Doctoral Thesis

Submitted in partial fulfilment of the Lancaster University Doctorate in Clinical Psychology

Measurement of teamwork and predictors of intention to leave in mental health teams

Doctorate in Clinical Psychology

Lancaster University

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2020 Intake

August 2023

Statement of Total Word Count

Section	Main Text	Appendices (including Title Pages, References, Tables, and Figures)	Total
Thesis Abstract	-	295	295
Literature Review	7968	12772	20740
Empirical Paper	7999	6191	14190
Critical Appraisal	3881	1832	5713
Ethics Proposal	5950	6885	12783
Total	25798	27975	53773

Thesis Abstract

The wellbeing of healthcare staff and the functioning of healthcare teams is vital to the delivery of effective, safe, and high quality care in mental health services.

Section one reports a quantitative systematic literature review evaluating the characteristics and psychometric properties of instruments that measure teamwork in mental health teams. The review also appraised the methodological quality of each included paper. A systematic search of six databases was conducted, resulting in fifteen studies evaluating thirteen measures of teamwork being included in the review. Differences were found in, the domains of teamwork measured, the mental health setting the instruments were tested in, and in the psychometric robustness and methodological quality of the instruments. The conclusion of the review was that none of the studies reported on all nine psychometric properties, highlighting a lack of evidence for psychometrically sound measures of teamwork in mental health teams. Hence, it is recommended that further research should examine the reliability and validity of instruments included in the review.

Section two describes an empirical study investigating Compassion Satisfaction, Compassion Fatigue, and Psychological Safety as predictors of Intention to Leave in NHS inpatient mental health staff. This was a cross-sectional study, with participants (n = 179) completing an online survey. Binary logistic regression analysis found that Compassion Satisfaction, Compassion Fatigue, and Psychological Safety were all significant predictors of Intention to Leave. Mostly moderate levels of Compassion Satisfaction and Compassion Fatigue were reported in the sample. The results suggest that Intention to Leave may be improved by focusing on interventions that enhance Compassion Satisfaction and Psychological Safety, and reduce Compassion Fatigue.

Section three is a critical appraisal that describes and evaluates decisions made, outlines limitations and suggested improvements, and offers personal reflections on the work and the process of conducting this.

Declaration

This thesis documents research conducted for the Doctorate of Clinical Psychology at the Division for Health Research, Lancaster University. The work presented here is the author's own, except where due reference is made. The work has not been submitted for the award of a higher degree elsewhere.

Name: Aimee Elisha Hogan

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Acknowledgements

First and foremost, I would like to thank all of the study participants. I greatly appreciate your willingness to give up your time to take part in this research, especially as I am aware of how incredibly busy you all are, and how stressful your jobs can be. Without you this work would not have been possible.

I have to give the biggest of thanks to my research supervisor James Kelly, without your support, encouragement, passion, and general grounding presence, I am not sure that I could have completed this work. To my field supervisors Dom Chamberlain and Clea Beanland, thank you so much not just for your support in recruitment but also for everything you taught me before I started the course, your faith in me helped me get here today.

I would also like to thank all of the 2020 cohort, being on this journey with you has been a pleasure and a privilege. I need to give a special shout out to the cloth monkeys; I have never met a group of more wonderful, compassionate, intelligent, and hilarious people. Words cannot express how happy I am that we all found each other, the support, memes, unwavering care, and time spent together got me through this course. Our regular pub quizzes were always such a highlight of the week, even when things were stressful, up the UPJ!

Huge thanks as always to my family, I appreciate you all being there and listening to me complain about this process, despite having no idea what I'm talking about most of the time. Oliver thank you for always keeping me grounded. Daria thank you for always being hilarious. Jackie thank you for your unconditional support, love, and advice over the years. An extra special thank you goes to my Dad, you are my absolute hero and without you, I

wouldn’t be the person I am today, and I certainly wouldn’t have been completing a Doctorate!

To my best friends, Gemma and Flo, thank you for always asking how my thesis is going, despite also not knowing what I’m banging on about, and for continuing to be supportive despite the multiple false hand-in dates! Your friendship and love over the past 15 years has been incredible.

Finally, the most special of thanks goes to my partner Richard. You never stopped believing in me, even during the times I struggled to believe in myself. Your willingness to be alongside me for this journey over the past 11 years has meant the world to me. Thank you for being you.

Contents

Section One: Systematic Literature Review

A Systematic Review of the Characteristics and Psychometric Properties of Measures used to Assess Teamwork in Mental Health Teams

Word count (excluding references, tables, and appendices): 7958 words

Abstract: 343 words

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August 2023

Prepared in accordance with guidelines for authors for BMC Health Services Research[1]

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Declarations of interest: none

[1] See Appendix 1-5 for journal submission guidelines

Abstract

Background:

Teamwork is vital to healthcare delivery. In the NHS, multi-disciplinary team working is encouraged in mental health settings. However, there is a relative lack of empirical evidence to define what constitutes effective teamwork in these settings, and whether this is associated with improvements in professional and client-related outcomes. As such, there is a need to establish valid and reliable measures of teamwork in mental health settings. The objectives of this review were to: 1) systematically search and identify published self-report instruments used to assess teamwork in mental healthcare; 2) appraise the methodological quality of each of the identified papers; 3) evaluate the characteristics and psychometric properties of each measure.

Methods:

A systematic search of six databases was conducted and all records identified were screened in accordance with the updated version of the Preferred Reported Items for Systematic Reviews and Meta-Analyses (PRISMA) guidelines. Data extraction and appraisal of the methodological quality and psychometric properties of measures included were completed using the COnsensus-based Standards for the selection of health Measurement INstruments (COSMIN) approach. This included the COSMIN Risk of Bias Checklist and the criteria for good measurement properties.

Results:

Fifteen studies evaluating thirteen measures of teamwork were included in this review. There were differences between the instruments in terms of which aspects of teamwork were measured, what type of mental health setting the instruments were developed and tested in, and in methodological quality and psychometric robustness. None of the studies reported on all nine psychometric properties. In addition to this, criterion validity could not be assessed for any of the included

instruments, as to date no ‘gold standard’ for the measurement of teamwork in mental health settings exists.

Conclusion:

There is a lack of evidence for psychometrically robust measures of teamwork in mental health teams. Further research should focus on assessing the validity and reliability of the instruments included in this review. This will enable clinicians and researchers to choose appropriate instruments to evaluate and improve teamwork, which in turn may lead to enhanced staff wellbeing and improvement in outcomes for service users.

Keywords: Teamwork, Measures, Psychometrics, Mental Health, Review, Healthcare Staff

Introduction

Teamwork is vital to healthcare delivery. Over the previous decades in the NHS, multi-disciplinary team (MDT) working has been promoted by policy initiatives and incentive schemes, with MDT working already being embedded in many services (1). In mental health (MH) care specifically, MDT working has long been considered an important component of treatment and care. As far back as 1984, the Irish Department of Health's strategy, "Planning for the Future" recommended the creation of psychiatric MDTs, consisting of professionals such as psychiatrists, psychologists, MH nurses, occupational therapists, and social workers (2). Subsequently, the "New Ways of Working for Everyone" best practice guide led to changes in roles, systems, and processes in order for MH teams to deliver effective, person-centred care (3). Following the implementation of this, MDT working became usual practice in UK MH services (4).

The empirical evidence for MDTs benefit over uni-disciplinary teams is currently unclear (5). The conclusion of several systematic reviews of MDT working in various healthcare settings was that there was a lack of compelling evidence to determine their effectiveness (6-8). Despite this, there is widespread policy support for MDTs (9) and recent guidance from the NHS and the Social Care Institute for Excellence (SCIE) highlights many possible benefits of MDT working including higher quality care, improved outcomes for patients, and improved staff satisfaction and well-being (1,10). Arguments for MDT working over uni-disciplinary working are that professionals from different disciplines will have a broader range of knowledge and skills, and that ideas coming from a range of disciplines will improve decision-making, ultimately improving patient care (11). The main limitation of MDT working compared to undisciplinary working is the difficulty in bringing together professionals with diverse experience, different training, and potentially alternative goals, values, and professional standpoints (1).

A key component of MDT working is teamwork, with this having an impact on clinical outcomes. A recent systematic review and meta-analysis investigating the relationship between teamwork and performance in physical healthcare teams found that teamwork was positively

correlated with clinical performance (12). In MH care specifically, it has been assumed that teamwork is associated with positive outcomes for staff and service users, and there exists some research to support this assertion. Teamwork and collaboration between different professionals is associated with a lower number of admissions to MH hospitals (13), fewer deaths by suicide (14), improved service user satisfaction (15), and improved job satisfaction and lower rates of burnout in staff (16,17).

There are however, barriers to and difficulties with teamwork. Recently, a quarter of NHS staff reported harassment, bullying, or abuse from other staff members (18). There are also less extreme issues with teamwork described in the literature. Teams still operate in hierarchical ways, despite policy recommendations that all members of an MDT be treated equally (19). Other studies found that teams did not communicate effectively, struggled to collaborate (20), and did not understand one another's professional roles (21).

Difficulties Conceptualising Teamwork

The NHS offers a definition of a team as, "a group of people who are working through collective endeavour towards a common goal" (22, p. 2). In line with this, West et al. (23) outlines three characteristics that healthcare teams should possess to be considered 'real teams' as opposed to 'pseudo teams', these are: interdependence, shared objectives, and reflexivity (23). Real teams are composed of team members who work closely together, who share common objectives, and who regularly meet to review their performance (23). However, the literature encompasses various aspects or outcomes of teamwork, with a lack of consensus as to what constitutes teamwork (15,16). This presents difficulties as many synonyms for teamwork are employed in the literature, for example; team effectiveness (24), team cohesion (25), interprofessional collaboration (26), interprofessional teamwork (27), team processes (28), and shared problem-solving (22).

'Good' teamwork has been conceptualised in some research as 'effective' teamwork. Team effectiveness is defined by West (29) as comprising five key components. In 'good' teams that are

functioning well these components are: high levels of success in achieving task-related objectives, good team member well-being, long-term viability, high innovation, and strong inter-team cooperation (29). However, effectiveness in the context of mental health teams is complex and challenging to define (24). This is due to a number of characteristics such as: ongoing lack of resources (30), varied needs of stakeholders involved (24), and fluctuating team processes that arise from MDT working (31,32). In addition to team effectiveness, team functioning is also an important aspect of teamwork. In the literature team functioning has been conceptualised as having two dimensions: the task to be carried out and the social elements that affect how team members work together (29). A similar understanding of team functioning is also outlined in Valentine et al's (33) review of teamwork in healthcare, where 'behavioural process' encompass the 'task', and 'emergent states' the 'social elements', further detail is given on page 1-13.

The Input-Mediator-Output-Input (IMOI) framework (34) is utilised in teamwork research. Within this framework 'inputs' relate to organisational or structural factors (35) and 'mediators' encompasses teamwork processes such as the behavioural processes, emergent states, and interpersonal processes described above (36,37). In healthcare, 'outputs' often relate to patients (e.g. satisfaction, quality of care), teams (e.g. collaboration, cohesion), or organisational factors (e.g. cost-effectiveness) (38). This framework demonstrates the multitude of factors that can contribute to understanding and evaluating teamwork and highlights the difficulty in defining and evaluating teamwork as a discrete concept in the literature.

Measuring Teamwork in Mental Health Settings

Relatively few measures exist for the measurement of teamwork in MH settings. This may be due to the target of MH research being mostly focused on the 'outputs' of MH services, such as treatments, interventions, and the number of people experiencing MH difficulties. The National Institute for Health Research's (39) MH goals for 2020-2030 highlight this, with their agenda for MH research in the UK being output-driven goals, with little reference to the inputs, processes, or mediators that may facilitate these outputs. This may translate into a lack of interest in and

funding for research into MH teams. There are also ongoing issues with staffing shortages across MH services in England, with a recent report from the Department of Health and Social Care (38) stating that staff shortages continue to be the main constraint to improving and expanding services. This lack of adequate staffing will have an impact on the amount of available time that MH staff have to take part in research.

There have been two recent reviews of teamwork measures in healthcare settings but these were not specific to MH healthcare. Valentine et al.'s (33) review assessed the psychometric quality of 39 measures assessing teamwork in healthcare, finding that only eleven of these satisfied the psychometric criteria applied. This review differed from the current review as it employed a different method for appraising the psychometric properties of the included papers, evaluating only four psychometric measurement properties, compared to the ten evaluated in the current review. Furthermore, none of the papers included in the current review were included in Valentine et al.'s (33) review.

In addition to this, Jacob et al.'s (40) systematic review of instruments measuring interprofessional collaboration recommended that all eleven of the instruments included in their review undergo further psychometric analysis and development to increase their robustness. This suggests that there is an issue with the psychometric quality of measures addressing teamwork in healthcare. Although this review evaluated five of the same papers included in the current review, the aim of the review was different. Jacob et al.'s (40) review focused specifically on interprofessional collaboration, rather than teamwork more broadly, only including papers whose setting was children's services, and looking only at teams specifically comprised of members from health and other disciplines. Additionally, Jacob et al.'s review utilised a purpose-designed tool to conduct critical appraisal, as opposed to the COSMIN (41) methodology employed in this review. To the author's knowledge, there currently exists no reviews assessing the psychometric properties of measures of teamwork in MH teams.

Given the reported value of MDT working in MH settings, and relative lack of empirical evidence relating to what constitutes effective teamwork in these settings; and whether this is associated with improvements in professional and client-related outcomes, there is a need to establish valid and reliable measures of teamwork. Research involving the measurement of teamwork in MH settings would improve the evidence base and help to guide clinical practice.

Objectives

The objectives of this review were to: 1) systematically search and identify published self-report instruments used to assess teamwork in MH settings/teams; 2) appraise the methodological quality of each of the identified papers; 3) evaluate the characteristics and psychometric properties of each measure.

Method

This review was completed in accordance with the updated version of the Preferred Reported Items for Systematic Reviews and Meta-Analyses (PRISMA) guidelines (42).

Eligibility Criteria

Inclusion and exclusion criteria were defined prior to undertaking the search. Studies were included if they: a) were published in English and the instrument evaluated was available in English; b) psychometric properties of the instrument were evaluated and discussed; c) the instrument was a self-report measure of teamwork in MH settings and/or MH teams. As teamwork is not a clearly defined concept in the literature, we included studies that measured similar constructs such as team effectiveness, team cohesion, interprofessional working, and team processes. Exclusion criteria were as follows: a) less than 25% of the participants in the study were MH staff; b) the measure was not a self-report questionnaire completed by an individual within a team, such as measures completed by patients or observational measures completed by people outside of the team; c) studies that were not cross-sectional or longitudinal, such as observational studies, qualitative studies, or review studies; d) dissertations, book chapters, presentation

extracts, editorials or comments; e) studies that were not peer reviewed.

Information Sources and Search Strategy

A systematic search of six databases (AMED, CINAHL, EMBASE, Medline, PsychInfo, and SocIndex) was conducted to cover relevant disciplines, such as psychology, nursing, and general healthcare. Table 1-1 outlines the full search strategy employed and appendix 1-1 gives further detail.

[Table 1-1 here]

Selection Process

The selection process involved screening articles in two stages, first records were screened (titles and abstracts), and then reports were screened at full-text level. The screening process was undertaken by one reviewer. If there was uncertainty about whether an article met inclusion criteria, this was discussed with the research team until an agreement was reached. Given the shortage of research in this area, it was decided that studies were to be included if at least 25% of the participants were MH staff working in MH settings. This ensured that a significant proportion of the participants in the included articles reflected the target population of the review, without being overly exclusive. The main causes of uncertainty regarding whether to include an article were the reporting of psychometric properties and whether the measure was assessing an aspect of teamwork. Again, due to there being limited research into teamwork specifically in MH teams, articles were included if they reported on the development of, or any psychometric properties of measures, even if this was not the main aim of the study. In addition to this, the decision was made to include instruments where only certain subscales within the instrument evaluated teamwork, as well as articles in which the whole instrument measured teamwork.

Data Collection Process

One reviewer collected data from each eligible report. As per the guidance outlined in

the COSMIN methodology for systematic reviews of Patient-Reported Outcome Measures (41), data pertaining to a) study characteristics; b) instrument characteristics; and c) psychometric properties of the instruments appraised, were extracted from the eligible studies. The research methodology employed by each study to examine each psychometric property was identified for the methodological quality appraisal. Data on the findings of these investigations were also extracted to ascertain the quality of the psychometric properties.

