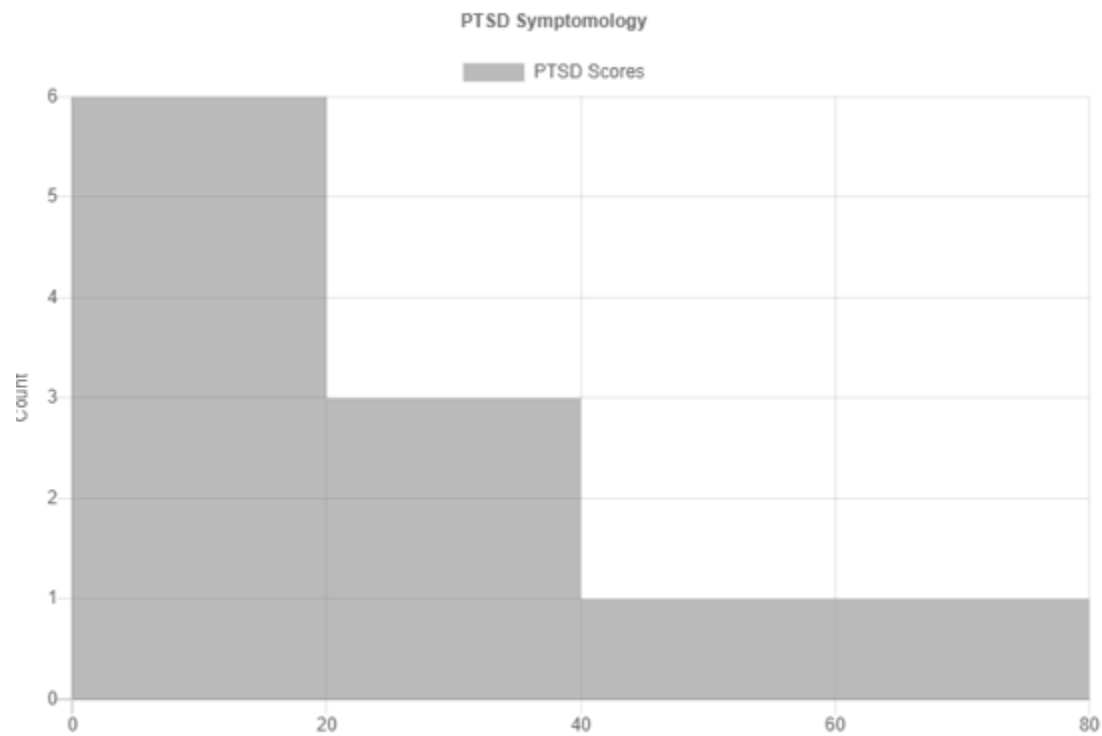
Note. This figure depicts histograms of the data distribution for Personal and Work domains, along with the Patient Domain retaining the outlier. Clockwise from top left: Personal domain, Work domain, Patient domain.

Figure 21
Central Tendencies, Lowest and Highest Burnout Scores



Note. This figure depicts the mean, median, lowest, and highest scores obtained in the research for each burnout domain.