Data Items and Study Risk of Bias Assessment

The COnsensus-based Standards for the selection of health Measurement INstruments (COSMIN) approach was developed to improve the selection of health outcome measurement instruments in both clinical practice and research (41). This was achieved by developing standards and criteria for evaluating the measurement properties of Patient-Reported Outcome Measures (PROMs; 41,43). The COSMIN methodologies for assessing content validity of PROMs (43) and for systematic reviews of PROMs (41) were both utilised to guide which outcomes were sought and to assess for risk of bias in the included studies. See appendix 1-2 for further explanation of these methodologies. For this review, one reviewer completed the risk of bias assessment.

Synthesis Method

Data from the studies were synthesised by utilising the criteria for good measurement properties, which uses the same taxonomy as the COSMIN Risk of Bias Checklist and it is suggested that these tools be used together (Table 1-2; 41,44,45). This ensured that the synthesis of data was standardised, with direct comparisons of psychometric properties able to be drawn across the included studies. The nine measurement properties outlined above were rated as either: insufficient (-) if the results did not meet the criteria's standard, sufficient (+) if the results were in accordance with the criteria's standard, or indeterminate (?) if the results were not consistent with the criteria.

[Table 1-2 here]

Certainty Assessment

When arriving at an overall conclusion for the quality of each PROM, the results from any studies evaluating the same PROM were quantitatively combined. In this review, most PROMs were only evaluated in one report, so the majority of the ratings for each PROM are based on only one or two studies. In order to assess the confidence in the body of evidence, the quality of evidence was graded based on the Grading of Recommendations Assessment, Development, and Evaluation (GRADE) approach for systematic reviews of clinical trials (46). The COSMIN manual suggests using a modified version of the GRADE approach, where four factors (risk of bias, inconsistency, imprecision, and indirectness) are applied in order to evaluate the measurement properties of PROMS (28). The quality of the evidence is defined as 'high', 'moderate', 'low', or 'very low' (Table 1-3). When utilising the GRADE approach, it is assumed that the overall result is of high quality and the quality of evidence is subsequently downgraded according to the four factors (Table 1-4). Giving an overall rating for each psychometric property of each PROM, and a grading of the quality of evidence from which this rating has been calculated (Table 1-5).

[Table 1-3 here]

[Table 1-4 here]

Results

Study Selection

Following PRISMA guidelines, a flow diagram was completed to outline the literature screening process (Figure 1-1). A total of 6962 records were identified through database searching, 686 were removed due to duplications before screening, leaving 6276 records to be screened.

Consequently, 6021 records were excluded, leaving 255 reports to be sought for retrieval, all reports were retrieved and so 255 reports were assessed for eligibility by screening at the full-text level. The reasons that articles were excluded are listed in Figure 1-1, with the most common reasons being that the studies were not performed with the target population of this review, or

the articles did not report on measures of teamwork. Screening from databases resulted in fourteen eligible articles. The reference lists of these articles and the reference lists of several reviews that also assessed measures of teamwork in healthcare were then searched to identify any other reports that may have been relevant to the review. Eight further reports were identified and assessed for eligibility, with the reasons for exclusion given in Figure 1-1. This resulted in one further article meeting the full inclusion criteria. Forward and backward citation searching was performed on the eligible articles, using Google Scholar. This did not result in any additional eligible reports and so fifteen articles were included in the final review.

[Figure 1-1 here]

Study Characteristics

An overview of the characteristics of each of the fifteen studies included in the review is given in Table 1-5. Thirteen different PROMs were evaluated within the fifteen articles. Although, this included three different iterations of the PINCOM-Q, in which either the items of the PROM were the same but the subscales were scored differently as in the PINCOM-Q (revised) (47,48) or the PINCOM-Q had been translated into another language (PINCOM-Q (G); 49). Three papers reported on the development and psychometric properties of the original PINCOM-Q (25,50,51). As per the COSMIN guidance, these different versions of the PINCOM-Q were considered separate PROMs. See appendix 1-3 for a narrative description of the study characteristics.

[Table 1-5 here]

Instrument Characteristics

Table 1-6 provides a description of the characteristics of the thirteen instruments outlined in the fifteen included papers. The instruments measured a variety of constructs relating to teamwork. The majority of PROMs measured some form of collaboration (*n*=7, 47%), with teamwork, team effectiveness, team behaviour, attitudes towards teamwork, and shared problem solving and decision making also concepts assessed by the included PROMs. See

appendix 1-4 for a narrative description of the instrument characteristics.

[Table 1-6 here]

In Valentine et al.'s (33) review, teamwork was considered to be measured by two broad domains: behavioural processes or emergent states. Behavioural processes include tasks that individuals 'do' in a team, such as communication, shared decision making, and collaboration, whereas emergent states encompass affective and cognitive elements that emerge as part of working as a team, such as respect, psychological safety, and shared objectives. This differentiation between different domains within the literature on teamwork measurement has been utilised to synthesise the constructs measured by the PROMs included in this review, with the addition of 'attitudes (regarding teamwork)' as a further domain. The majority of PROMs focused on both behavioural and emergent states, three PROMs included items that covered all three domains (behavioural processes, emergent states, and attitudes; PINCOM-Q, PINCOM Q revised; PINCOM-Q G), one only evaluated behavioural processes (SPSDM), and one only explored attitudes (T-TAQ; 52). The most frequently examined dimensions considered to be behavioural processes were, communication, collaboration, and general teamwork quality. Emergent states encompassed in multiple PROMs were, psychological safety, respect, and support for/from one's team.

An example item from the IITC-ESMH that demonstrates a behavioural process is "*team members discuss strategies to improve their working relationship"* (53). Emergent states could be explored using the item "*team members care about one another's personal well-being"* from the CPAT (54). Finally, an example item for attitudes is *"to be effective, team members should understand the work of their fellow team members"*, which is taken from the T-TAQ (52).

Risk of Bias in Studies

The COSMIN Risk of Bias Checklist (41) was used to evaluate the methodological quality of the fifteen included studies. The quality appraisal for the methodology of each psychometric

property measurement per study is detailed in Table 1-7. One of the included studies (53) did not explicitly report any of the nine psychometric properties but was included to assess PROM development of the PINCOM-Q, which although not a measurement property, is taken into account when evaluating the content validity of a PROM (41). None of the studies reported all nine psychometric properties; Tomizawa et al.'s (54) study reported the most psychometric properties of any of the included studies, evaluating seven of the measurement properties of the CPAT. The other thirteen studies measured between one and six of the psychometric properties. Of the measurement properties per PROM, internal consistency was the most frequently measured, with this being measured for every included PROM (*n*=13). Structural validity was also a measurement property that was often assessed (*n*=11), with only the PINCOM-Q (revised) and the HSOPSC not reporting this. Measurement error (*n*=1) and responsiveness (*n*=1) were the least frequently reported measurement properties. Criterion validity could not be assessed for any of the PROMs included in this review as it was not reported in any of the studies. Criterion validity measures the degree to which a PROM accurately reflects a known standard. In the COSMIN methodology, this is measured by comparing scores of a PROM with scores of an agreed 'gold standard' instrument, measuring the same construct (28). As no 'gold standard' for the measurement of teamwork in MH settings currently exists, it was not possible for criterion validity to be evaluated in this review.

[Table 1-7 here]

Methodological Quality Appraisal

The following section will describe the quality appraisal for the methodology of each psychometric property measurement, based on the data extracted from studies in this review. Content validity was only evaluated in four instruments, with all of these receiving a 'doubtful' rating (CMHT Effectiveness Scale, IITC-ESMH, CPAT, SPSDM). This was due to there being a lack of information in order to adequately assess content validity. For example, several of the studies did not confirm whether skilled group moderators or interviewers were used in the PROM

development or content validity studies or whether at least two researchers were involved in the analysis of data from cognitive interviews. The IITC-ESMH was rated 'doubtful' as although stakeholders had been asked to comment on the relevance and comprehensiveness of the PROM, this was conducted via a survey and the sample size was not adequate (<30). One of the studies (HSOPSC) was developed in a different population to the target population of this review, general healthcare staff working in hospitals rather than MH care staff. Thus, although information regarding the content validity of this PROM exists (55), it was not included in this review due to not meeting eligibility criteria.

Structural validity was assessed in 11 PROMs, with ratings varying from 'inadequate' to 'very good'. Four PROMs (PINCOM-Q, MHDAT, T-TPQ, T-TAQ) were rated as 'inadequate' as the sample size for factor analysis was less than five times the number of items in the PROMs. The IITC-ESMH and CPAT were both rated 'adequate', due to Exploratory Factor Analysis (EFA) being utilised in these studies, rather than the favoured Confirmatory Factor Analysis (CFA), Rasch Analysis, or Item Response Theory (IRT).

Internal consistency was assessed for every PROM and the methodology was rated as 'very good' for each study that measured this. To achieve a rating of 'very good' for internal consistency an internal consistency statistic must be calculated for each unidimensional scale or subscale of a PROM and the method of calculating this must be appropriate. As all PROMs included in this review utilised continuous scoring either Cronbach's alpha or Omega values should be calculated for internal consistency; every study in this review that measured this property reported Cronbach's alpha values.

Cross-cultural validity was evaluated in one PROM (CPAT) and the methodology was rated as 'doubtful'. The CPAT was tested in a sample of MH professionals from both the USA and Japan and an explicit aim of this study was to develop and validate a scale that could be used multi-nationally. The CPAT received a 'doubtful' rating as EFA was utilised to analyse the data, when

CFA would have been preferable. Measurement invariance is assessed using the same standards as cross-cultural validity in the COSMIN methodology, as both properties evaluate whether different groups who are similar across other characteristics respond similarly to the same items in a PROM (41). The SPSDM was the only PROM to evaluate measurement invariance and the methodology of this was rated 'inadequate' as the sample size in some of the groups compared was less than 100.

Three PROMs were evaluated for reliability, one was rated as 'very good' (CPAT) and two were rated 'adequate' (CMHT Effectiveness Scale, TACT). The TACT and the CPAT assessed test-retest reliability, whilst the CMHT Effectiveness Scale examined inter-rater reliability. These PROMs received an 'adequate' rating as although both calculated intraclass correlation coefficients (ICC) to assess reliability, neither described the model or formula. To receive a 'very good' rating for reliability, studies have to provide evidence that individuals were stable in the interim period regarding the construct being measured. This standard was considered not relevant for evaluating PROMs in this review, as the target population were staff rather than patients and so the ratings for this standard were disregarded when giving an overall rating for reliability.

Measurement error was assessed in one study (CPAT) and was rated 'very good'. Measurement error refers to systematic or random error in an individual participant's score that is not due to true changes in the construct to be measured. To receive a rating of 'very good', the time interval between administrations of the PROM should be appropriate, the test conditions between administrations should be similar, and an appropriate statistical method of calculating measurement error should be utilised, such as the Standard Error of Measurement (SEM), which was used for the CPAT.

The methodological quality of construct validity was evaluated by hypothesis testing. Six studies evaluated construct validity; one PROM was rated 'inadequate' (SPSDM) and five

'doubtful' (PINCOM-Q revised, T-TPQ, T-TAQ, CPAT, HSOPSC). The SPSDM received a poor rating as although the comparator instruments were named, the underlying constructs were were not clearly described. The PINCOM-Q (revised) was given a 'doubtful' rating as it was not possible to assess the measurement properties of the comparator instrument. This was due to this information not being included in the paper evaluating the PINCOM-Q (revised) and the original paper describing the comparator instrument was only available in the French language. The CPAT was also rated 'doubtful' due to limited information regarding the measurement properties of the comparator instrument. The T-TPQ and T-TAQ were both rated 'doubtful' due to issues with the methodology used to assess known-groups validity; this was despite both PROMs receiving a 'very good' rating for convergent validity, which is also an aspect of construct validity. Known-groups validity was 'doubtful' as an adequate description of the important characteristics of the subgroups was not described. This was due to demographic information purposefully not being collected in these studies, to ensure anonymity and to reduce social desirability bias. The HSOPSC was also rated 'doubtful' due to a lack of information regarding the characteristics of the subgroups.

Finally, the measurement property of responsiveness was appraised for only one PROM, the SPSDM. Responsiveness was examined for this PROM by means of hypothesis testing before and after an intervention and was rated as 'very good'. To receive a rating of 'very good' the study must give a clear description of the intervention and the statistical methods must be adequate for testing the hypothesis.

Quality Appraisal and Results of Synthesis of Psychometric Properties

The quality appraisal ratings and quality of evidence ratings of each psychometric property per measure are outlined in Table 1-8. The psychometric properties of each PROM were evaluated against the criteria described in Table 1-2 (44,45). It was not possible to measure all of the psychometric properties for any of the thirteen PROMs included in the review.

[Table 1-8 here]

Validity

Content Validity

Content validity was assessed in all measures. However, four of the PROMs (PINCOM-Q (G), HSOPSC, T-TPQ, T-TAQ) relied only on the ratings of the reviewers, as PROM development or content validity studies were either not available, or did not meet the eligibility criteria to be included in the review (e.g. if the PROM was developed in a different population). Four of the instruments were evaluated in a content validity study (CMHT Effectiveness Scale, IITC-ESMH, CPAT, SPSDM). Content validity ratings for the remaining five measures were based on PROM development studies and the ratings of the reviewer. None of the PROMs were rated 'insufficient' in regards to content validity, with six PROMs rated 'sufficient' and seven rated 'inconsistent'. PROMs were often rated 'inconsistent' when the individual ratings for relevance, comprehensiveness, and comprehensibility, which are aspects of content validity, were conflicting. This occurred frequently, as many of the studies did not focus on all three of these aspects when assessing content validity.

Structural Validity

Structural validity was evaluated in eleven of the instruments, with only four of these being rated as 'sufficient' (CMHT Effectiveness Scale, PINCOM-Q (G), SPSDM, TACT). Different measures of evaluating structural validity were used across the studies for these instruments but they were all rated as 'sufficient' as they either reported comparative fit index (CFI) and Tucker-Lewis index (TLI) >0.95 (SPSDM), Root Mean Square Error of Approximation (RMSEA) <0.06 (PINCOM-Q (G), TACT), or Standardized Root Mean Residuals (SRMR) <0.08 (CHMT Effectiveness Scale). One instrument was rated as 'insufficient' as it did not meet the criteria regarding CFI (CMHTEQ; CFI <0.95). The remaining six instruments (IITC-ESMH, T-TPQ, T-TAQ, CPAT, PINCOM-Q, MHDAT) were all rated as 'indeterminate' due to EFA being used to assess structural validity rather than CFA, meaning that no appropriate statistical measure was employed.

Cross-cultural Validity and Measurement Invariance

The CPAT was the only PROM in which cross-cultural validity was evaluated. This was rated as 'indeterminate' as no multiple group factor analysis was performed. Measurement invariance was evaluated in both the CPAT and the SPSDM; again the CPAT was rated as 'indeterminate' as no differential item functioning (DIF) analysis was conducted. Conversely, the SPSDM was rated 'sufficient' as DIF was conducted to examine group differences between age groups, professions, gender, and job grade. DIF was found with several items for different staff groups however, these items were subsequently removed, so no DIF was observed in the items in the final version of the instrument.

Hypothesis Testing for Construct Validity

Within the COSMIN methodology, the criteria for good measurement properties (41,56) suggests that prior to rating, the review team should develop a set of hypotheses regarding the expected relationship between a PROM and other comparator instruments, and hypotheses relating to possible expected differences between subgroups. These hypotheses should encompass information about the expected direction and strength of a correlation or difference. The generic hypotheses outlined in the COSMIN guidelines (56) were utilised whenever authors of the included papers did not state their own hypotheses. The hypotheses were; 1) correlations with instruments measuring similar constructs should be ≥0.50; 2) correlations with instruments measuring related, but dissimilar constructs should be between 0.30-0.50; correlations with instruments measuring unrelated constructs should be <0.30; 4) meaningful differences are expected when groups are compared by team, but no meaningful differences should be reported for other (sub)groups.