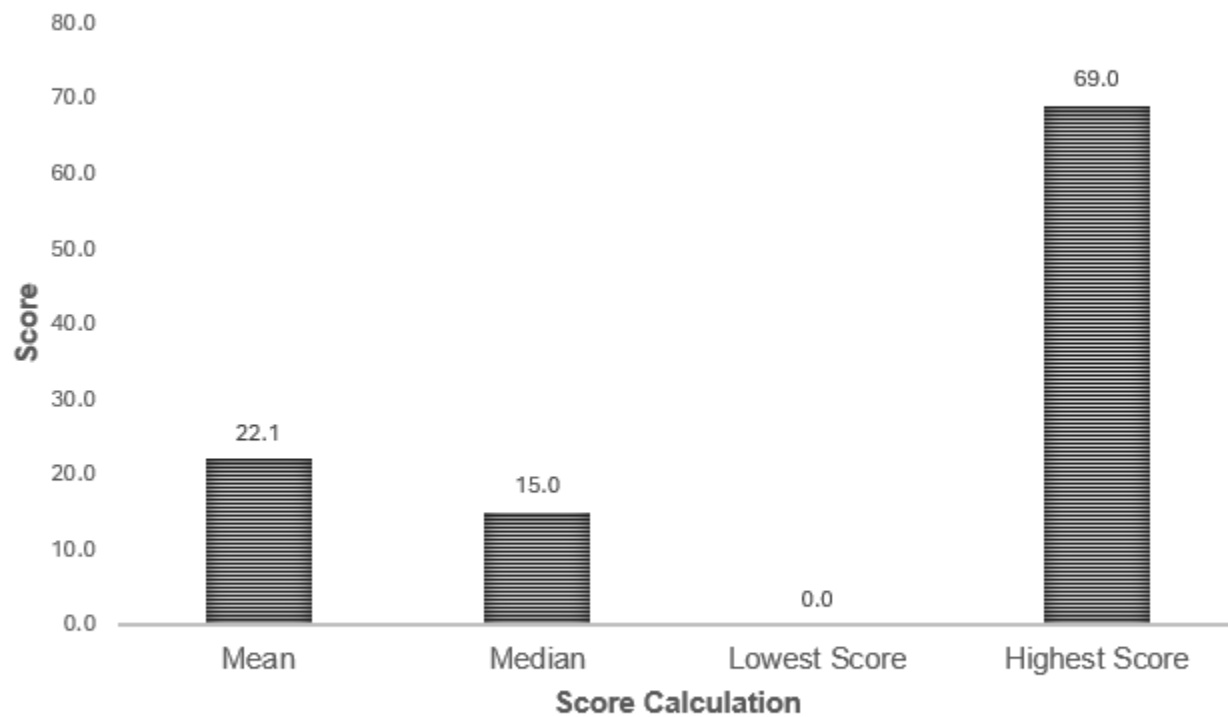
Figure 22
Histograms of PTSD Scores



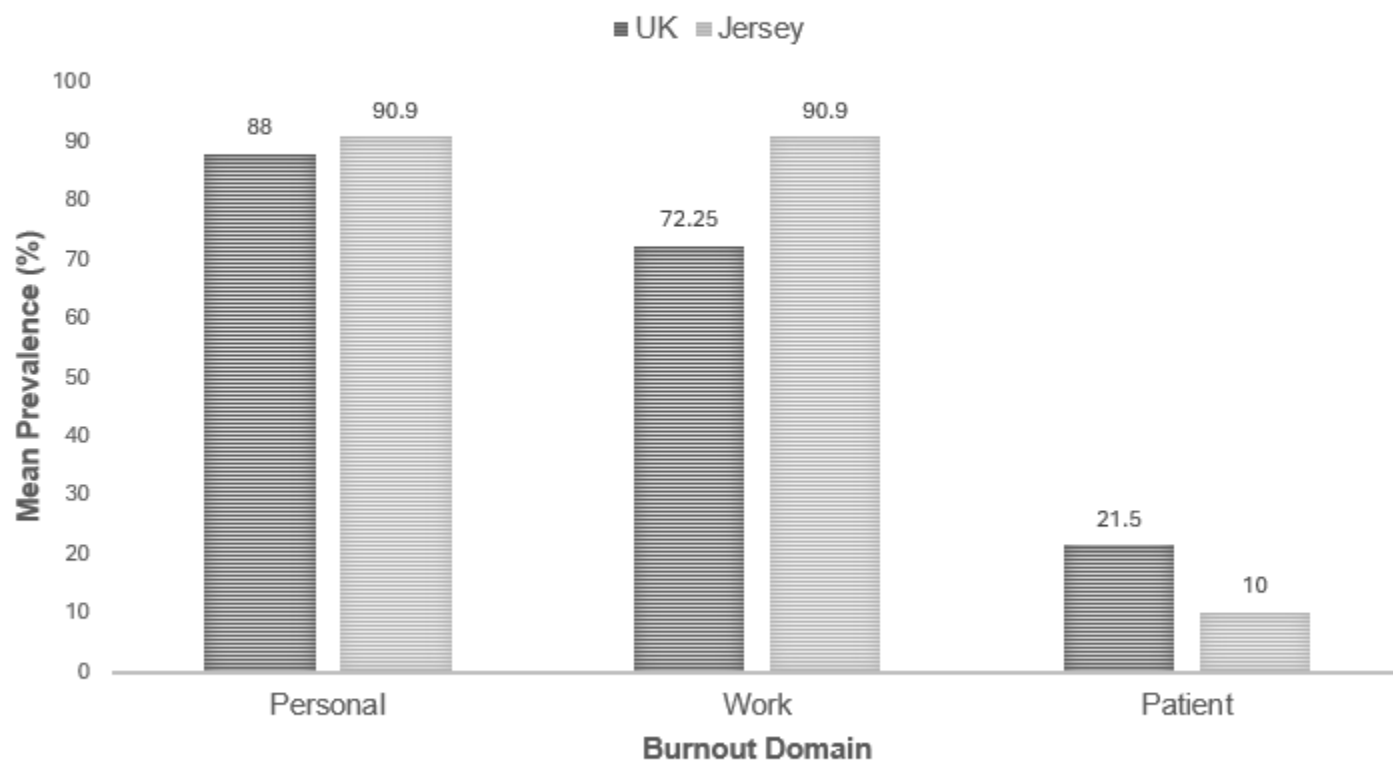
Note. This figure depicts histograms of the data distribution for PTSD scores.

Figure 23

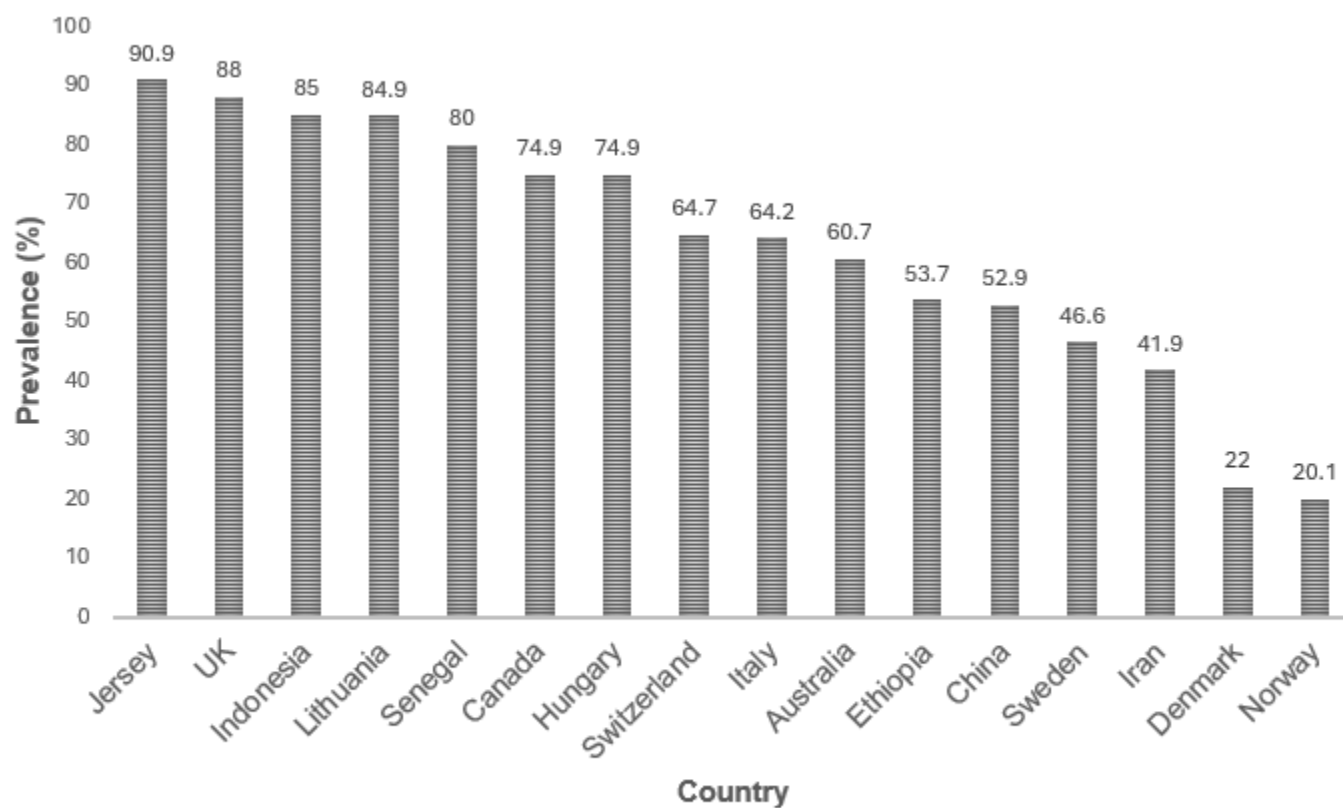
Central Tendencies, Lowest and Highest Burnout Scores



Note. This figure depicts the mean, median, lowest, and highest scores obtained in the research for PTSD.