Construct validity was assessed in six PROMs, with four PROMs rated as 'sufficient' (PIINCOM-Q revised, HSOPSC, T-TAQ, CPAT) and two rated as 'insufficient' (T-TPQ, SPSDM). The SPSDM and CPAT reported solely on convergent validity. The SPSDM was given an 'insufficient'

rating as the results of the correlation with the three teamwork subscales of the HSOPSC, which were considered to be measuring a related construct, were not in accordance with the generic hypotheses. The CPAT was rated as 'sufficient' as the results were in accordance with the hypotheses. Three PROMs reported on both convergent and known-groups validity, with the PINCOM-Q (revised) and T-TAQ both rated as 'sufficient' due to the results being in accordance with the hypotheses. The T-TAQ reported no meaningful differences between professions but did report meaningful differences between scores for different teams. However, the T-TPQ was rated as 'insufficient' as there were no meaningful differences reported by team, meaning that the results were not in agreement with the hypotheses. Finally, only known-groups validity was assessed in the HSOPSC. This was rated as 'sufficient' as no meaningful differences were reported between different professions; hence, this was in line with the hypotheses.

Reliability

Measurement Error

Measurement error was only reported for one instrument, the CPAT, and was rated 'indeterminate'. This was due to the minimal important change (MIC) not being defined.

Reliability

Three PROMs reported evidence on reliability, with the TACT and CPAT evaluating test-retest reliability and the CMHT Effectiveness Scale examining inter-rater reliability. The CPAT was the only PROM to receive a 'sufficient' rating, as the reported ICC for the total PROM score was >0.70. Conversely the TACT and the CMHT Effectiveness Scale were both rated as 'insufficient' due to the reported ICCs being <0.70.

Internal Consistency

Internal consistency was evaluated in all measures and was rated as 'sufficient' in eight of these measures (CMHT Effectiveness Scale, PINCOM-Q revised, CMHTEQ, IITC-ESMH, T-TPQ, T-TAQ, SPSDM, TACT) as the reported Cronbach's alphas for each unidimensional scale or subscale

in all these measures were ≥ 0.70. Three measures were found to have 'insufficient' internal consistency (CPAT, PINCOM-Q (G), PINCOM-Q) as several of the subscales of these PROMs reported Cronbach's alpha scores of < 0.70. Finally, two PROMs were given an 'indeterminate' rating as the assumption of these PROMs having 'at least low evidence' for structural validity was not met. Structural validity is a requirement for interpreting data on internal consistency and so a 'sufficient' or 'insufficient' rating cannot be given without this.

Responsiveness

Two instruments were evaluated longitudinally in the included studies however, only one of these reported evidence for responsiveness. The SPSDM was rated as 'sufficient' as significant differences were found when comparing pre and post-intervention scores on the PROM, with scores increasing following an intervention aiming to improve collaboration. This was in accordance with the hypothesis defined by the researchers in the paper reporting on the SPSDM, rather than a hypothesis developed by the reviewer.

Certainty of Evidence

A modified version of the Grading of Recommendations Assessment, Development, and Evaluation (GRADE) approach was utilised to assess the confidence in the body of evidence for each psychometric property of each PROM assessed in this review (46). The results of this are outlined in Table 1-8. Although the COSMIN manual describes four factors (risk of bias, inconsistency, imprecision, and indirectness) to be considered when using the GRADE approach, inconsistency was not a factor in evaluating the evidence in this review as the majority of the included PROMs were only appraised by one study. It was still deemed appropriate to utilise the GRADE approach however, as none of the included studies were downgraded due to imprecision, as all of the samples from the included studies were over 100. Furthermore, no studies were downgraded due to indirectness, as all included studies were conducted in the population and context of interest.

The quality of evidence across all measurement properties was most frequently rated as 'high', with all of the PROMs rating the quality of evidence for the ratings of internal consistency as 'high'. However, these scores should be interpreted with caution, as the evidence for the psychometric properties of the included PROMs comes mostly from single studies, rather than multiple studies of adequate or high quality.

Discussion

This is the first systematic review to evaluate characteristics and measurement properties of measures of teamwork in MH teams. A thorough systematic search strategy was utilised to identify thirteen teamwork instruments from fifteen studies, and the resultant findings of this review are that there is a lack of evidence for psychometrically robust measures of teamwork in MH teams.

There were differences in the aspect of teamwork measured by each of the instruments. Four of the PROMs measured interprofessional collaboration (25,47-50,52,53), which has been described in the literature as: the ways in which different professionals work together to improve service delivery and patient outcomes (57). However, in other research, interprofessional collaboration is referred to specifically as teamwork between individuals from other professions (58). Six of the included PROMs reported either teamwork, perceived teamwork, or attitudes towards teamwork as the main construct of interest (26,27,51,54,59). These measures explored a range of inputs, processes/mediators, and outputs (34), with the majority of the items in these scales being related to team processes and emergent states. Two of the instruments explored team effectiveness, where effectiveness was measured not just by outputs (such as attaining a level of clinical outcome) but also by assessing team processes and emergent states, such as effective communication and respect between professionals (24,31). Finally, one PROM (28) measured only shared problem-solving and decision-making, which can be understood as behavioural aspects of teamwork, indeed other instruments included in the review also measured

shared problem-solving as part of a broader scale. This suggests that although the instruments appear to be measuring different constructs, many of the items measure similar dimensions of teamwork.

Although all of the included instruments were tested in MH teams, the types of settings and service users supported by these teams were different, this may be important when considering which PROM is most relevant for assessing teamwork in one's team. All iterations of the PINCOM-Q, IITC-ESMH, T-TPQ, and T-TAQ were specifically developed and trialled in MH teams working with children and young people. Whereas three of the measures (TACT, CMHTEQ, CMHT Effectiveness Scale) were designed for and tested in community MH teams (CMHTs). CMHTs have their own distinct challenges such as, a varied and challenging service user need, high caseloads, and a chronic lack of resources (38,44). Similarly, inpatient MH settings have also been reported to have problems with staffing, workload, and increased pressures (60). Three of the PROMs were evaluated in inpatient MH settings (HSOPSC, CPAT, SPSDM). Despite these well-reported issues in both CMHTs and inpatient MH settings, the measures included in this review focus mainly on the processes/mediators of teamwork, rather than inputs that may inhibit effective teamwork such as inadequate staffing levels (61). This should be considered when selecting PROMs for use in these settings, suggesting that they may need to be used in conjunction with other measures that capture issues with staffing, workload, and burnout.

In order to reach an informed decision about the reliability of a measure, all three measurement properties within the domain should be assessed, reliability, internal consistency, and measurement error. However, the evaluation of reliability was poor in the PROMs appraised in this review, with only one reporting on all three aspects of reliability (CPAT) and this being the only included PROM to report on measurement error. The results of the appraisal of reliability in the CPAT were inconsistent however, with only the measurement property of reliability rated as sufficient. This alone is not enough to determine that the overall PROM is a sufficiently reliable

measure.

None of the PROMs included in this review evaluated the measurement property of criterion validity, due to there being no pre-existing 'gold standard' instrument. The CPAT reported on the most measurement properties within the domain of validity but again, these results were inconsistent, with construct validity being the only domain to be rated as 'sufficient' and the methodological quality of this being 'doubtful'. This is important because a lack of content validity can impact upon all other measurement properties of a PROM (43). Content validity was reported for all instruments in this review; however, four of these scores were based only on the ratings of the reviewer (T-TAQ, T-TPQ, HSOPSC, PINCOM-Q (G)), and these PROMs were rated as 'very low'. For studies that did report directly on content validity, the methodology for all of these were rated as 'doubtful', due to inappropriate methods of collecting data on relevance, comprehensiveness, and comprehensibility; or the items not being tested in an appropriate number of professionals or members of the target population.

The SPSDM was the only PROM to report on responsiveness, with this instrument being found to have 'sufficient' responsiveness and 'very high' methodological quality. The quality of evidence was also rated as 'high'. This suggests that the SPSDM is able to detect change over time in the constructs of shared problem-solving and decision-making. The majority of this PROMs in this review did not measure responsiveness due to the studies evaluating them being cross-sectional, rather than longitudinal.

As the psychometric properties of all instruments cannot be comprehensively appraised because of missing measurement properties, conclusions on the robustness of the PROMs included in this review are restricted. The CPAT evaluated the highest number of measurement properties (*n*=8), but there were discrepancies and only construct validity and reliability were rated as 'sufficient', with the methodological quality of reliability being 'very good', but reliability being 'doubtful'. The PROM that reported the highest number of 'sufficient' measurement

properties was the SPSDM (*n*=5), reporting 'sufficient' ratings for content validity, structural validity, internal consistency, measurement invariance, and responsiveness. However, the methodological quality of content validity was 'doubtful' and was 'inadequate' for measurement invariance, suggesting that not all 'sufficient' ratings were based on robust evidence. Furthermore, the SPSDM is a short PROM, measuring only the constructs of shared problem-solving and decision-making, hence it is unlikely to be useful as a standalone measure of teamwork and would be best utilised in combination with other PROMs. As such, it is recommended that future studies follow the COSMIN standards (41) when both developing and validating measurement instruments in order to ameliorate these psychometric and methodological flaws.

Strengths and Limitations

A strength of this review is the use of the COSMIN methodology for assessing content validity (43), the COSMIN Risk of Bias checklist (41), and the quality criteria for measurement properties (56). These appraisal tools are peer-reviewed, and offer a comprehensive, systematic, and transparent process to evaluate the methodological quality and psychometric properties of PROMs. Another strength is the systematic search of the literature that was conducted. The search terms used were broad and included synonyms for teamwork, which were not utilised in another similar review study of the psychometric properties of teamwork in healthcare (33).

Despite the use of the COSMIN methodology being a strength of this review, the Risk of Bias checklist has also been criticised for being too harsh, due to the employment of a 'worst score counts' evaluation method (62). Furthermore, McKenna and Heaney (63) argue that the COSMIN checklist is subjective, based on the opinions of the developers, rather than on empirical evidence and that the advent of the COSMIN methodology has not improved the quality of PROMs. Another limitation of the COSMIN appraisal tools is its scope of use. The COSMIN tools were originally developed to evaluate patient-reported outcome measures, and despite recently

expanding the scope of the COSMIN methodology to include clinician-reported instruments (64), which refer to clinician-reported outcomes relating to patients, it is possible that different criteria may be more relevant when appraising professional-reported outcome measures of their own work (65).

A further limitation is that a number of the psychometric measurement properties could not be evaluated in many of the included PROMs. Structural validity and internal consistency were routinely reported in the studies, perhaps because these are dimensions that are relatively quick and simple to evaluate. However, other properties were poorly reported, this reflected properties in which a PROM would need to be retested over time, or with a different group (e.g. reliability, measurement error), or where a PROM would need to be compared to a pre-existing 'gold standard' (e.g. criterion validity). Due to large amounts of missing data in these domains, rather than poor scores, it is difficult to conclude that the included PROMs are definitively not psychometrically robust, rather the evidence to conclude that they are does not yet exist.

The use of the GRADE approach can be considered both a positive and a negative in this review. The approach is helpful as it is used throughout the systematic review literature and provides a common framework and terminology for researchers (66). However, a modified version of the GRADE approach was utililised in this review, which was recommended in the COSMIN guidance (43) but is not recommended by the GRADE handbook (46). Furthermore, it is not clear whether using the GRADE approach is appropriate when evaluating single studies, as there is no way to consider inconsistency. Ultimately, the GRADE approach remains the most suitable way of assessing the quality of evidence in this review, but given that the body of evidence is modest, these ratings should not be considered definitive.

Implications for Future Research and Practice

This review demonstrates the lack of evidence for robust psychometric properties across measures of teamwork in MH teams. The majority of the studies included did not report data on

multiple psychometric properties and the evidence provided was often of low quality, with PROMs frequently being evaluated in only one study. This results in difficulties drawing overall conclusions about the usefulness of the instruments in practice. Further research is required to assess the validity and reliability of these instruments, before clinicians and researchers can feel confident in their use. The standardised appraisal tool of the criteria for good psychometric properties, outlined in the COSMIN methodology should be utilised to establish robust psychometric properties of an instrument (41,56). The standards outlined in the COSMIN methodology should also be used to guide future PROM development, as this will ensure high methodological quality and consistency across studies of psychometric quality.

The measurement of teamwork in MH care is of interest as effective teamwork is related to positive outcomes for both service users and staff (12,15,17). It is particularly timely as MH services are experiencing problems with staff shortages, burnout, and increased need, with the number of people in contact with NHS MH services increasing from 3.6 million to 4.5 million in recent years (38). However, 'teamwork' is not currently a well-defined concept in the literature. In order to effectively define and measure teamwork in MH settings, research should focus on extracting the factors that are of most interest conceptually. Future research should also concentrate on the aspects of teamwork that are most associated with meaningful outcomes in clinical practice such as, staff wellbeing, quality of service delivery and patient and staff safety.

Conclusion

In conclusion, this review adds to the current literature by offering a systematic overview of the methodological quality, psychometric properties, and quality of evidence for instruments measuring multiple dimensions of teamwork in MH settings. This review elucidated disparities in instrument characteristics and difficulties in conceptualising and evaluating teamwork, which perhaps reflect a relative lack of interest in research into MH teams. The instruments included in this review exhibited mostly poor methodological quality and indeterminate or inconsistent

psychometric robustness. Further research is required to enable clinicians and researchers to choose appropriate instruments to evaluate and improve teamwork, which in turn may lead to enhanced staff wellbeing and improvement in outcomes for service users.

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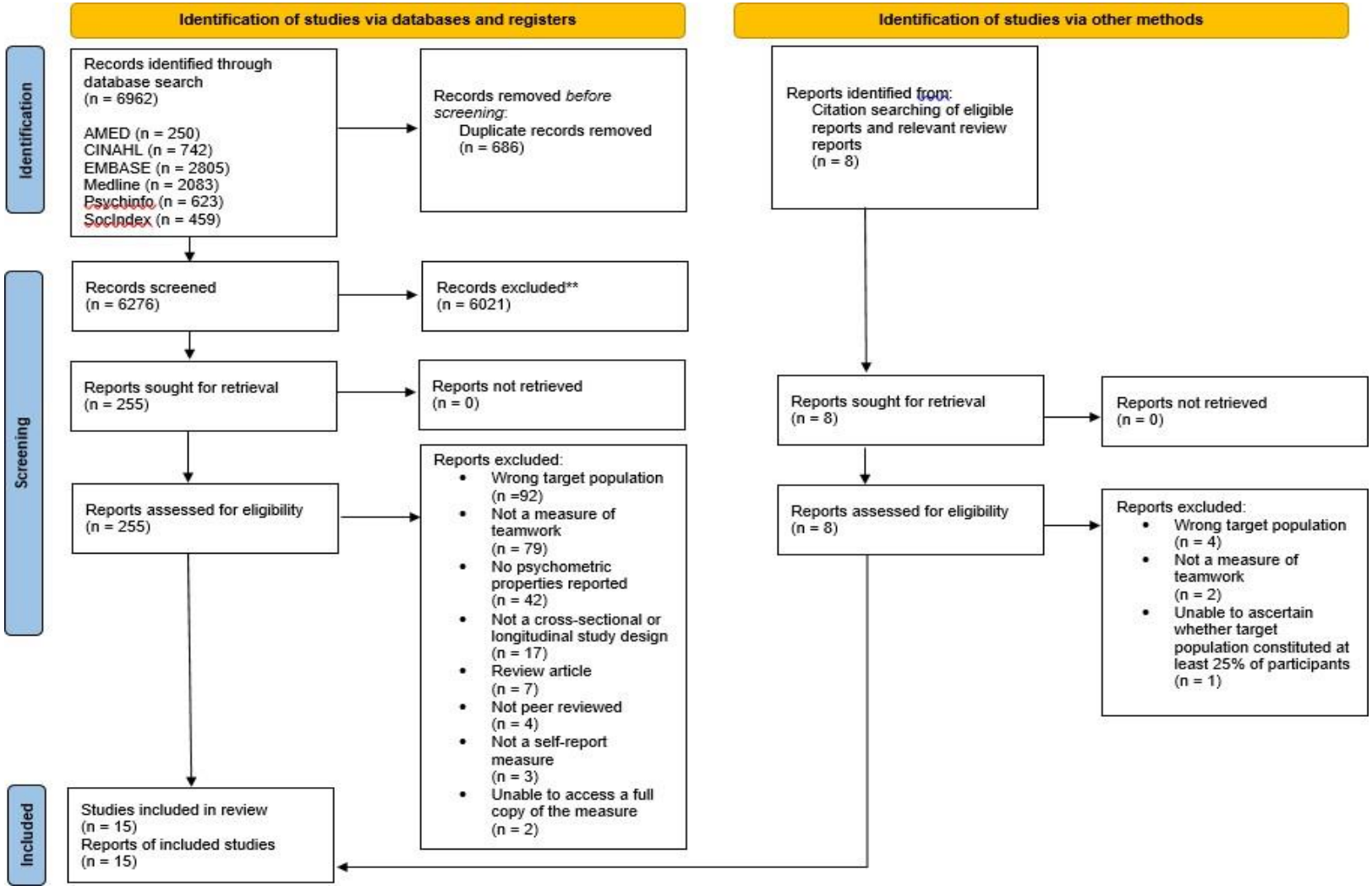
Figures