Figure 24*UK and Jersey Burnout Prevalences by Domain*

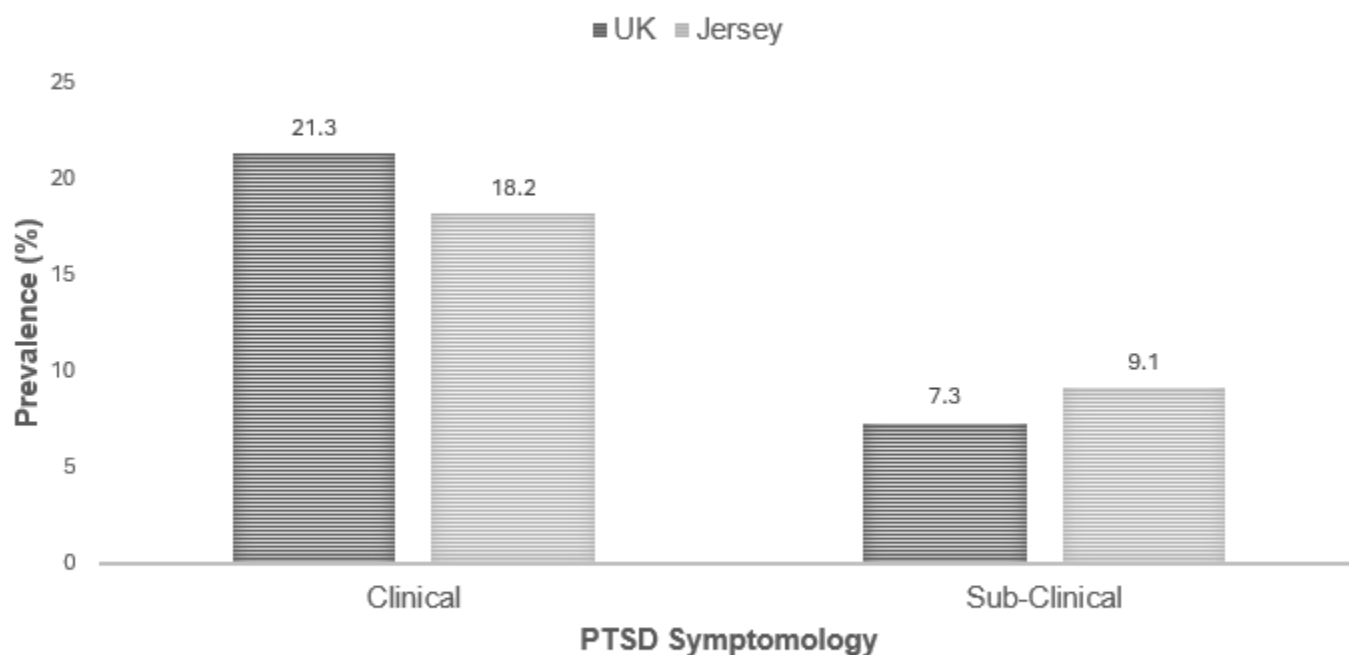
Note. This figure depicts the prevalences for burnout in each domain for the Jersey participants (n=11) and UK studies

Figure 25*Global Burnout Prevalences by Highest Domain*

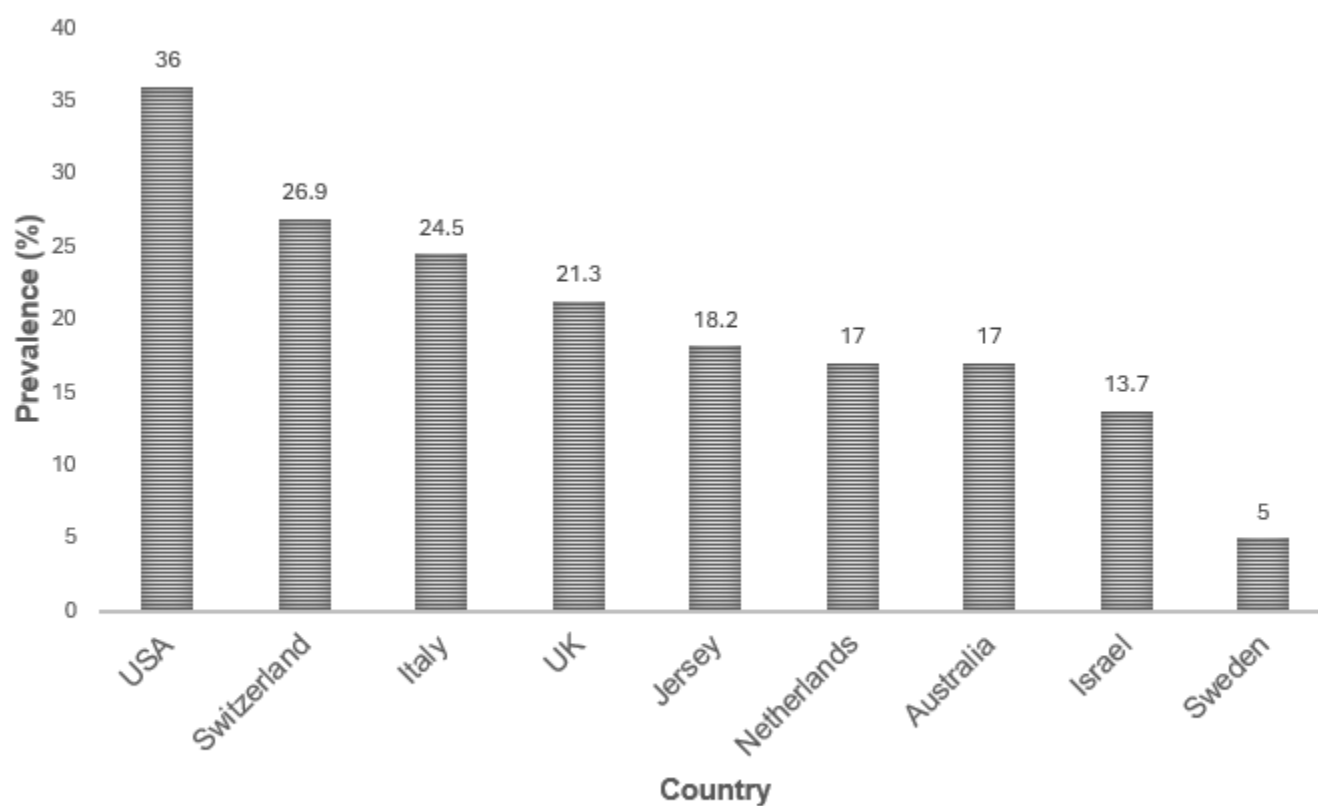
Note. This figure depicts the prevalence of burnout (regardless of domain) in the global research compared with that found in the Jersey participants (n=11). The mean was taken where countries produced more than one study.

Figure 26

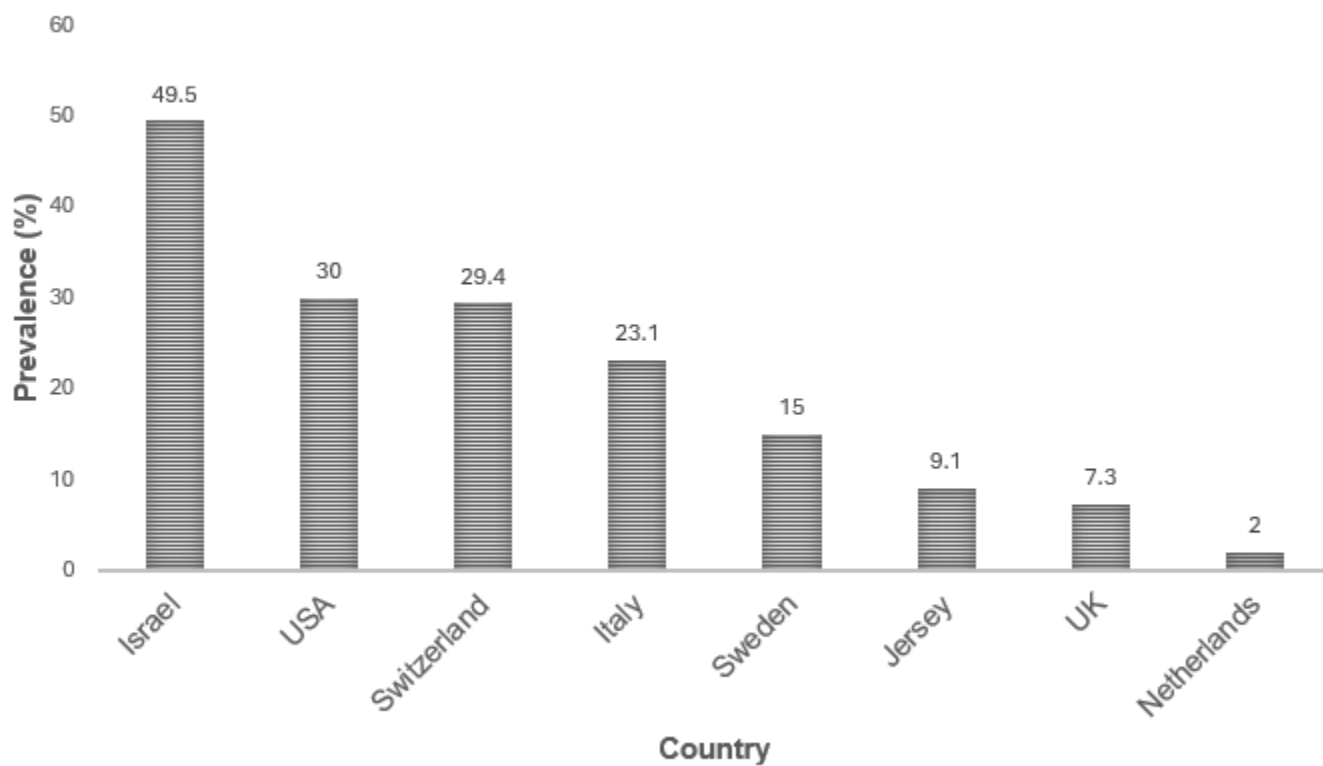
UK and Jersey Clinical and Sub-Clinical PTSD Prevalences



Note. This figure depicts the prevalences of PTSD and sub-clinical PTSD for the Jersey participants (n=11) and UK studies

Figure 27*Clinical PTSD Prevalences Globally*

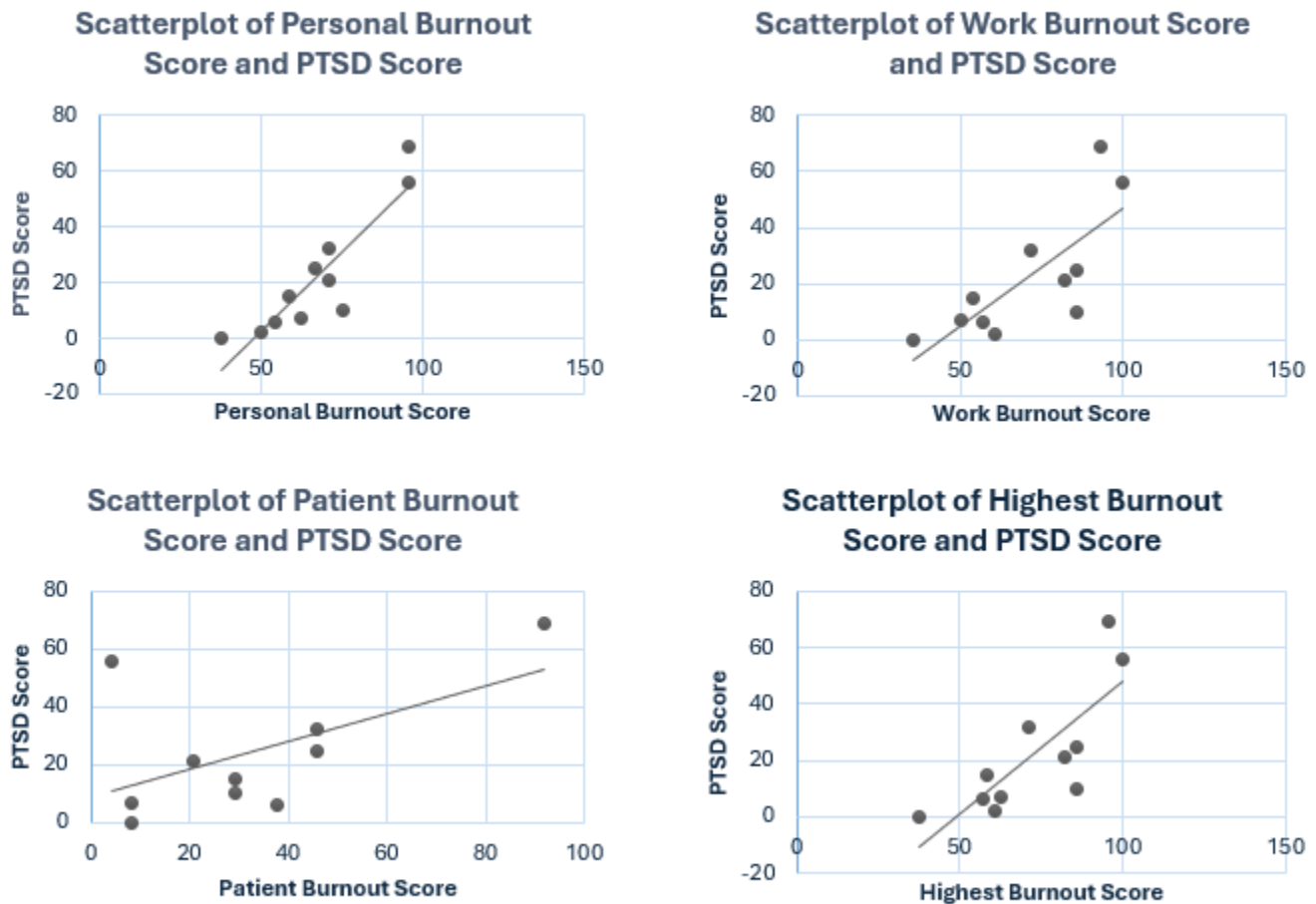
Note. This figure depicts the prevalences of PTSD for the Jersey participants (n=11) and global studies. Where >1 study exists in a country, mean prevalence is used.