Figure 1-1

Overview of the Systematic Search and Screening Process



Tables

Table 1-1

Full Search Strategy Employed in the Review

Database	Search block	Search terms	Records identified
AMED	1	(((ZU "nurses") or (ZU "nurses role") or (ZU "nursing") or (ZU "nursing care") or (ZU "nursing staff") or (ZU "nursing staff hospital")) or (ZU "cooperative behavior"))) or ((ZU "group processes")) or ("collaboration" or "cooperation" or "teamwork*" or "teams" or "Work Teams") OR TI (teamwork OR collaboration OR cooperation OR (team* N3 effectiv*) OR AB (teamwork OR collaboration OR cooperation OR (team* N3 effectiv*))	13173
	2	((ZU "mental health") or (ZU "mental health care") or (ZU "mental health recovery") or (ZU "mental health services")) or ((ZU "hospital units")) OR ("Hospital Environment" OR "Psychiatric Clinics" OR "Psychiatric Units" OR "Psychiatric Hospitals" OR "Psychiatric Units" OR "Community Mental Health Services" OR DE "Mental Health Services" OR "Community Mental Health Services" OR DE "Community Mental Health" OR "mental health hospital" OR "acute mental health" OR "inpatient mental health") TI (((psyc* OR mental) N5 (hospital* OR inpatient* OR in-patient* OR ward* OR communit* OR unit*))) OR AB (((psyc* OR mental) N5 (hospital* OR inpatient* OR in-patient* OR ward* OR communit* OR unit*)))	6475
	3	(((ZU "questionnaires")) OR ((ZU "psychometrics"))) OR ("Organizational and Occupational Measures" OR "Professional Measures") OR "Testing Methods" OR "Psychometrics" OR TI (assess* OR measure* OR questionnaire* OR psychometric* OR survey OR scale OR tool*) OR AB (assess* OR measure* OR questionnaire* OR psychometric* OR survey OR scale OR tool*	108411

	4	S1 AND S2 AND S3	250
CINAHL	1	(MM "Teamwork/MT/ST/SN/EV") OR (MM "Collaboration/EV/MT/ST/SN") OR (MM "Group Processes+/EV") OR ("Teams" OR "Work Teams" OR "Teamwork") OR TI (teamwork OR collaboration OR cooperation OR (team* N3 effectiv*) OR AB (teamwork OR collaboration OR cooperation OR (team* N3 effectiv*))	155534
	2	(MH "Mental Health Organizations+") OR (MH "Mental Health") OR "mental health" OR (MH "Community Mental Health Services+") OR (MH "Mental Health Personnel+") OR (MH "Mental Health Services+") OR (MH "Community Mental Health Nursing") OR (MH "Hospitals, Psychiatric") OR (MH "Psychiatric Nursing+") OR (MH "Inpatients") OR (MH "Psychiatric Patients+") OR (MH "Rehabilitation Patients") OR TI ((psyc* OR mental) N5 (hospital* OR inpatient* OR in-patient* OR ward* OR communit* OR unit*)) OR AB ((psyc* OR mental) N5 (hospital* OR inpatient* OR in-patient* OR ward* OR communit* OR unit*))	347282
	3	(MH "Psychometrics/MT/ST/SN") OR (MH "Structured Questionnaires/EV/MT/ST") OR (MH "Questionnaires+/EV/ST/MT") OR TI ((assess* OR measure* OR questionnaire* OR psychometric* OR survey OR scale OR tool*) AND AB (assess* OR measure* OR questionnaire* OR psychometric* OR survey OR scale OR tool*))	229511
	4	S1 AND S2 AND S3	742

EMBASE	1	exp teamwork/ or exp multidisciplinary team/ or exp cooperation/ or (teamwork* or collaboration or cooperation or 'team effectiv*').ti. or (teamwork* or collaboration or cooperation or 'team effectiv*').ab.	290861
	2	mental health/ or exp mental health care/ or exp mental health center/ or exp mental health organization/ or exp mental health service/ or exp mental hospital/ or exp psychiatric department/	333319
	3	(measure* or questionnaire or survey or scale or tool or psychometric*).ti. or (measure* or questionnaire or survey or scale or tool or psychometric*).ab.	7380927
	4	S1 AND S2 AND S3	2805
Medline	1	((MH "Patient Care Team+") OR (MH "Nursing, Team") OR "team" OR (MH "Psychology, Medical+") OR (MH "Psychiatry+") OR "teamwork" OR "collaboration" OR (MH "Intersectoral Collaboration") OR "cooperation" OR (MH "Workplace") OR (MH "Work Engagement") OR (MH "Social Cohesion") OR "cohesion" OR TI ((teamwork OR collaboration OR cooperation OR (team* N3 effectiv*)) AND AB (teamwork OR collaboration OR cooperation OR (team* N3 effectiv*)))	650961

	2	(MH "Hospitals, Psychiatric") OR (MH "Psychiatric Department, Hospital") OR (MH "Mental Health") OR "mental health" OR (MH "Community Mental Health Centers+") OR (MH "Community Mental Health Services") OR (MH "Mental Health Services+") OR TI (((psyc* OR mental) N5 (hospital* OR inpatient* OR in-patient* OR ward* OR communit* OR unit*))) OR AB (((psyc* OR mental) N5 (hospital* OR inpatient* OR in-patient* OR ward* OR communit* OR unit*)))	511837
	3	TI ((measure* OR questionnaire* OR psychometric* OR survey OR scale OR tool*) AND AB (measure* OR questionnaire* OR psychometric* OR survey OR scale OR tool*))	503744
	4	S1 AND S2 AND S3	2083
Psychinfo	1	(DE "Collaborative Learning" OR DE "Computer Supported Collaborative Learning" OR DE "Cooperative Learning" OR DE "Collaboration" OR DE "Cross Cultural Collaboration" OR DE "Cooperation" OR DE "Work Teams" OR DE "Self-Managing Work Teams" OR DE "Virtual Teams" OR DE "Group Dynamics" OR DE "Group Characteristics" OR DE "Group Cohesion" OR DE "Group Development" OR DE "Group Differences" OR DE "Group Discussion" OR DE "Group Participation" OR DE "Group Performance" OR DE "Intergroup Dynamics" OR DE "Teams" OR DE "Virtual Group Dynamics" OR DE "Teams" OR DE "Work Teams" OR DE "Teamwork") OR TI (teamwork OR collaboration OR cooperation OR (team* N3 effectiv*)) OR AB (teamwork OR collaboration OR cooperation OR (team* N3 effectiv*))	147787

	2	(DE "Hospital Environment" OR DE "Psychiatric Clinics" OR DE "Psychiatric Units" OR DE "Psychiatric Hospitals" OR DE "Psychiatric Units" OR DE "Community Mental Health Services" OR DE "Community Counseling" OR DE "Mental Health Services" OR DE "Community Mental Health Services" OR DE "Psychological First Aid" OR DE "School Based Mental Health Services" OR DE "Assertive Community Treatment" OR DE "Community Mental Health" OR DE "Assertive Community Treatment") OR TI (((psyc* OR mental) N5 (hospital* OR inpatient* OR in-patient* OR ward* OR communit* OR unit*))) OR AB (((psyc* OR mental) N5 (hospital* OR inpatient* OR in-patient* OR ward* OR communit* OR unit*)))	369676
	3	DE "Psychometric*" OR TI ((assess* OR measure* OR questionnaire* OR psychometric* OR survey Or scale Or tool*) AND AB (assess* OR measure* OR questionnaire* OR psychometric* OR survey Or scale Or tool*))	306499
	4	S1 AND S2 AND S3	623
SocIndex	1	((DE "TEAMS in the workplace" OR DE "QUALITY circles" OR DE "DIVISION of labor" OR DE "TEAMS" OR DE "WORK environment" OR DE "COWORKER relationships" OR DE "GROUP decision making" OR DE "GROUP work in research" OR DE "ORGANIZATIONAL behavior" OR DE "SHARED leadership") OR (DE "INTERPROFESSIONAL collaboration")) OR (DE "INTERPROFESSIONAL relations") OR TI (teamwork OR collaboration OR cooperation OR (team* N3 effectiv*)) OR AB (teamwork OR collaboration OR cooperation OR (team* N3 effectiv*))	68718

2	((((DE "COMMUNITY mental health services" OR DE "COMMUNITY mental health services for older people" OR DE "RURAL mental health services") OR (DE "MENTAL health services")) OR (DE "HOSPITALS" OR DE "HOSPITAL & community" OR DE "HOSPITAL wards" OR DE "PSYCHIATRIC hospitals")) OR (DE "SOCIOLOGY of hospitals")) OR (DE "SOCIOLOGY of psychiatric hospitals") OR TI (((psyc* OR mental) N5 (hospital* OR inpatient* OR in-patient* OR ward* OR communit* OR unit*))) OR AB (((psyc* OR mental) N5 (hospital* OR inpatient* OR in-patient* OR ward* OR communit* OR unit*)))	35690
3	(DE "QUESTIONNAIRE design") OR (DE "CROSS-sectional method") OR TI (assess* OR measure* OR questionnaire* OR psychometric* OR survey Or scale Or tool*) OR AB (assess* OR measure* OR psychometric* OR questionnaire* OR survey OR scale OR tool*)	489344
4	S1 AND S2 AND S3	459

Table 1-2

Definitions of and Criteria for Good Psychometric Measurement Properties

Measurement Property	Definition	Rating	Criteria
Content validity	The degree to which the content of a PROM is an adequate reflection of the construct to be measured	**+**	All items are relevant to the construct of interest, target population, and context of us AND no key concepts are missing AND the PROM is understood by the population of interest as intended
		?	Not all criteria for '+' reported
		-	Criteria for '+' not met
Structural validity	The degree to which the scores of a PROM are an adequate reflection of the dimensionality of the construct to be measured		**CTT:** CFA: CFI or TLI or comparable measure >0.95 OR RMSEA <0.06 OR SRMR <0.08[a] **IRT/Rasch:** No violation of unidimensionality[b]: CFI or TLI or comparable measure >0.95 OR RMSEA <0.06 OR SRMR <0.08 *AND* no violation of local independence: residual correlations

		+	among the items after controlling for the dominant factor <0.20 OR Q3's <0.37 *AND* no violation of monotonicity: adequate looking graphs OR item scalability >0.30 *AND* adequate model fit: IRT: $\chi 2$ >0.01 Rasch: infit and outfit mean squares ≥0.5 and ≤1.5 OR Z-standardized values > -2 and <2
		?	CTT: Not all information for '+' reported IRT/Rasch: Model fit not reported
		-	Criteria for '+' not met
Internal consistency	The degree of the interrelatedness among the items	+	At least low evidence[c] for sufficient structural validity[d] AND Cronbach's alpha(s) ≥0.70 for each unidimensional scale or subscale[6]
		?	Criteria for "At least low evidence[4] for sufficient structural Validity[e]" not met

		-	At least low evidence[c] for sufficient structural validity[d] AND Cronbach's alpha(s) <0.70 for each unidimensional scale or Subscale[e]
Reliability	The degree to which the measurement is free from measurement error	+	ICC or weighted Kappa ≥0.70
		?	ICC or weighted Kappa not reported
		-	ICC or weighted Kappa <0.70
Measurement error	The systematic and random error of a patient's score that is not attributed to true changes in the construct to be measured	+	SDC or LoA < MIC[d]
		?	MIC not defined
		-	SDC or LoA > MIC[d]
Hypothesis testing for construct validity	The degree to which the scores of a PROM are consistent with hypotheses based on the assumption that the PROM validly measures the construct to	+	The result is in accordance with the hypothesis[f]
		?	No hypothesis defined (by the review team)
		-	The result is not in accordance with the hypothesis[f]

	be measured		
Cross-cultural validity/measurement invariance	The degree to which the performance of the items on a translated or culturally adapted PROM are an adequate reflection of the performance of the items of the original version of the PROM	+	No important differences found between group factors (such as age, gender, language) in multiple group factor analysis OR no important DIF for group factors (McFadden's R^2 <0.02)
		?	No multiple group factor analysis OR DIF analysis performed
		-	Important differences between group factors OR DIF was found
Criterion validity	The degree to which the scores of a PROM are an adequate reflection of a 'gold standard'	+	Correlation with gold standard ≥0.70 OR AUC ≥0.70
		?	Not all information for '+' reported
		-	Correlation with gold standard <0.70 OR AUC <0.70
Responsiveness	The ability of a PROM to detect change over time in the construct to be measured	+	The result is in accordance with the hypothesis[f] OR AUC ≥0.70
		?	No hypothesis defined (by the review team)
		-	The result is not in accordance with the hypothesis[f] OR AUC <0.70

Note: Criteria are based on Terwee et al. (2007), Prinsen et al. (2016), and Prinsen et al. (2018).

AUC = area under the curve, CFA = confirmatory factor analysis, CFI = comparative fit index, CTT = classical test theory, DIF = differential item functioning, ICC = intraclass correlation coefficient, IRT = item response theory, LoA = limits of agreement, MIC = minimal important change, RMSEA: Root Mean Square Error of Approximation, SEM = Standard Error of Measurement, SDC = smallest detectable change, SRMR: Standardized Root Mean Residuals, TLI = Tucker-Lewis index

"+" = sufficient, " –" = insufficient, "?" = indeterminate

a To rate the quality of the summary score, the factor structures should be equal across studies

b unidimensionality refers to a factor analysis per subscale, while structural validity refers to a factor analysis of a (multidimensional) patient-reported outcome measure

c As defined by grading the evidence according to the GRADE approach

d This evidence may come from different studies

e The criteria 'Cronbach alpha < 0.95' was deleted, as this is relevant in the development phase of a PROM and not when evaluating an existing PROM.

f The results of all studies should be taken together and it should then be decided if 75% of the results are in accordance with the hypotheses

Table 1-3

Definitions of Quality Levels using the GRADE Approach

Quality Level	Definition
High	We are confident that the true measurement property lies close to that of the estimate* of the measurement property
Moderate	We are moderately confident in the measurement property estimate: the true measurement property is likely to be close to the estimate of the measurement property, but there is a possibility that it is substantially different
Low	Our confidence in the measurement property estimate is limited: the true measurement property may be substantially different from the estimate of the measurement property
Very Low	We have very little confidence in the measurement property estimate: the true measurement property is likely to be substantially different from the estimate of the measurement property

Note. * Estimate of the measurement property refers to the pooled or summarised result of the measurement property of a PROM; these definitions were adapted from the GRADE approach (Schünemann et al., 2013; Mokkink et al., 201

Table 1-4

Modified GRADE Approach for Grading the Quality of Evidence

Quality of Evidence	Lower if
High	Risk of bias
	-1 Serious
Moderate	-2 Very serious
	-3 Extremely serious
Low	
	Inconsistency
Very Low	-1 Serious
	-2 Very serious
	Imprecision
	-1 total n=50-100
	-2 total n<50
	Indirectness
	-1 Serious
	-2 Very serious

Note. n=sample size; Schünemann et al., 2013; Mokkink et al., 2018

Table 1-5

Characteristics of studies addressing the psychometric properties of teamwork in mental health teams

Instrument	Study	Setting & Population	Country	Sample Size	Use of a Comparator Instrument
CMHT Effectiveness Scale	El Ansari et al. (2016)	Stage 1: CMHT staff Social workers, psychiatrists, psychologists, occupational therapists, nurses, support workers, and administrators Stage 2: 135 CMHTs from 11 different Trusts	England	Stage 1: 157 Stage 2: 1500	None
PINCOM-Q	Ødegård (2005)	Stakeholders with experience in interprofessional collaboration working in schools, school psychology services, and a child psychiatric clinic Teachers, psychologists, special educators, and a medical doctor	Norway	7	None
PINCOM-Q	Ødegård (2006)	Professionals working with children and young people in primary care, including school psychology services, child psychiatric clinics, and schools	Norway	134	None

		Teachers, special educators, social workers, psychologists, nurses, child welfare workers, and medical doctors			
PINCOM-Q	Ødegård & Strype (2009)	Professionals working with children and young people in primary care, including school psychology services, child psychiatric clinics, and schools Teachers, psychologists, social workers, nurses, child welfare workers, and doctors	Norway	157	None
PINCOM-Q (revised)	Rousseau et al. (2012)	Professionals working within youth mental health, general youth psychosocial care, and school teams Social workers, psycho-educators, psychologists, art therapists, educators, nurses, and consultant child psychiatrists	Canada	96	Échelle de confort décisionnel-partenaire (ECD-P) (Rousseau et al., 2012) Measures shared decision-making
PINCOM-Q (revised)	Rousseau et al. (2017)	Youth mental health teams working in community health centres Social workers, psychologists, therapists, doctors, and nurses	Canada	104	None

PINCOM-Q (G)	Jörns-Presentati et al. (2021)	Professionals working with children and young people in youth welfare offices, child and youth welfare agencies, and a child and adolescent psychiatric hospital Social workers, child welfare workers, nurses, psychologists, psychotherapists, and psychiatrists	Germany	360	None
HSOPSC	Kuosmanen et al. (2013)	Two state-run forensic psychiatric hospitals Doctors, nurses, pharmacists, social workers, psychologists, occupational therapists, directors	Finland	283	None
MHDAT	Roncalli et al. (2013)	Clinical psychologists who had previously worked or were currently working in a CMHT	Ireland	77	None
CMHTEQ	Rees et al. (2001)	CMHT Staff Psychiatric nurses, occupational therapists, psychiatrists, clinical psychologists, social workers, support workers, and admin staff	England	1450	None
IITC-ESMH	Mellin et al. (2010)	School mental health professionals	USA	436	None

T-TPQ T-TAQ	Wolk et al. (2020)	Mental health team members from community mental health agencies contracted to provide school therapeutic services Team leaders, counsellors, social workers, paraprofessional providers	USA	167	None
CPAT	Tomizawa et al. (2017)	Staff working in psychiatric inpatient units of two hospitals in the USA and staff working in four forensic psychiatric units in Japan Psychiatrists, nurses, psychologists, social workers, occupational therapists, pharmacists, and rehabilitation therapists	USA and Japan	244	Team member satisfaction measure (Tomizawa et al., 2017)
SPSDM	Shoesmith et al. (2022)	Staff working in the outpatient department of a psychiatric hospital Doctors, nurses, and medical assistants	Malaysia	532	Collaboration and Satisfaction about Care Decisions (CSCD) (Gedney et al., 1994) Three subscales of the Hospital Survey on Patient Safety Culture (HSOPSC) (Sorra & Dyer, 2010)
TACT	Wholey et al. (2012)	Stage 1: Convenience sample of two ACT teams Stage 2: ACT team leaders and ACT team members Stage 3: Team members from one rural and one	USA	Stage 1: 28 Stage 2: 30 Stage 3: not reported Stage 4: 367	None

		urban ACT team Stage 4: 26 ACT teams	
		Multidisciplinary professionals specialising in areas such as mental health, substance abuse, social services, and nursing	

Note. CMHT Effectiveness Scale, Community Mental Health Effectiveness Scale; PINCOM-Q, Perception of Interprofessional Collaboration Model Questionnaire; PINCOM-Q Revised, Revised version of the Perception of Interprofessional Collaboration Model Questionnaire; PINCOM-Q (G), German translate of the Perception of Interprofessional Collaboration Model Questionnaire; HSOPSC, Hospital Survey on Patient Safety Culture; MHDAT, Mental Health Development Audit Tool; CMHTEQ, Community Mental Health Effectiveness Questionnaire; IITC-ESMH, Index of Interprofessional Team Collaboration for Expanded School Mental Health; T-TPQ, TeamSTEPPS Teamwork Perceptions Questionnaire; T-TAQ, TeamSTEPPS Teamwork Attitudes Questionnaire; CPAT, Collaborative Practice Assessment Tool; SPSDM, Shared Problem-Solving and Decision-Making Scale; TACT, Teamwork in Assertive Community Treatment Scale

Table 1-6

Characteristics of measures addressing the psychometric properties of instruments measuring teamwork in mental health teams

Instrument	Study(s)	Constructs measured	Target Population	Whole Measure Relevant to Review	Subscales	No. of items	Response Option
CMHT Effectiveness Scale	El Ansari et al. (2016)	Team Effectiveness	Community mental health teams	Yes	**7 subscales** Improved service user well-being Therapeutic relationships with service users Provision of continuous care Effective inter-team working Engagement with carers Creative problem-solving Respect between professionals	20	5-point Likert scale
PINCOM-Q	Ødegård (2005) Ødegård (2006)	Interprofessional Collaboration	Multi-disciplinary teams working in child mental health care	Yes	**6 Subscales** Interprofessional Climate Organizational Culture Organizational aims Professional Power Group Leadership Motivation	48	7-point Likert scale

PINCOM-Q	Ødegård & Strype (2009)	Interprofessional Collaboration	Multi-disciplinary teams working in child mental health care	Yes	**10 subscales** Motivation Role expectations Professional power Group leadership Communication Coping Social support Organizational culture Organizational aims Organizational domain	48	7-point Likert scale
PINCOM-Q (Revised)	Rousseau et al. (2012) Rousseau et al. (2017)	Interprofessional Collaboration	Multi-disciplinary teams working in child mental health care	Yes	**3 Subscales** Individual Group Organization	48	7-point Likert scale
PINCOM-Q (G)	Jörns-Presentati et al. (2021)	Interprofessional Collaboration	Multi-disciplinary teams working in child mental health care	Yes	**4 subscales** Interprofessional Climate Conflict Role Expectancy and Shared Goals Motivation	24	7-point Likert scale
HSOPSC	Kuosmanen et al. (2013)	Teamwork within and across units	Developed for healthcare staff working in general healthcare hospitals Specifically for healthcare staff working in psychiatric hospitals in this study	No	**3 Subscales** Teamwork within units Communication openness Teamwork across units	**11 Total** 4 3 4	5-point Likert scale

MHDAT	Roncalli et al. (2013)	Perceived team working	Community mental health teams	Yes	**3 subscales** Adherence to team structure, governance, and policies Intra-team co-operation Teamworking	25	4-point Likert scale
CMHTEQ	Rees et al. (2001)	Team Effectiveness	Community mental health teams	Yes	**3 Subscales** Meeting external requirements Internal team processes Evidence and feedback	27	5-point Likert scale
IITC-ESMH	Mellin et al. (2010)	Interprofessional collaboration	School mental health teams	Yes	**4 subscales** Reflection on process Professional flexibility Newly created professional activities Role interdependence	26	5-point Likert scale
T-TPQ	Wolk et al. (2020)	Perceptions of team skills and behaviour	School mental health teams	Yes	**5 subscales** Team structure Leadership Communication Mutual Support Situation monitoring	35	5-point Likert scale
T-TAQ	Wolk et al. (2020)	Attitudes related to teamwork	School mental health teams	Yes	**5 subscales** Team structure Leadership Communication Mutual Support Situation monitoring	30	5-point Likert scale

CPAT	Tomizawa et al. (2017)	Interprofessional Teamwork	Inpatient mental health teams	Yes	**5 subscales** Patient/community centred care Collaborative communication Interprofessional conflict Role clarification Environment	21	7-point Likert scale
SPSDM	Shoesmith et al. (2022)	Team collaboration Shared problem solving Shared decision making	Multi-disciplinary mental health teams	Yes	**2 subscales** Shared problem-solving Shared decision-making	12	5-point Likert scale
TACT	Wholey et al. (2012)	Team processes Teamwork	Assertive community treatment teams (multidisciplinary mental health teams)	No	**7 subscales** Exploration Exploitation of new and existing knowledge Psychological safety Goal agreement Conflict Constructive controversy Information accessibility	**32 Total** 5 6 8 3 4 2 4	4-point Likert scale 5-point Likert scale

Note. CMHT Effectiveness Scale, Community Mental Health Effectiveness Scale; PINCOM-Q, Perception of Interprofessional Collaboration Model Questionnaire; PINCOM-Q Revised, Revised version of the Perception of Interprofessional Collaboration Model Questionnaire; PINCOM-Q (G), German translate of the Perception of Interprofessional Collaboration Model Questionnaire; HSOPSC, Hospital Survey on Patient Safety Culture; MHDAT, Mental Health Development Audit Tool; CMHTEQ, Community Mental Health Effectiveness Questionnaire; IITC-ESMH, Index of Interprofessional Team Collaboration for Expanded School Mental Health; T-TPQ, TeamSTEPPS Teamwork Perceptions Questionnaire; T-TAQ, TeamSTEPPS Teamwork Attitudes Questionnaire; CPAT, Collaborative Practice Assessment Tool; SPSDM, Shared Problem-Solving and Decision-Making Scale; TACT, Teamwork in Assertive Community Treatment Scale

Table 1-7

Quality appraisal for the methodology of each psychometric property measurement per study in the review

Instrument	Study	Content Validity	Structural Validity	Internal Consistency	Cross-cultural Validity/ Measurement Invariance	Reliability	Measurement Error	Criterion Validity	Construct Validity	Responsiveness
CMHT Effectiveness Scale	El Ansari et al. (2016)	Doubtful	Very Good	Very Good	NR	Adequate	NR	NR	NR	NR
PINCOM-Q	Ødegård (2005)	NR	NR	NR	NR	NR	NR	NR	NR	NR
PINCOM-Q	Ødegård (2006)	NR	Inadequate	Very Good	NR	NR	NR	NR	NR	NR
PINCOM-Q	Ødegård & Strype (2009)	NR	NR	Very Good	NR	NR	NR	NR	NR	NR
PINCOM-Q (revised)	Rousseau et al. (2012)	NR	NR	Very Good	NR	NR	NR	NR	Doubtful	NR

PINCOM-Q (revised)	Rousseau et al. (2017)	NR	NR	Very Good	NR	NR	NR	NR	NR	NR
PINCOM-Q (G)	Jörns-Presentati et al. (2021)	NR	Very Good	Very Good	NR	NR	NR	NR	NR	NR
HSOPSC	Kuosmanen et al. (2013)	NR	NR	Very Good	NR	NR	NR	NR	Doubtful	NR
MHDAT	Roncalli et al. (2013)	NR	Inadequate	Very Good	NR	NR	NR	NR	NR	NR
CMHTEQ	Rees et al. (2001)	NR	Very Good	Very Good	NR	NR	NR	NR	NR	NR
IITC-ESMH	Mellin et al. (2010)	Doubtful	Adequate	Very Good	NR	NR	NR	NR	NR	NR
T-TPQ	Wolk et al. (2020)	NR	Inadequate	Very Good	NR	NR	NR	NR	Doubtful	NR
T-TAQ	Wolk et al. (2020)	NR	Inadequate	Very Good	NR	NR	NR	NR	Doubtful	NR

CPAT	Tomizawa et al. (2017)	Doubtful	Adequate	Very Good	Doubtful	Very Good	Very Good	NR	Doubtful	NR
SPSDM	Shoesmith et al. (2022)	Doubtful	Very Good	Very Good	Inadequate	NR	NR	NR	Inadequate	Very Good
TACT	Wholey et al. (2012)	NR	Very Good	Very Good	NR	Adequate	NR	NR	NR	NR

Note. NR, Not rated; CMHT Effectiveness Scale, Community Mental Health Effectiveness Scale; PINCOM-Q, Perception of Interprofessional Collaboration Model Questionnaire; PINCOM-Q Revised, Revised version of the Perception of Interprofessional Collaboration Model Questionnaire; PINCOM-Q (G), German translate of the Perception of Interprofessional Collaboration Model Questionnaire; HSOPSC, Hospital Survey on Patient Safety Culture; MHDAT, Mental Health Development Audit Tool; CMHTEQ, Community Mental Health Effectiveness Questionnaire; IITC-ESMH, Index of Interprofessional Team Collaboration for Expanded School Mental Health; T-TPQ, TeamSTEPPS Teamwork Perceptions Questionnaire; T-TAQ, TeamSTEPPS Teamwork Attitudes Questionnaire; CPAT, Collaborative Practice Assessment Tool; SPSDM, Shared Problem-Solving and Decision-Making Scale; TACT, Teamwork in Assertive Community Treatment Scale

Table 1-8

Quality appraisal and quality of evidence of each psychometric property per measure

	Content Validity		Structural Validity		Internal Consistency		Cross-cultural Validity		Measurement Invariance	
	Rating	**Quality of Evidence**	**Rating**	**Quality of Evidence**	**Rating**	**Quality of Evidence**	**Rating**	**Quality of Evidence**	**Rating**	**Quality of Evidence**
CMHT Effectiveness Scale	±	Low	+	High	+	High	NE	NE	NE	NE
PINCOM-Q	±	Very Low	?	Very Low	-	High	NE	NE	NE	NE
PINCOM-Q (revised)	+	Very Low	NE	NE	+	High	NE	NE	NE	NE
PINCOM-Q (G)	+	Very Low	+	High	-	High	NE	NE	NE	NE
HSOPSC	+	Very Low	NE	NE	?	High	NE	NE	NE	NE
MHDAT	±	Very Low	?	Very Low	?	High	NE	NE	NE	NE
CMHTEQ	±	Very Low	-	High	+	High	NE	NE	NE	NE

IITC-ESMH	+	Moderate	?	Moderate	+	High	NE	NE	NE	NE
T-TPQ	±	Very Low	?	Very Low	+	High	NE	NE	NE	NE
T-TAQ	±	Very Low	?	Very Low	+	High	NE	NE	NE	NE
CPAT	±	Low	?	Moderate	-	High	?	Low	?	Low
SPSDM	+	Low	+	High	+	High	NE	NE	+	Very Low
TACT	+	Low	+	High	+	High	NE	NE	NE	NE

Note. +, sufficient; -, insufficient; ?, indeterminate; NE, not evaluated in any study; CMHT Effectiveness Scale, Community Mental Health Effectiveness Scale; PINCOM-Q, Perception of Interprofessional Collaboration Model Questionnaire; PINCOM-Q Revised, Revised version of the Perception of Interprofessional Collaboration Model Questionnaire; PINCOM-Q (G), German translate of the Perception of Interprofessional Collaboration Model Questionnaire; HSOPSC, Hospital Survey on Patient Safety Culture; MHDAT, Mental Health Development Audit Tool; CMHTEQ, Community Mental Health Effectiveness Questionnaire; IITC-ESMH, Index of Interprofessional Team Collaboration for Expanded School Mental Health; T-TPQ, TeamSTEPPS Teamwork Perceptions Questionnaire; T-TAQ, TeamSTEPPS Teamwork Attitudes Questionnaire; CPAT, Collaborative Practice Assessment Tool; SPSDM, Shared Problem-Solving and Decision-Making Scale; TACT, Teamwork in Assertive Community Treatment Scale

	Reliability		Measurement Error		Criterion Validity		Construct Validity		Responsiveness	
	Rating	**Quality of Evidence**	**Rating**	**Quality of Evidence**	**Rating**	**Quality of Evidence**	**Rating**	**Quality of Evidence**	**Rating**	**Quality of Evidence**
CMHT Effectiveness Scale	-	Moderate	NE	NE	NE	NE	NE	NE	NE	NE
PINCOM-Q	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE
PINCOM-Q (revised)	NE	NE	NE	NE	NE	NE	+	Low	NE	NE
PINCOM-Q (G)	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE
HSOPSC	NE	NE	NE	NE	NE	NE	+	Low	NE	NE
MHDAT	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE
CMHTEQ	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE
IITC-ESMH	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE

T-TPQ	NE	NE	NE	NE	NE	NE	-	Low	NE	NE
T-TAQ	NE	NE	NE	NE	NE	NE	+	Low	NE	NE
CPAT	+	High	?	High	NE	NE	+	Low	NE	NE
SPSDM	NE	NE	NE	NE	NE	NE	-	Very Low	+	High
TACT	-	Moderate	NE	NE	NE	NE	NE	NE	NE	NE

Note. +, sufficient; -, insufficient; ?, indeterminate; NE, not evaluated in any study; CMHT Effectiveness Scale, Community Mental Health Effectiveness Scale; PINCOM-Q, Perception of Interprofessional Collaboration Model Questionnaire; PINCOM-Q Revised, Revised version of the Perception of Interprofessional Collaboration Model Questionnaire; PINCOM-Q (G), German translate of the Perception of Interprofessional Collaboration Model Questionnaire; HSOPSC, Hospital Survey on Patient Safety Culture; MHDAT, Mental Health Development Audit Tool; CMHTEQ, Community Mental Health Effectiveness Questionnaire; IITC-ESMH, Index of Interprofessional Team Collaboration for Expanded School Mental Health; T-TPQ, TeamSTEPPS Teamwork Perceptions Questionnaire; T-TAQ, TeamSTEPPS Teamwork Attitudes Questionnaire; CPAT, Collaborative Practice Assessment Tool; SPSDM, Shared Problem-Solving and Decision-Making Scale; TACT, Teamwork in Assertive Community Treatment Scale

Appendix

Appendix 1-1

Information Sources and Search Strategy

The search identified articles that were published up until November 2022, when each database was last searched, there was no limit placed on how early articles were published. It was decided not to limit the search to only more recent research, as a scoping search revealed a paucity of research in this area. The search terms were developed from previous relevant reviews pertaining to the measurement of teamwork in healthcare (33,40) and with support from the Faculty of Health and Medicine librarian at Lancaster University. The thesaurus function was utilised within the databases to in order to find synonyms for key concepts and database specific terms for similar concepts. Terms within the search strategy were 'exploded' when possible, which ensured that both broader and narrower terms were included within the search. The first block of the search related to teamwork and MH staff, the second to MH settings, and the third to outcome measures and psychometric properties. In addition to the database searches, the references lists of included articles and previous relevant reviews (33,40) were screened.