Figure 28*Sub-Clinical PTSD Prevalences Globally*

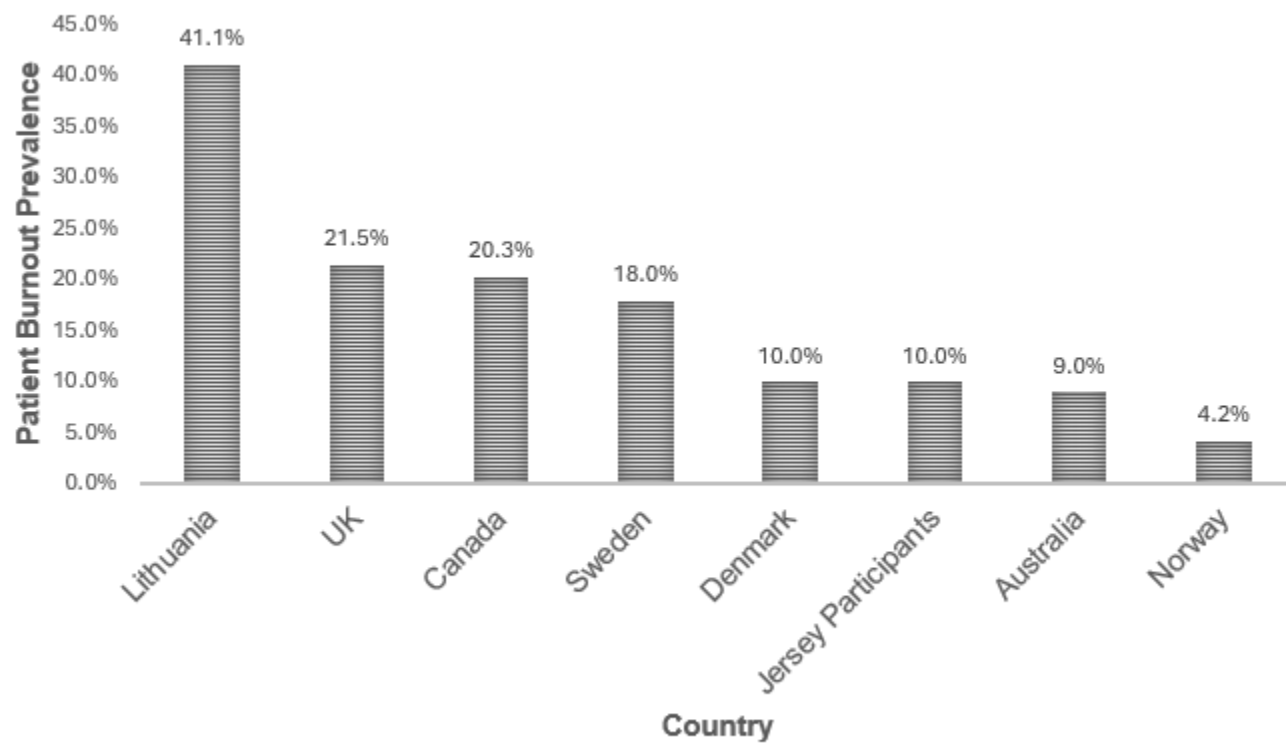
Note. This figure depicts the prevalences of sub-clinical PTSD for the Jersey participants (n=11) and global studies. Where >1 study exists in a country, mean prevalence is used.

Figure 29

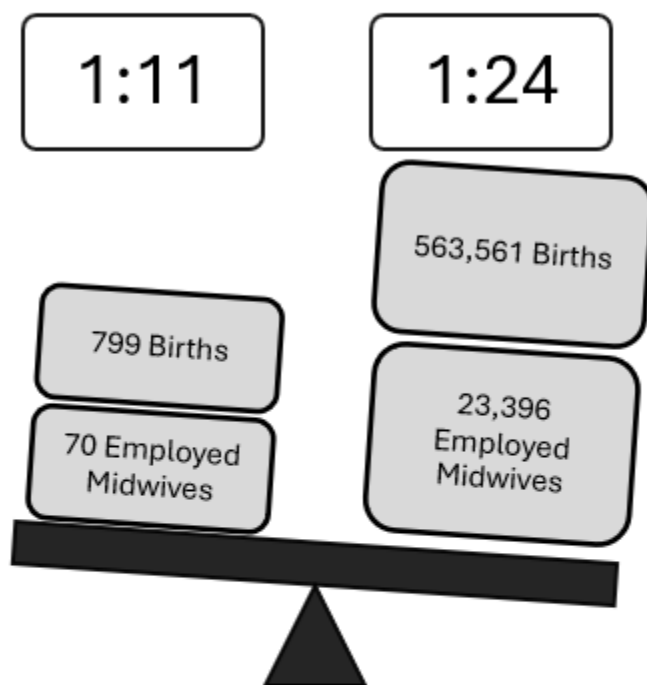
Scatterplots of Jersey Burnout and PTSD Scores



Note. This figure depicts scatterplots of the Jersey participant burnout scores by domain and their corresponding PTSD score. Clockwise from top left: Personal and PTSD scores, Work and PTSD scores, Highest Overall Burnout and PTSD scores, and Patient and PTSD scores

Figure 30*Patient Burnout Prevalence Per Country*

Note. This figure depicts the Patient burnout prevalences identified in Jersey participants (n=10) and global literature. Where >1 study was conducted in a country, mean prevalence is provided.