Appendix 1-2

Data Items and Study Risk of Bias Assessment

The COSMIN Risk of Bias Checklist, which is a standardised tool for assessing the methodological quality of studies in a systematic review of PROMs (41) was utilised in this review. The checklist outlines standards pertaining to design requirements and ideal statistical methods for studies assessing the psychometric properties of measurement instruments. The checklist also provides criteria that enable reviewers to evaluate whether the PROMs described within the studies in a review offer 'good measurement properties' that is, the criteria allow researchers to assess the quality of the PROMs (41). The checklist is comprised of ten categories, one of which is PROM development, with the other nine categories focusing on appraising measurement properties of a PROM. These nine categories evaluate measurement properties across three domains, reliability, validity, and responsiveness. The reliability domain consists of three properties, internal consistency, reliability, and measurement error; both reliability and measurement error can be evaluated using test-retest, inter-rater, and intra-rater methods. The validity domain comprises of content validity (including face validity), criterion validity, and construct validity; the last of which includes structural validity, hypothesis testing, and cross-cultural validity. The final domain on responsiveness consists of only one measurement property, also named responsiveness (41).

In the checklist, each psychometric property is assessed with a list of between three and thirty-one items. For each study included in the review, only the items that relate to the psychometric properties reported in that study are completed. When completing the checklist, each item is rated using a four-point scale: 'very good', 'adequate', 'doubtful', or 'inadequate'. A total quality rating for each psychometric property is then calculated using a 'worst-score counts' method, meaning that the lowest rating of any item evaluating a particular measurement property becomes that property's overall quality rating (41).

Appendix 1-3

Study Characteristics

The studies were conducted in various countries, with the most common being the USA (*n*=4, 25%), followed by Norway (*n*=3, 19%), England (*n*=2, 13%), Canada (*n*=2, 13%), Germany (*n*=1, 6%), Finland (*n*=1, 6%), Ireland (*n*=1, 6%), Japan (*n*=1, 6%), and Malaysia (*n*=1, 6%). The CPAT was the only PROM that was tested in two different countries, with participants from the USA and Japan (54). Sample size ranged from seven (for a pilot study; 53) to 1500 (24), the mean sample size across studies was 409. A range of MH professionals were represented in the studies including psychiatrists, psychologists, MH nurses, support workers, therapists, and counsellors. Professionals who are not specifically MH staff but who worked within MH teams and/or in MH settings in the included studies were also represented, such as teachers, social workers, child welfare workers, and medical doctors. Schools (23%) and primary care (19%) were the settings most recruited from. The majority of PROMs were administered to individuals from various types of community team (58%), with only the SPSDM (28), CPAT (54), and HSOPSC (59) utilising samples from inpatient MH hospitals. Three studies utilised a comparator instrument as part of their psychometric evaluation, the comparator instruments were different in each study and assessed various concepts such as, team satisfaction, teamwork, collaboration, and shared decision-making (28,47,54).

Appendix 1-4

Instrument Characteristics

All the PROMs included in this review were singular scales comprising of multiple subscales, ranging from two subscales (SPSDM) to ten subscales (PINCOM-Q; 50). Several of the PROMs included in this study were not evaluated in their full form, with only three subscales of the HSOPSC and seven subscales of the TACT being evaluated. This was because the subscales of encounter preparedness and consumer-centred care from the TACT did not contain any items that the reviewer considered relevant to measuring teamwork. The HSOPSC is a measure of patient safety culture in hospitals and so only three subscales of twelve were considered relevant and thus included in this review (teamwork within units, teamwork between units, and communication openness). The instruments ranged from eleven (for the three included subscales of the HSOPSC) to forty-eight items (for all versions of the PINCOM- Q). The response items for all instruments were in the form of Likert scales, which ranged between four and seven-point responses. The responses measured level of agreement or frequency of the given items, with options such as 'strongly disagree', 'always', or 'often happens'. None of the studies were explicit about the referent time frame for each PROM however, it could be assumed that as the PROMs are all measuring some aspect of an individual's current experience of teamwork, that the referent time frame would be 'at this point in time'.

Appendix 1-5

BMC Health Services Research Submission Guidelines

Aims and scope

BMC Health Services Research is an open access, peer-reviewed journal that considers articles on all aspects of health services research. The journal has a special focus on digital health, governance, health policy, health system quality and safety, healthcare delivery and access to healthcare, healthcare financing and economics, implementing reform, and the health workforce.

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    - or for non-clinical or non-research studies a description of what the article reports
- list the full names and institutional addresses for all authors
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The Abstract should not exceed 350 words. Please minimize the use of abbreviations and do not cite references in the abstract. Reports of randomized controlled trials should follow the CONSORT extension for abstracts. The abstract must include the following separate sections:

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Three to ten keywords representing the main content of the article.

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This should state clearly the main conclusions and provide an explanation of the importance and relevance of the study reported.

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Acknowledgements

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Wyllie AH, Kerr JFR, Currie AR. Cell death: the significance of apoptosis. In: Bourne GH, Danielli JF, Jeon KW, editors. International review of cytology. London: Academic; 1980. p. 251-306.

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Saito Y, Hyuga H. Rate equation approaches to amplification of enantiomeric excess and chiral symmetry breaking. Top Curr Chem. 2007. doi:10.1007/128_2006_108.

Complete book, authored

Blenkinsopp A, Paxton P. Symptoms in the pharmacy: a guide to the management of common illness. 3rd ed. Oxford: Blackwell Science; 1998.

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Doe J. Title of subordinate document. In: The dictionary of substances and their effects. Royal Society of Chemistry. 1999. http://www.rsc.org/dose/title of subordinate document. Accessed 15 Jan 1999.

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Doe, J: Title of preprint. http://www.uni-heidelberg.de/mydata.html (1999). Accessed 25 Dec 1999.

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Doe, J: Trivial HTTP, RFC2169. ftp://ftp.isi.edu/in-notes/rfc2169.txt (1999). Accessed 12 Nov 1999.

Organization site
ISSN International Centre: The ISSN register. http://www.issn.org (2006). Accessed 20 Feb 2007.

Dataset with persistent identifier
Zheng L-Y, Guo X-S, He B, Sun L-J, Peng Y, Dong S-S, et al. Genome data from sweet and grain sorghum (Sorghum bicolor). GigaScience Database. 2011. http://dx.doi.org/10.5524/100012.

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Section Two: Empirical Paper

Are Compassion Satisfaction, Compassion Fatigue, and Psychological Safety Predictors of Intention to Leave in Inpatient Mental Health Staff: A Cross-Sectional Study

Word count (excluding references, tables, and appendices): 7994 words

Abstract: 315 words

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August 2023

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Declarations of interest: none

[1] See Appendix 1-5 for journal submission guidelines

Abstract

Background:

Inpatient mental health wards are stressful work environments, and demand for these services has increased in recent years. Mental health inpatient services are experiencing growing pressures, with staff shortages contributing to poorer patient care, reduced staff wellbeing, and increased risk to the safety of patients and staff. Despite this increased need, there remains difficulties with recruitment and retention, with 17% of the mental health workforce leaving the NHS during 2021-2022. A key metric to explore the issues with retention is Intention to Leave. The current study explored whether Compassion Satisfaction, Compassion Fatigue, and Psychological Safety predicted Intention to Leave. This is the first study to analyse the association between these factors and explore their impact on Intention to Leave in NHS inpatient mental health staff.

Methods:

A cross-sectional, within-subjects design was used, with data being collected by online survey. One-hundred-and-seventy-nine participants were recruited via social media or email in several NHS Trusts. Compassion Satisfaction and Compassion Fatigue were measured using the Professional Quality of Life Measure (ProQOL-5), Psychological Safety was measured using the Team Psychological Safety Scale, and Intention to Leave was assessed by asking participants if they intended to leave their job in the next year due to dissatisfaction. Pearson correlations and MANOVAs were utilised to explore relationships between predictor variables, and binary logistic regression was used to analyse Intention to Leave.

Results:

Results suggest that Compassion Satisfaction, Compassion Fatigue, and Psychological Safety are all significant predictors of Intention to Leave. Twenty-eight percent of the study sample reported an

intention to leave their job in the next year. The majority of participants reported moderate levels of Compassion Satisfaction and Compassion Fatigue.

Conclusion:

This study suggests that interventions focusing on improving Compassion Satisfaction, Compassion Fatigue, and Psychological Safety may reduce turnover intention in inpatient mental health staff. It also illuminates a new avenue of research regarding Psychological Safety in inpatient mental health teams.

Keywords: Intention to leave, Healthcare staff, Inpatient mental health, Compassion satisfaction, Compassion fatigue, Psychological safety, Staff wellbeing

Introduction

Inpatient mental health (MH) services are for individuals who cannot be supported at home or in the community, and who require hospital admission due to severe MH difficulties (1). Inpatient MH wards can be extremely stressful work environments. In England, there has been a dramatic reduction in inpatient beds over the past 30 years, due to deinstitutionalisation, which shifted care from hospitals and institutions to community-based settings (2). This has led to an increase in the threshold for admission to inpatient MH wards, resulting in more patients being detained under the Mental Health Act and shorter lengths of stay (3,4). Violence and aggression are also relatively common in MH settings, with a high proportion of assaults reported against NHS staff taking place in MH settings and occurring most frequently in inpatient MH units (5,6). Recent qualitative studies have found that both patients and staff have experienced violence and felt unsafe on inpatient MH wards (7,8). Experiencing traumatic incidents and being exposed to violence in the workplace is associated with the development of Compassion Fatigue and lower levels of Compassion Satisfaction in MH staff (9,10). This is a problem, as compassion has been emphasised as a concept that is central to modern healthcare in the UK, with the NHS long-term plan stating that developing compassionate cultures and supporting compassionate leadership are vital for a successful NHS workforce (11).

Inpatient Mental Health Services

Inpatient MH teams are multidisciplinary and can contain a multitude of different professionals, such as psychiatrists, nurses, psychologists and psychotherapists, occupational therapists, pharmacists, social workers, healthcare assistants and support workers, assistant psychologists, and peer support workers (12,13). The staffing mix in inpatient MH settings varies, and currently there are no national standards for staffing levels on NHS inpatient MH wards (14). However, across the NHS, MH nurses and nursing support staff make up the majority of the NHS inpatient MH workforce (15).

In 2022, the Care Quality Commission (CQC; 16) published a report focusing on the pressure that many MH inpatient services are experiencing. The report highlighted workforce issues and staff shortages as major contributors to poorer patient care and increased risk to the safety of patients and staff. Demand for inpatient MH services continued to rise during 2021/22, with this trend of increasing demand also seen in previous years. The COVID-19 pandemic appears to have exacerbated this need, along with a lack of appropriate alternative services in the community (16). Despite this increased need, there remains difficulties with recruitment and retention in MH settings. The Department of Health and Social Care (17) reported that 17,000 (17%) MH staff left the NHS during 2021-2022. In 2018, the King's Fund (18) reviewed numerous NHS MH Trusts, reporting high vacancy rates, issues with local availability of healthcare support workers, and difficulties recruiting to specialist psychiatry positions.

Intention to Leave

Staff recruitment and retention is a concern across the NHS more broadly, with current staffing issues being described as a 'crisis' (19). Recent statistics report a vacancy rate of almost 11% for nurses and almost 6% for doctors, in England (20). In 2022, NHS services reported a shortage of almost 94,000 full time staff (21). Staff shortages have an impact on patient care; in January 2023, NHS England reported a record 7.2 million people waiting for hospital treatment (22). A recent report into staff retention across the NHS post COVID-19, states that one in three staff are planning to leave the NHS for either alternative employment or to retire by 2027 (23). This report also highlights staff's concerns regarding staff shortages and the negative impact this has on services and staff wellbeing.

The NHS Five Year Forward View (24) put forth the ambition to achieve parity of esteem between physical and mental health by 2020, highlighting the need for increased funding and staffing to achieve this. In 2019, the NHS Long Term Plan continued to emphasise the need for improvements in MH care, with a renewed commitment to increase investment in MH services

(11). In inpatient MH care specifically, the NHS Mental Health Implementation Plan (25) promised an increased investment in therapeutic interventions and activities to improve patient outcomes. To achieve this, the plan proposed an increase in psychologists, occupational therapists, and other therapists in inpatient settings, with a recommendation of 760 extra positions by 2024. Despite this plan, the current vacancy rates in acute inpatient MH services are reported to be around 20% (26).

With the concerns regarding staff shortages, Intention to Leave (ITL) is a key metric for investigating problems with retention in services. Stakeholders have raised concerns that the increased workload and pressure in MH services leads to burnout in staff, which contributes to an increased rate of staff turnover, leading to more staff shortages, which then results in more pressure on staff and services (26). Several studies conducted in countries outside of the UK have reported turnover intentions of 20-29% in inpatient MH staff (27,28).

Recent reviews have focused on factors affecting retention and ITL in MH staff. Long et al.'s (29) review of UK adult MH services found that perceived quality of patient care, safe workload and staffing levels, and positive team relationships were all predictors. Additionally, a review of MH nurses across multiple countries reported that offering continuous care to individuals with MH difficulties can lead to burnout, moral distress, and emotional exhaustion, which negatively affects MH nurses' wellbeing and subsequently, retention (30).

Staff Wellbeing

There are concerns about staff wellbeing due to: staff shortages, workplace stress, and increased pressure on MH services. High levels of burnout (31), stress (32), and poorer physical health when compared to population norms (33) have been reported in UK inpatient MH staff. There is a stark lack of more recent evidence into staff wellbeing in inpatient MH staff in the UK and internationally. Compassion Fatigue (CF) is another metric of staff wellbeing that has been explored in inpatient MH staff internationally but to the author's knowledge there has only been

one study investigating this in a UK inpatient psychiatric setting (34). Moderate to high levels of CF have been reported in recent studies in acute psychiatric inpatient settings internationally (35,36). Foster's (34) study found low to moderate levels of burnout and CF however, this may not be indicative of all UK inpatient MH settings, as this study investigated professional quality of life for MH nursing staff working in one adolescent Psychiatric Intensive Care Unit.

Staff wellbeing is also impacted by staffing shortages. In the most recent NHS England staff survey, only 26% of the staff who responded reported that there were enough staff at their organisation for them to do their job properly (6). A high percentage of staff (45%) reported feeling unwell as a result of workplace stress, and 34% reported feeling burnt out because of their work (6).

Compassion Satisfaction and Compassion Fatigue

Two concepts that have been explored in the literature relating to MH staff wellbeing and patient care are Compassion Satisfaction (CS) and CF. Compassion has been defined as "a basic kindness, with a deep awareness of the suffering of oneself and of other living things, coupled with the wish and effort to relieve it" (37, p.13). CS describes the positive aspects of helping others, the pleasure a person feels from doing their job, and being able to do it well (38). Whereas CF describes a type of stress that can occur as a result of helping individuals who have experienced trauma, rather than exposure to the trauma itself (39). In the literature, there are several other concepts that are often closely linked to and sometimes used interchangeably with CF. These are: Burnout (40), Secondary Traumatic Stress (STS), and Vicarious Trauma(tisation) (41).