Figure 31*Midwife:Live Birth Ratios for Jersey and NHS England*

Note. This figure depicts the approximate Midwife:Live Births Ratio for Jersey and NHS England. 2023 data is used as the NHS England 2024 birth report had not been published at time of writing this dissertation. Statistics taken from: NHS England. (2024, January 25). *Record number of nurses and midwives working in NHS*, NHS England, <https://www.england.nhs.uk/2024/01/record-number-of-nurses-and-midwives-working-in-nhs/>; Office for National Statistics. (2024, October 28). *Births in England and Wales: 2023. Annual live births, stillbirths, maternities, and fertility rates in England and Wales by factors including parent age, ethnicity, deprivation, gestational age, and birthweight*. Office for National Statistics, <https://www.ons.gov.uk/peoplepopulationandcommunity/birthsdeathsandmarriages/livebirths/bulletins/birthsummarytablesenglandandwales/2023>; Public Health Jersey. (2024). *Births and Breastfeeding Profile 2023*, Public Health Jersey, St Helier. <https://www.gov.je/SiteCollectionDocuments/Government%20and%20administration/Births%20and%20Breastfeeding%20Profile%202023.pdf>

Figure 32*Dissemination Plan*

Participants	• Participants were able to mark on their survey if they wanted to receive study results by email • Those who agreed will receive a copy of the research abstract by email, with invitation to discuss the research in more detail if they wish
Healthcare Managers	• Members of the local hospital's senior leadership team and the DoM will also be emailed a copy of the abstract • They will also be invited to meet face-to-face or over Teams to discuss the research in more detail
Midwives and Maternity Staff	• Permission will be requested from the DoM to share the abstract via email to all currently employed Jersey midwives, doctors, and HCAs working for the maternity service • Flyers with further detail will be distributed to the clinical areas
Conference Attendees	• The research is due to be discussed at a research festival at the local college & university • For this, a presentation will be created to explain the research
RCM	• An article summarising the research will be drafted and submitted to the RCM for consideration in their quarterly members magazine, and/or their partnership journal (MIDIRS)

Table 1*Search terms for literature review*

Primary Search Terms	Related Terms Also Searched
Post Traumatic Stress Disorder	PTSD, Post Traumatic Stress Syndrome, Post Traumatic Stress, Trauma, Traumatic (Experience)
Burnout	Burn Out, Stress, Compassion Fatigue
Midwife	Midwives, Midwifery, Certified Nurse Midwife, CNM, Labour Nurse, Healthcare, Healthcare Professional

Table 2*Literature Search Terms, Limits and Final Results*

Database/Library Searched	Search Terms	Limits	Initial Search Results (including duplicates within and across databases)	Included in review
ARU Library	Midwife Post Traumatic Stress Disorder Burnout And related terms as per table A2	- Published after 2000 - Midwives as sample population - Available in English (including professionally translated pieces initially in another language)	542	4
Studies Identified by Other Methods				
Citation Searching, Academic Supervision	N/A	English language only	11	1
Total			553	5

Table 3

Studies included in literature review with abbreviated reference to be used throughout

Author	Year of Publication	Sample Population Location	Topic	Abbreviation Used Throughout Review
Hunter, et al.	2019	UK	Burnout	Hunter <i>et al.</i>
Nightingale, et al.	2018	UK	PTSD	Nightingale <i>et al.</i>
Sheen, Spiby & Slade	2015	UK	Burnout and PTSD	Sheen <i>et al.</i>
Slade, et al.	2018	England	Burnout and PTSD	Slade <i>et al.</i>
Soria, Zervoulis & Bolou	2024	England	Burnout	Soria <i>et al.</i>

Table 4*Caldwell Framework Answers*

Question	H	So	N	Sh	Sl
Part 1 - All Studies					
1 - Does the title reflect the content?	Y	Y	Y	Y	Y
2 - Are the authors credible?	Y	Y	Y	Y	Y
3 - Does the abstract summarise the key components?	Y	Y	Y	Y	Y
4 - Is the rationale for undertaking the research clearly outlined?	Y	Y	Y	Y	Y
5 - Is the literature review comprehensive and up-to-date?	Y	N	Y	Y	Y
6 - Is the aim of the research clearly stated?	Y	Y	Y	Y	N
7 - Are all ethical issues identified and addressed?	N	Y	N	N	N
8 - Is the methodology identified and justified? (answer here is inclusive of part 2 findings)	N	N	Y	N	N
Part 2 - Methodology for Quantitative Studies					
9 - Is the study design clearly identified, and is the rationale for choice of design evident?	Y	N	Y	N	Y
10 - Is there an experimental hypothesis clearly stated? Are the key variables clearly defined?	Y	Y	Y	N	N
11 - Is the population identified?	Y	N	Y	N	Y
12 - Is the sample adequately described and reflective of the population?	N	Y	Y	Y	N
13 - Is the method of data collection valid and reliable?	Y	N	N	Y	N
14 - Is the method of data analysis valid and reliable?	Y	Y	Y	Y	N
Part 3 - All Studies					
15 - Are the results presented in a way that is appropriate and clear?	N	Y	Y	N	N
16 - Is the discussion comprehensive?	Y	Y	Y	Y	N
17 - (Quantitative Only) Are the results generalisable?	N	N	N	Y	N
18 - Is the conclusion comprehensive?	Y	Y	Y	Y	N

Note. Study names shortened for easier viewing: H = Hunter, et al., 2019; So = Soria, Zervoulis & Boour, 2024; N =Nightingale, et al., 2018 ; Sh = Sheen, Spiby & Slade 2015; Sl = Slade, et al., 2018.

Framework adapted from: Caldwell, K., Henshaw, L., & Taylor, G. (2011). Developing a framework for critiquing health research: an early evaluation. *Nurse Education Today*, 31, e1-e7. DOI: 10.1016/j.nedt.2010.11.025

Table 5*Word Counts According to Author Guides for Each Journal*

Research Paper(s)	Journal/Reference to Word Count	Word Count for Published Research
Hunter, et al., 2019	Midwifery (Science Direct, 2025)	5000
Nightingale, et al., 2018	Journal of Advanced Nursing (Wiley Online Library, n.d.)	8000
Sheen, Spiby & Slade, 2015	International Journal of Nursing Studies (Science Direct, 2025b)	7000
Slade, et al., 2018	European Journal of Psychotraumatology (Taylor & Francis Online)	6000
Soria, Zervoulis & Bolou, 2024	European Journal of Midwifery (2025)	4000

Note. Study names shortened for easier viewing: H = Hunter, et al., 2019; So = Soria, Zervoulis & Boour, 2024; N =Nightingale, et al., 2018 ; Sh = Sheen, Spiby & Slade 2015; SI = Slade, et al., 2018. Framework adapted from: Caldwell, K., Henshaw, L., & Taylor, G. (2011). Developing a framework for critiquing health research: an early evaluation. *Nurse Education Today*, 31, e1-e7. DOI: 10.1016/j.nedt.2010.11.025

Table 6

Scoring Methods for the PCL-5

Scoring Method	How It Is Used	Benefits	Problems
Total symptom severity	A single sum of scores for all 20 items. Cut off score to be chosen by user.	Provides a single score for easy analysis of data when multiple assessments made. Flexible to use on a variety of populations.	Does not dictate a set cut-off score for diagnosis. Research has chosen scores ranging between 31-48 (Georgescu, et al., 2024) depending on use (e.g. screening versus diagnostics) and population making comparison of studies difficult. Respondent may not meet all DSM-5 (APA, 2013) and ICD-11 (WHO, 2025) diagnostic criteria, as score of 48 is possible by only scoring in 2 of 4 criteria.
Symptom Cluster Severity Scores	Clustering questions into groups and taking the sum of each group. Cluster B (items 1-5), cluster C (items 6-7), cluster D (items 8-14), and cluster E (items 15-20).	Provides users with indication of which DSM-5 criteria the respondent experiences most. Could be utilised in future research to explore how common each individual PTSD criteria is in midwives.	Focuses on individual PTSD criteria and their severity, rather than an overall picture. As this research aims to identify midwives with probable PTSD, the overall picture is required.
Symptom Endorsement	Treat each answer of 'Moderately', 'Quite a Bit', or 'Extremely' as an endorsed symptom, then use the DSM-5 diagnostic rule which requires 1 B item, 1 C item, 2 D items, and 2 E items from the clusters.	Ensures all four DSM-5 (APA, 2013) and ICD-11 (WHO, 2025) diagnostic criteria are met to test positive.	More difficult for statistical analysis as reduces findings to a positive/negative instead of this and a set of numerical scores. Scores as low as 12 using total symptom severity could screen positive here, compared to the suggested cutoffs of 31-48.

Note. This figure depicts the PCL-5 scoring methods. Adapted from: U.S. Department of Veterans Affairs. (2025, March 25). *PTSD Checklist for DSM-5 (PCL-5)*, PTSD: National Center for PTSD, U.S. Department of Veterans Affairs.

<https://www.ptsd.va.gov/professional/assessment/adult-sr/ptsd-checklist.asp> Retrieved 25th April 2025

Table 7*Respondent Scores for Burnout*

	Personal Burnout Score	Work Burnout Score	Patient Burnout Score
Response 1	75	85.7	29.2
Response 2	66.7	85.7	45.8
Response 3	70.8	82.1	20.8
Response 4	50	60.7	Incomplete
Response 5	62.5	50	8.3
Response 6	95.8	92.9	91.7
Response 7	70.8	71.4	45.8
Response 8	95.8	100	4.2
Response 9	54.2	57.1	37.5
Response 10	37.5	35.7	8.3
Response 11	58.3	53.6	29.2

Table 8*Stem and Leaf Table for Burnout*

Personal Stem	Leaf	Work Stem	Leaf	Patient Stem	Leaf
0		0		0	4.2 8.3 8.3
1		1		1	
2		2		2	0.8 9.2 9.2
3	7.5	3	5.7	3	7.5
4		4		4	5.8 5.8
5	0 4.2 8.3	5	0 3.6 7.1	5	
6	2.5 6.7	6	0.7	6	
7	0.8 0.8 5	7	1.4	7	
8		8	2.1 5.7 5.7	8	
9	5.8 5.8	9	2.9	9	1.7
10		10	0	10	

Table 9*Grubbs Test Results*

Outlier Value / Domain	P Value	Significant (P<0.05)?
37.5 / Personal	P>0.3	No
35.7 / Work	P>0.3	No
91.7 / Patient	P = 0.045	Yes

Table 10*Participant Scores for Each Burnout Domain*

Personal Burnout Answer Scores	Work Burnout Answer Scores	Patient Burnout Answer Scores
100	100	75
100	100	100
100	100	100
75	100	100
100	100	75
100	75	100
	75	
Domain Score: 95.8	Domain Score: 92.9	Domain Score: 91.7

Table 11*Mean, Median, and Mean-Median Difference when Outlier Controls are Applied*

Technique	Mean	Median	Mean-Median Difference
1) Retain outlier as-is	32.1	29.2	-2.9
2) Trim outlier	25.5	29.2	+3.7
3) Winsorization 95 th centile	30	29.2	-0.8
4) Winsorization next largest value	27.5	29.2	+1.7

Table 12*Prevalences of Normal/Low, Mild, and Moderate-Severe Burnout in Each Domain*

Burnout Domain and Number of Complete Responses	Number of participants with normal/low level of burnout (score ≤ 24)	Number of participants with mild level of burnout (score 25-49)	Number of participants with moderate to severe level of burnout (score ≥ 50)
Personal (11 responses)	0 (0%)	1 (9.1%)	10 (90.9%)
Work (11 responses)	0 (0%)	1 (9.1%)	10 (90.9%)
Patient (10 responses)	4 (40%)	5 (50%)	1 (10%)

Table 13*Participant Scores and Symptom Endorsement for PTSD*

Response	Score	Symptom Endorsement Criteria Met?
Response 1	10	No
Response 2	25	No
Response 3	21	No
Response 4	2	No
Response 5	7	No
Response 6	69	Yes
Response 7	32	No
Response 8	56	Yes
Response 9	6	No
Response 10	0	No
Response 11	15	No

Table 14*Stem and Leaf Table for PTSD*

PTSD Stem	PTSD Leaf
0	0 2 6 7
1	0 5
2	5 1
3	2
4	
5	6
6	9
7	
8	

Table 15*Prevalences of Non-Significant, Sub-Clinical, and Clinical PTSD*

PTSD Symptomology	Number of participants and % of total
Non-significant	8 (72.7%)
Sub-clinical	1 (9.1%)
Clinically significant	2 (18.2%)