Burnout differs from CF, STS, and vicarious trauma, in that it doesn't require exposure to people who have experienced trauma and develops as a result of chronic exposure to any kind of job stress (42). The symptoms of burnout typically have a gradual onset (43) and are thought to include emotional and physical exhaustion and depersonalization, which can lead to lower levels

of work effectiveness (44). In contrast, CF may occur suddenly, and some models consider CF a possible antecedent of burnout (38). STS usually occurs following a specific event in which a person is exposed to the traumatic experiences of a patient or client (41). The stress occurs due to supporting a traumatised person and can manifest as symptoms of posttraumatic stress disorder (39). In Stamm's (39) model, CF is conceptualized as a multi-dimensional construct comprising both STS and burnout. However, there are various conceptualisations of CF and STS in the literature, with a review by Newell et al. (45) presenting CF as a separate construct from STS, suggesting that STS may be a consequence of CF, rather than a dimension of it. Vicarious trauma is based in social-constructivist theory (46), in which it is believed that a person constructs their own reality, and hence a person's understanding of reality and their cognitive schemas can be affected by exposure to other's traumatic experiences (47). Vicarious trauma is usually described as a more persistent change in a person's beliefs about themselves, others, and the world, which differentiates it from the more acute onset STS and CF (41).

In this study it was decided not to explore burnout as there exists a wealth of research into burnout in healthcare staff, and as a concept it is not specific to workers who have been exposed to traumatic experiences. CF was chosen over other measures of empathy-based stress as the researchers were interested in capturing both the positive and negative aspects of working in inpatient MH settings, and CF is considered to be both related to and affected by CS (48). Slocum-Gori et al.'s (49) study of palliative care staff found a significant negative correlation between CF and CS, and multiple studies have reported that higher levels of CS are associated with lower levels of CF (50). These findings suggest that experiencing increased CS may negate the negative effects of CF, this is particularly interesting when aiming to understand why some staff in this setting do not intend to leave, despite the job being stressful and entailing frequent exposures to trauma.

The Francis report (51) highlighted lack of compassion as one of the major factors in

catastrophic failures of care in an UK NHS hospital Trust. As CF can make it more difficult for professionals to hold compassion and empathy in their work (52), it could be surmised that CF can lead to poor service user care. The effects of CF are thought to reduce clinicians' ability to effectively help the clients they support (53). In MH staff specifically, CF has been found to have a negative effect on wellbeing (50). There is a lack of literature regarding CS and CF in inpatient MH settings, but Mangoulia et al.'s (54) study of assistant and registered MH nurses working in inpatient settings in Italy found that a large proportion of staff surveyed (44.8%) were at high risk of developing CF, with only 8.1% of the nurses reporting high levels of CS. A recent qualitative study found that barriers to compassion in inpatient MH staff in the UK were: a lack of time and resources, feeling under threat, and having limited capacity for compassion (55).

Many factors affecting CF and CS have been highlighted in the literature, including personal, such as experiencing workplace trauma (10), internal, such as clinicians' personality traits (56), and work-related, such as workplace belonging (56). Feeling supported by managers and colleagues (9), workplace belonging (56), and feeling that your team are working well together (54) are all workplace factors that have been associated with higher levels of CS. These findings suggest that CS and CF may be affected by workplace team dynamics and relationships. One such measure of team dynamics is the concept of Psychological Safety.

Psychological Safety

The definition of Psychological Safety (PS) is "a shared belief that the team is safe for interpersonal risk taking" (57, p.354). This shared belief translates to members of the team feeling that they have the confidence to speak up and share ideas and opinions, without risking rejection or embarrassment, and arises from a team that has mutual trust and support (58,59). It is also associated with workplace creativity, team learning, and team performance (59). These factors are especially important in high-stakes work settings, such as healthcare. Despite this, PS is often lacking in healthcare teams. Studies have found that healthcare professionals can be

reluctant to speak up when they have concerns due to fear of judgement, not being listened to, or not wanting to cause issues within a team (60).

As previous studies have found that feeling a sense of belonging in a team and support from colleagues can both influence CS and CF, it could be hypothesised that the concept of PS may be associated with CF and CS. Additionally, a recent review highlighted that feeling respected and valued by one's colleagues (an aspect of PS) is directly associated with ITL (29). There is currently little research into PS specifically in MH teams and as such is an unexplored avenue of interest.

Aims

ITL is a key factor in exploring staff retention and staff turnover in the NHS. Staff wellbeing is both affected by and contributes to staffing shortages. CF and CS are two metrics of staff wellbeing that have been widely explored in various healthcare settings over the past two decades. However, there remains a scarcity of research into CF and CS specifically in MH inpatient settings, despite this group of staff being in frequent contact with service users who have experienced trauma. Furthermore, there has been no research to date exploring PS' effect on CS, CF, and ITL. This study aimed to explore whether PS is associated with CF and CS, and whether PS, CF, and CS are predictors of ITL in NHS inpatient MH staff.

Hypotheses

Hypothesis one

Higher levels of CF will predict ITL, with CS moderating this relationship.

Hypothesis two

Lower levels of PS will predict ITL.

Hypothesis three

Higher levels of PS will be associated with higher levels of CS and lower levels of CF.

Method

Design

This was a cross-sectional study, with a within-subjects design, which investigated staff's current experiences of PS, CS, and CF. The outcome measures were ITL, CF, CS, and PS. Demographic data were also collected from all participants including age, gender, job role, years in role, and years in profession. Data were collected from an online survey via the web-based platform, Qualtrics.

Participants

Inclusion criteria were that participants had to be working in an NHS inpatient MH setting at the time the study was conducted and must have been working in a such a setting for at least three months. This was to ensure that bank or agency members of staff were not excluded from the study, but that all participants had sufficient current experience of working in an inpatient setting.

Exclusion criteria were anyone who does not regularly work in an NHS inpatient MH setting, where regularly was defined as at least once per week. For the purpose of this study an NHS inpatient MH setting included acute and rehabilitation inpatient wards, Psychiatric Intensive Care Units, Learning Disability inpatient wards, Perinatal Mental Health wards, Forensic Secure services, and Child and Adolescent Mental Health inpatient units. This ensured that responses could be collected from staff across a breadth of inpatient settings, as the focus of this study was on staff working in the inpatient environment itself, rather than with a specific client group.

Participants were selected using opportunity sampling via social media. It was not feasible to utilise stratified sampling in order to gain a representative sample of each staff discipline. This was because the staffing mix in inpatient MH settings varies, and there are currently no fixed staffing levels for UK MH inpatient wards (14).

The number of participants required for this study was 179. This was based on a power

calculation for a two-tailed logistic regression, conducted using the statistical software G*Power (61). Statistical power of 0.8 and a probability level of p = 0.05 were chosen (62). H0 was set at 0.2, as previous surveys of NHS staff have reported that around 20% are likely to look for another job in a new organization in the next year (6). H1 reflects the percentage of staff that intend to leave when scores on the predictor variables are one standard deviation from the mean. There is little research available to base this on however, as a previous study on ITL in inpatient MH staff in the USA found that 29% of participants were likely to leave their job in the next year, and 36% were actively looking for another job, a value of 0.3 was chosen for H1 (28).

Ethics

Ethical approval for this study was obtained via the Lancaster University Faculty of Health and Medicine Research Ethics Committee (reference FHM-2022-0998-IRAS-1) and via the NHS Health Research Authority (IRAS 306540). Further information regarding ethical approval and data protection is described in section four of the thesis.

Procedure

Recruitment

Initially, participants were recruited online via Twitter, Facebook, Reddit, and Instagram. Following this, participants were contacted directly through their work emails in several NHS Trusts in which the researcher and field supervisors worked. Several participants who heard about the study online also shared the study link via work email within their Trusts. The required number of participants was reached in 66 days.

Taking part in the study

Participants accessed the study via a link, which took them to an online Qualtrics questionnaire. Participants were first required to read through a Participant Information Sheet (PIS; see Appendix 4-4 in Section Four), outlining the purpose of the study and expectations of taking part. They were then prompted to read the Consent Form (see Appendix 4-5 in Section

Four) and confirm that they had read the PIS, they consented to take part, and they met the eligibility requirements.

The participants were then required to complete a Demographic Questionnaire (see Appendix 4-6 in Section Four), then the CS and CF measure, then the PS measure, and finally, the questions relating to ITL. The questionnaire took participants between three and forty-eight minutes to complete, with an average completion time of seven minutes. Following their participation in the study, participants were given a Debrief Sheet to read (see Appendix 4-8 in Section Four).

Materials

Predictor Variable Measures

Compassion Satisfaction and Compassion Fatigue. The Professional Quality of Life Measure [ProQOL-5] (38) was used to assess the concepts of CS and CF. This is the most frequently used measure for compassion in research into the helping professions and multiple previous studies of CF and CS in MH professionals have utilised the ProQOL (40,50), including in UK populations (9,63). The measure is reported to have good construct validity (38) and high internal consistency reliability, with a reported Cronbach's alpha of α = .88 for the CS scale and α = .81 for the CF scale (38). In the present study the Cronbach's alpha of the CS and CF scales was α = .91 and α = .82 respectively.

More recently, Heritage et al. (64) conducted a study evaluating the construct validity of the ProQOL-5. Utilising Rasch analysis they examined the measurement properties of the three scales of the ProQOL. From these findings, they adapted the original ProQOL-5 scale and suggested an alternative scoring method. This thesis utilised both the original scoring of the ProQOL- 5 (38) and the updated ProQOL-21 scoring (64) when reporting the results of the study. This was not included in the proposal and is an alternation to the original plan of analysis. Further information regarding this decision is outlined in the Critical Appraisal (Section Three).

In Heritage et al.'s (64) study the Cronbach's alpha for the CS scale was α = .90 and for the new 11-item CF scale this was also α = .90. Utilising the CF and CS scoring from the ProQOL-21 (64), the Cronbach's alpha for the CF and CS scales in the present study was α = .88 and α = .90 respectively.

Psychological Safety. PS was measured using the Team Psychological Safety Scale (57). This measure has been extensively evaluated and has strong content, construct, and criterion validity (85). It was also found to have high internal consistency, with the scale being reliable across diverse population samples (57,65) and has been utilised across a range of organisations, including healthcare settings (66). The Cronbach's alpha reported in the original scale development and validation study was α = .82. The Cronbach's alpha in the present study was α = .86.

Outcome Variable

Intention to leave. ITL has been measured in various ways. Flinkman et al.'s (67) review of nurses' ITL the profession found 24 different measures/scales/instruments had been used, suggesting poor measurement consistency. In this study, ITL was measured by asking two questions. The first asked if participants intended to leave their current job within the next year due to job dissatisfaction, with this requiring a yes or no response. If participants answered yes, they were then asked to differentiate between leaving their current job, leaving the NHS, or leaving their profession entirely. This way of measuring ITL has been taken from Heinen et al.'s (68) study of 23,159 nurses' ITL their profession in ten European countries, including the UK.

Statistical Analyses

IBM SPSS version 26 was used to complete the statistical analyses. Descriptive statistics were computed to establish the characteristics and distribution of the data. Histograms and Q-Q plots were used to visually assess normality in the data. Following this, values for skew and

kurtosis were checked. All values for the outcome variables were less than ± 1.0, thus the data were considered to be normally distributed and parametric analyses were indicated.

Pearson correlation was used to measure the strength of the linear relationship between the continuous outcome variables (PS, CS, and CF). MANOVA tests were conducted to explore associations between the demographic data and outcome variables. Bonferroni adjusted alpha levels of .017 were used to assess statistical significance for each independent variable (alpha value of .05 divided by the number of dependent variables) (69). Prior to this, certain variables (age and years in profession) were recoded from scale to nominal data, with each category representing roughly equal numbers of participants (see Table 2-1 for these categories). The association between demographic variables and CF, CS, and PS was explored as the literature has highlighted relationships between various demographic variables and CS and CF, but this has often been contradictory or not statistically significant (70).

Binary Logistic Regression was used to assess whether CF, CS, and PS were accurate predictors of ITL. The interactions between the predictor variables were also added to the model to explore whether any of the predictor variables acted as moderators between CF, CS, or PS and ITL. Predictor variables were entered into the regression model in six blocks as follows:

- Step 1: CF scores.
- Step 2: CS scores.
- Step 3: PS scores.
- Step 4: CF x CS interaction
- Step 5: CF x PS interaction
- Step 6: CS x PS interaction

A further regression model was completed in order to adjust for demographic variables and assess whether any of these variables when added to the model as covariates, affected the associations between the predictor variables and the outcome of ITL. The demographic variables

of gender, age, job role, and years in profession were added as a block at step 1 of this model. This was a departure from the original analysis described in the protocol but was necessary to produce r^2 values that were adjusted for demographics.

Results

Of the 250 people who opened the survey: one did not give consent, two were screened out as they did not work in an inpatient setting, 43 did not start the questionnaires, 20 only completed the demographic questionnaire, and a further five did not complete all measures. These participants were removed prior to data analysis (*n* = 71) leaving 179 participants.

The majority of the participants identified as female (79.0%), and the median age was 33 years with the age range being between 19-65 years. White-British was the most frequently reported ethnicity (83.3%). Nursing and psychology staff represented the majority of the participants' professional areas, 46.4% and 42.5% respectively. The mean number of years that participants had worked in their profession was 8.4 years (range 1-40 years), and the mean number of years participants had worked in their current job role was 3.7 years (range 1-28 years). Further demographic characteristics of the participants can be found in Table 2-1.

[Table 2-1 here]

Measures of Compassion Satisfaction, Compassion Fatigue, Psychological Safety, and Intention to Leave

Cut-off scores are provided in the ProQOL manual to separate individuals into low, moderate, and high groups for CS and CF (38). The manual recommends that continuous scoring be used for statistical analysis, which this paper has adhered to however; cut-off scores have been provided as they can be helpful in contextualising the sample's scores. The majority of the participants scored in the moderate range for CS (76.5%), with similar proportions of participants falling into either the low or moderate group for CF (45.3% and 54.7% respectively). No participants met the threshold for high levels of CF. There are no cut-off scores for the Team

Psychological Safety Scale and higher scores indicate a higher level of PS (57). The lowest possible score on the PS measure was seven and the highest was 49. In this sample, three participants achieved the highest score and one participant scored the lowest possible score.

The percentage of participants who intended to leave their job was 27.9% (*n* = 50), compared to 72.1% who did not (*n* = 129). Of the participants who did intend to leave their job, most intended to leave their current job but remain in the NHS (59.2%), 22.4% intended to leave the NHS but remain in their profession, and 18.4% intended to leave their healthcare profession entirely. The means, ranges, percentages, and cut-off scores for the sample are reported in Table 2-2.

[Table 2-2 here]

Both the original ProQOL-5 scoring and the updated ProQOL-21 scoring for CS and CF were utilised when completing the statistical analyses. Throughout the results section the ProQOL-5 scoring is used however, the full results of the statistical analyses utilising the ProQOL-21 scoring method can be found in Appendix 2-1. A summary of any differences elicited from the different ways of scoring can be found at the end of the results section.

Pearson Correlation

CS was significantly and positively correlated with PS (r = .522, *N* = 179, *p* = <0.001, one-tailed). Whereas CF was found to be significantly negatively correlated with PS (r = -.298, *N* = 179, *p* = <0.001, one-tailed). CS and CF were also significantly and negatively correlated (r = -.175, *N* = 179, *p* = 0.01, one-tailed).

MANOVAs

One-way between-subjects multivariate analysis of variance (MANOVA) tests were conducted to assess whether the demographic variables of gender, job role, years in profession, and age influenced CS, CF, and PS scores. The dependent variables for all MANOVA tests were scores of CS, CF, and PS, with weak to moderate correlations found amongst these variables.

Assumptions of homogeneity of variance-covariance matrices and equality of variance were confirmed for all MANOVA test outlined below.

Gender

Prior to running the MANOVA tests, several participant's data were removed from the analysis as they represented groups that did not have an adequate sample size, non-binary (*n*=2), agender (*n*=1), and prefer not to disclose (*n*=1). This is due to the minimum requirement for sample size in MANOVA being that each cell of the design must have more cases than there are dependent variables (71).

The between-subjects factor comprised two groups, male or female. The difference between the two groups on the combined dependent variable of compassion and PS measures was non- significant, ($F(3,171) = 2.59$, $p = .055$; Wilks' Lambda = .96; partial $\eta^2 = .04$). Analysis of each individual dependent variable showed that there were no statistically significant differences between the two groups on any of the measures.

Job Role

Prior to running the MANOVA tests, several participant's data were removed from the analysis as they represented groups that did not have an adequate sample size, and which could not be included in the other professional categories, peer support worker (*n*=1), social worker (*n*=1), and operational manager (*n*=1).