Table 16*Comparison of Pearson's and Spearman's Rho Correlation Calculations*

Burnout Domain	Relationship with PTSD Score (Pearson)	Spearman's Rho Correlation
Personal	Very strong positive correlation ($r(9) = .89, p = <.001$)	Very strong positive correlation ($r_s(9) = .87, p = <.001$)
Work	Moderate positive correlation ($r(9) = .76, p = .015$)	Moderate positive correlation ($r_s(9) = .78, p = .001$)
Patient	Fair positive correlation, not statistically significant ($r(8) = .55, p = .157$)	Fair positive correlation, not statistically significant ($r_s(8) = .38, p = .135$)
Highest Overall Score	Moderate positive correlation ($r(9) = .79, p = .003$)	Very strong positive correlation ($r_s(9) = .82, p = <.001$)

Note. This table depicts the Pearson's and Spearman's Rho calculations for each burnout domain/highest burnout domain and PTSD scores to assess possible associations. Interpretations guided by Akoglu's guide: Akoglu, H. (2018). User's guide to correlation coefficients, *Turkish Journal of Emergency Medicine*, 18, 91-93, DOI: 10.1016/j.tjem.2018.08.001

Table 17*Application of UK and Jersey Prevalences Found*

Country Prevalence Obtained	Burnout		Clinical PTSD		Sub-Clinical PTSD	
	Prev (%)	N° MWs	Prev (%)	N° MWs	Prev (%)	N° MWs
UK	88	61	21.3	14	7.3	5
Jersey	91	63	18.2	12	9.1	6

Note. This table depicts the number of Jersey midwives who could potentially be suffering from burnout, clinical PTSD, and sub-clinical PTSD if the UK or limited Jersey findings were found to be accurate.

Table 18

Recommendations and Implementation Ideas

Recommendation Made	Implementation Ideas
Allocation of breaks at the beginning of the shifts and ensuring these breaks are taken in a timely manner.	Allow staff to choose a break time that best fits their caseload. Write allocated breaks on inpatient white boards to remind midwives their allocation and ensure they plan their workload around it.
Ensure there are facilities provided to ensure that staff are able to rest and maintain hydration and nutrition during their working hours.	(Zhang, <i>et al.</i>, 2020) found that as little as 200ml of water improves thirst, fatigue, and anger, with 500ml needed to improve cognition. Posters could be placed in toilets (checking urine colour for signs of dehydration) and around desks (with reminders to drink). Sherwood Forest Hospitals NHS Foundation Trust (NHS Employers, 2025) provided staff with a reusable bottle they could write their name on and placed printed wellbeing information inside before handout. Vending machines were relocated nearer to clinical areas and 24/7 hot food machines made available, as well as a fruit and vegetable stall. Charitable funds were used to support costs. Plan made as part of Royal College of Nursing's (n.d.) <u>Rest, Rehydrate, Refuel campaign</u>.
Encourage all staff to speak up about their concerns as they might be the one who prevents an avoidable disaster	Allocate clinical restorative supervision sessions with a Professional Midwifery Advocate (PMA) for midwives that take place during their shifts to encourage a positive relationship, enhance collaboration and communication and to capture concerns (Catling, <i>et al.</i>, 2022; Catling, <i>et al.</i>, 2024). Alternatively, run drop-in PMA clinics, or provide an anonymous service (e.g. feedback drop-box or online form) to feedback concerns.
Good team players recognise colleagues who are under stress and support them by sharing workload and giving emotional support. Look out for the stresses that affect performance, such as, tiredness, worries, other's poor behaviour, illness, noise, distractions and hunger	On busy shifts it can be difficult for frontline midwives to support each other. A Wellbeing Tea Trolley has been used in some trusts (Doncaster and Bassetlaw Teaching Hospitals, 2022) to boost mood and hydration, as well as support training. Managerial-level staff such as the Practice Development Midwife could book a 20-minute slot each day to provide front-line midwives with a hot drink, a biscuit, and any hot-topic updates including training and awareness campaigns. Other colleagues could take turns running the trolley, e.g. a PMA to build trust, engagement and communication, the Risk Midwife to discuss trends and incident reports etc.
Your experiences can play on your mind, especially the mistakes you think you might have made. At the end of a shift debrief as a team and share thoughts to enable learning and maintain mental wellbeing. Sign-post staff to available support measures.	Either as part of handover or just before, shift debriefs could take place to reflect on the shift and raise any concerns or questions, or just to share thoughts on the day. All midwives should be reminded of the hospital's Trauma Risk Management (TRIM) facility during mandatory training and how to access it. This should be offered to midwives after any traumatic birth, obstetric emergency, or other distressing incident.

Note. This table depicts recommendations made by the RCM to improve workforce wellbeing and staff retention, along with ideas of implementation. RCM recommendations adapted from: Royal College of Midwives. (2024, March). *Solution Series*, Royal College of Midwives, <https://rcm.org.uk/solution-series/>

Table 19

Recommended Changes for Repeating this Research

Recommended Change	Literature Supporting Recommendation	Reasons For and Against the Change
Participant anonymity	(Cardell, et al., 2022) (McNeely, 2012)	Participant data was coded anonymously; however, names were provided on the consent form. Removing this attribute may encourage midwives to be surveyed on a sensitive topic. The PIS would need to advise that data could not be withdrawn once submitted as it would be impossible to determine whose data set belongs to that person. There is also the risk of fraudulent multiple entries by the same person due to not having to provide a name.
Paper surveys during mandatory training	(Slade, et al., 2018) (Ellis, et al., 2022)	Slade et al.'s research started as a survey at the beginning of a mandatory training session, with recruitment into post-intervention follow up. It achieved a response rate of 62% (this fluctuated depending on questions answered but was persistently >58%). The CBI and PCL-5 could be given to Jersey midwives during mandatory training sessions. This ensures dedicated time to participate without workload/time constraints. However, this could lengthen data collection timeframe if all eligible midwives are not attending mandatory training within a short time frame.
Financial incentive	(Abdelazeem, et al., 2022) (Smith, et al., 2019).	A small monetary incentive has been shown to increase engagement and participation in research. However, as discussed during the research design chapter, there are ethical concerns around where incentive becomes unacceptable. There is also the challenge of sourcing funding.
Increased advertisement	(Maghera, et al., 2014)	Use of posters and flyers reminding midwives during the ongoing data collection period to participate if they are interested. Such resources were declined by the DoM for this research, but discussion could be had about the final low response rate to determine if this might change opinion about emails being sufficient.

Word count: 16,433

(Excluding title of module and assignment, references to sources, bibliography, graphs, tables, maps, diagrams, captions and appendices)