The between-subjects factor comprised four groups, psychology, nursing, occupational therapy, and medical. There was a statistically significant difference between the four groups on the combined dependent variable of compassion and PS measures ($F(9,411.45) = 2.10$, $p = <0.05$; Wilks' Lambda = .9; partial $\eta^2 = .04$). Analysis of each individual dependent variable, showed that there was no statistically significant contribution of PS or CS. The four groups differed significantly on CF, ($F(3,171) = 4.13$, $p = <0.01$, partial $\eta^2 = .07$). The mean scores for CF were highest for those whose profession was nursing ($M = 25.42$), followed by occupational therapy

(*M* = 25.25), psychology (*M* = 22.63), and finally those whose profession was medical had the lowest mean CF scores (*M* = 20.25).

Years in Profession

The between-subjects factor comprised four groups, 1-5 years, 6-10 years, 11-15 years, and 16+ years. There was a statistically significant difference between the four groups on the combined dependent variable of compassion and PS measures ($F(9,421.19) = 2.51$, $p = <0.01$; Wilks' Lambda = .88; partial $\eta^2 = .04$). Analysis of each individual dependent variable showed that there was no statistically significant contribution of PS or CS. The four groups differed significantly on CF, ($F(3,175) = 4.26$, $p = <0.005$, partial $\eta^2 = .07$). The mean scores for CF were highest for those who had been in their profession for 1-5 years (*M* = 25.31), compared with 6-10 years (*M* = 24.08), and the lowest mean CF scores were observed in those who had been in their profession for 11-15 years (*M* = 21.60) and 16+ years (*M* = 21.70).

Age

The between-subjects factor comprised six age groups, 18-25, 26-30, 31-35, 36-40, 41-50, and 51+. There was a statistically significant difference between the six groups on the combined dependent variable of compassion and PS measures ($F(15,472.56) = 1.87$, $p = <0.05$; Wilks' Lambda = .85; partial $\eta^2 = .05$). Analysis of each individual dependent variable showed that there were no statistically significant differences between the six groups on any of the measures.

Logistic Regression Analysis

In the first step of the regression analysis CF significantly predicted ITL (omnibus chi-square = 13.48, df = 1, $p < .0001$). This step accounted for between 7.3% and 10.4% of the variance in ITL, with 96.1% of the staff who did not intend to leave successfully predicted. However, only 14.0% of predictions for the intent to leave group were accurate. The second step explained between 23.6% and 34.0% of the variance in ITL, meaning that the inclusion of CS accounted for up to 23.6% of the variance. CS also significantly predicted ITL (omnibus chi-square = 34.75, df = 1,

$p < .0001$). Adding CS increased the accuracy of the model at predicting the intent to leave group, with this now being 42.0%. Step 3 accounted for between 27.0% and 38.9% of the variance, thus the addition of PS accounted for up to 15.3% of the variance. PS significantly predicted ITL (omnibus chi-square = 8.00, df = 1, $p < .05$). Adding PS to the model increased the percentage of accurate predictions of ITL to 54.0%, but did slightly decrease the accuracy of prediction of the group who do not intend to leave to 93.0%. Steps 4 – 6 did not significantly predict ITL and their inclusion added little to the model in terms of predictive influence. This suggests that the interaction effects of the three predictor variables do not have a significant influence upon ITL and that none of the predictor variables act as moderators for the relationship between each predictor and ITL.

As described above, the best fit for the data was represented in Model 3 (see Figure 2-1). Overall, this model significantly predicted ITL (omnibus chi-square = 56.23, df = 3, $p <.0001$) and accurately predicts this 82.1% of the time. Table 2-3 gives coefficients and the Wald statistic and associated degrees of freedom and probability values for each of the predictor variables. This shows that CS, CF, and PS reliably predicted ITL. The values of the coefficients reveal that for every increased point in CS scores, the odds of a person intending to leave decrease by a factor of 0.87 (95% CI 0.80 and 0.94). Each increased point in CF scores is associated with an increase in the odds of intending to leave by a factor of 1.08 (95% CI 1.01-1.16). Finally, for every increased point in PS scores, the odds of a person intending to leave decrease by a factor of 0.93 (95% CI 0.88-0.98).

[Table 2-3 here]

[Figure 2-1 here]

The adjusted analysis included demographic variables as the first step in the regression (Table 2-5). None of the demographic variables were found to be significant predictors of ITL and they explained only 1-2% of the variance in the model. In addition to this, the demographic

variables did not offer any increase in predictive power and did not accurately predict any of the participants who intended to leave their job. Furthermore, their inclusion in the model did not affect the relationship between ITL and the predictor variables of CS, CF, and PS. The predictor variables of CS, CF, and PS still explained between 30-42% of the variance in the model and accurately predicted ITL 81% of the time when controlling for demographic variables. As a result of this analysis, demographic variables were removed from the model and Model 3 remained the best fit for the data.

[Table 2-5 here]

ProqQOL-21 Scoring Summary

When all of the statistical analyses were re-run using the ProQOL-21 scoring for CS and CF, the pattern of results remained the same as for the ProQOL-5 scoring. There were some slight differences noted, CF was found to be moderately negatively correlated with both PS and CS, whereas this correlation was weak in the ProQOL-5. Years in profession did not have a statistically significant effect on any of the dependent variables of CF, CS, or PS, in contrast to significant differences being found in CF scores by years in profession when utilising the ProQOL-5 scoring. The predictive power of the regression model utilising the ProQOL-21 scoring was marginally higher than the ProQOL-5 scoring, with ITL accurately predicted 83.2% of the time compared to 82.1%. See Appendix 2-1, Table 2-4, Table 2-6, and Figure 2-1 for detailed results utilising the ProQOL-21 scoring.

Discussion

The present study investigated the relationship between self-reported scores of CS, CF, and PS and ITL in NHS inpatient MH staff. In this study 27.9% of participants stated that they were intending to leave their job within the next year, with 6.1% planning to leave the NHS, and 5.0% planning to leave their healthcare profession entirely. This is in line with findings from other studies in inpatient MH staff, with between 20-29% of staff in these studies reporting an ITL (27,28). Previous studies of both community and inpatient MH staff have reported mean CS

scores of between 23.4 and 36.9 and mean CF scores of 10.2 – 22.95 (9,35,40,54,72-74). The population of this study were found to have relatively high levels of CS in comparison with previous research (mean = 36.6) but also higher levels of CF (mean = 23.9). One explanation for this could be that inpatient MH staff have been found to experience higher levels of CF when compared to their colleagues working in community settings (73), many of the previous studies included participants from both inpatient and CMHTs, whereas our study sample was taken only from inpatient MH staff.

The sample in this study appeared to broadly reflect the wider NHS workforce in terms of gender. In 2021, the NHS reported that 76.7% of their staff were women (75). However, white participants were overrepresented in the sample (91.1%) when compared to the general NHS workforce; in 2022, 74.3% of NHS staff were reported to be white (76). The median age of the sample was younger than the average for the general NHS workforce, which is 43 years (77). The proportion of staff working in the NHS who are under 25 years has been reported to be just 6.0%; however, this was higher in the current study sample (19.0%).

This study hypothesised higher levels of CF would predict ITL, with CS moderating this relationship. This hypothesis was partially supported as the results of the logistic regression analysis suggest that higher levels of CF predict ITL. These findings have also been reported in a recent study into the factors affecting ITL in physical health nurses (78). However, adding interaction effects into the regression model did not improve predictive power, and they were found not to be significant predictors. The relationship between CF and ITL was therefore not moderated by CS in this study. Nevertheless, CS was found to be a significant predictor, with higher levels of CS associated with a lower likelihood of ITL. Similar findings have been reported in the literature with CS being found to both directly (79) and indirectly (80) effect ITL. In Model 3.1 (Figure 2-1), CS was also found to have most explanatory power (explaining up to 23.6% of variance).

The second hypothesis, that lower levels of PS would predict ITL was supported by the data, with PS being found to have the most explanatory power in Model 3.2 (accounting for up to 24% of the variance). Hebles et al.'s (81) study of healthcare staff found that PS mediated the relationship between stress and ITL, with higher levels of PS having a negative effect on ITL, as found in our study. Overall, the three predictor variables of CF, CS, and PS accounted for up to 38.8% of model variance and accurately predicted ITL 82.1-83.2% of the time (depending on which method of ProQOL scoring was utilised); Models 3.1 and 3.2 offered the best fit for the data (Figure 2-1).

The results endorsed hypothesis three, that higher levels of PS would be associated with higher levels of CS and lower levels of CF. To the author's knowledge, there has not been any study to date exploring PS' relationship with CF and CS in MH teams. However, research has suggested that CS and CF are influenced by various factors that map onto the concept of PS, such as feeling part of a team and having respect for one's team members (74). The findings of this study are in line with previous research that has reported an inverse relationship between CF and factors relating to the construct PS (10), and a positive relationship between CS and such factors (9).

The literature has explored various demographic, personal, and work-related factors associated with CS and CF in MH staff, but these findings have produced conflicting evidence. In this study, only job role and years in profession were found to be significantly associated with CF, and no demographic variables were found to be significantly related to CS. The data from this study suggests that CF scores differ by job role, with nursing staff experiencing the highest levels of CF in the sample. A previous study found that nursing assistants experienced higher levels of CF than qualified nurses (54), both qualified nurses and nursing support workers were pooled under the profession of 'nursing' in this study and so this could explain why nursing was found to be associated with the highest CF scores. In our study, medical doctors reported the lowest levels

of CF, this is in contrast with a study that found psychiatrists were found to have higher CF scores (40). This may be due to the relatively small sample size of doctors included in our study (*n* = 8) or that medical doctors other than psychiatrists were included in our sample. Years in profession was also highlighted as being significantly associated with CF in this study, with CF scores decreasing the longer participants worked in their profession. This is in contract with previous studies that have found that length of time in profession was positively correlated with CF scores (40,54). This discrepancy may be because length of time in profession could be a proxy for other variables that may also have an effect on CF scores, such as education level, age, or autonomy at work.

CS, CF, and PS all appear to be key factors in understanding and predicting ITL in NHS inpatient MH staff. The majority of participants in this sample reported both moderate levels of CF and CS, suggesting that they derive pleasure from their work but that this work is also inherently stressful. This is the first study to explore PS' impact on ITL in MH staff and the data suggests that increasing PS within a team may reduce ITL.

Strengths and Limitations

The present study was cross-sectional and utilised an online survey that relied on self-report questionnaires. This may be problematic for several reasons, firstly the recall periods were 'at this point in time' and 'over the past 30 days', meaning that the results may have been sensitive to recent changes or shifts in work dynamics that may not have been representative of participants usual work experiences. Secondly, self-report bias is a known issue in survey research, with social desirability potentially biasing responses even when surveys are anonymous (82,83). Additionally, it was difficult to reach certain professionals. This may have been due to the method of recruitment or because inpatient MH services are frequently understaffed, with staff possibly not having the time to complete a survey on top of their usual workload. This means that certain opinions are not included and results are potentially biased by those who had the time or

inclination to complete the survey. Despite these concerns, the use of a relatively brief online survey ensured that a large number of participants were reached and were able to take part, even considering staffing and workload pressures.

The study found that CS, CF, and PS were all correlated, but as correlation does not infer causation, it is difficult to know the direction of these relationships and to assess which factor would be the most useful target for interventions. However, a strength is that as this is the first study to explore PS in inpatient MH teams, it has provided a new avenue for potential intervention and future research aimed at improving staff wellbeing and reducing staff's ITL.

Finally, another strength of this study is that it adds to the evidence base regarding staff wellbeing and ITL specifically in inpatient MH teams. This population is frequently under-researched with the majority of research focused on CMHTs or physical healthcare teams.

Clinical and Research Implications

There is a crisis in staffing in the NHS and services need to retain staff in order to provide high quality patient care. By understanding the factors that predict staff's ITL their job, interventions can be targeted at improving these factors in order to retain staff. Interventions exist to increase PS in healthcare teams, most of which are focused on educating staff about PS using video presentations (84), case studies (85), and workshops (86). More positive outcomes were observed when team leaders were involved and when members of the team were included in the development of the intervention (60). However, this review found mixed results and highlighted the need for further research into the efficacy of these interventions. Furthermore, none of the studies included in the review were focused on MH teams (60), suggesting that to date there have been no interventions to improve PS conducted in such settings.

Interventions aimed at lowering levels of CF may have a positive impact on ITL. Research has suggested that better support from management, access to clinical supervision (9,55) and relevant training (73) may ameliorate CF, with these being possible avenues for improving staff

wellbeing. Additionally, emotional support from colleagues, regular supervision, and consultation from management have been associated with higher levels of CS (9), suggesting that interventions designed to improve CF may also improve CS.

Clinical psychologists can deliver interventions on an individual and team-based level, for example by providing staff training, facilitating clinical supervision and reflective practice, and by modelling behaviours that are positive for well-being, such as taking breaks. However, these suggested interventions and other interventions the NHS has employed in recent years to improve staff well-being (such as mindfulness or resilience training) locate the responsibility for improving well-being in the staff themselves, rather than the wider systems and sociopolitical landscape. This ignores the fact that the main barriers to positive NHS staff well-being and teamworking are financial cuts and a lack of adequate staffing, where staff are expected to do more with less. Since the Conservative government came to power in 2010, there has been a reduction in real-terms budget increases (87), funding constraints leading to pressure to make increasingly more challenging 'efficiency savings' (88), and a lack of credible workforce planning (89). Clinical psychologists can play a vital role in highlighting how these issues affect the workforce and should use their power within the system to fight for better working conditions to improve staff-wellbeing and retention, and patient care. This might look like developing business plans with a focus on increasing staffing, conducting research to emphasise the problems within the system, being involved in policy development, and speaking to Trust executives and MPs to continue to stress the difficulties the workforce are facing.

Conclusion

This is the first study to investigate an association between CS, CF, and PS, and the impact these factors have on ITL in inpatient MH staff. In clinical practice interventions designed to improve PS, CF, and CS could be implemented to increase staff wellbeing and retention. This study has illuminated a previously unexplored avenue of research and future research should

focus on the evaluation of interventions to improve PS in inpatient MH teams.

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Tables

Table 2-1

Demographic Characteristics

Characteristics	*n*	*%*	Min.	Max.
Age	33 (med.)		19	65
18-25	34	19.0		
26-30	35	19.6		
31-35	31	17.3		
36-40	26	14.5		
41-50	32	17.9		
51+	21	11.7		
Gender				
Female	143	79.9		
Male	32	17.9		
Non-binary	2	1.1		
Agender	1	.6		
Prefer not to disclose	1	.6		
Ethnicity				
Asian – Indian	4	2.2		
Asian – Pakistani	3	1.7		
Any other Asian background	3	1.7		
Black - Caribbean	1	.6		
Mixed – White and Asian	2	1.1		
Any other Mixed background	1	.6		
White – British	150	83.8		
White – Irish	5	2.8		
Any other White background	8	4.5		
Gypsy or Irish Traveller	1	.6		
Any other ethnic group	1	.6		
Professional Group				
Medical	8	4.5		
Nursing	83	46.4		
Occupational Therapy	8	4.5		
Psychology	76	42.5		
Other	3	1.7		
Years in Profession	8.4 (mean)		1	40
1-5	85	47.5		
6-10	39	21.8		
11-15	25	13.9		
16-20	20	11.2		
21-30	6	3.4		
30+	4	2.2		
Years in Role	3.7 (mean)		1	28
1-5	138	77.1		
6-10	31	17.3		

11-20	8	4.5
21+	2	1.1

Note. n, number of participants; Min., Minimum; Max., Maximum

Table 2-2

Means, Ranges, Cronbach's Alpha, Percentages, and Cut Scores for Predictor and Outcome Variables

Variables	Mean	Min.	Max.	Cronbach's alpha (α)
ProQOL-5 CS Score	36.6	17	50	.91
ProQOL-21 CS Score	29.0	14	42	
ProQOL-5 CF Score	23.9	13	41	.82
ProQOL-21 CF Score	26.5	11	42	.88
PS Score	33.6	7	49	.86

	Low		Moderate		High	
	n	%	*n*	%	*n*	%
CS Cut Scores	3	1.7	137	76.5	39	21.8
CF Cut Scores	81	45.3	98	54.7	0	0.0

	Yes		No	
	n	%	*n*	%
Intention to Leave	50	27.9	129	72.1

	n	%
Leave Outcome		
Leave Current Job	29	16.2 (59.2)
Leave NHS	11	6.1 (22.4)
Leave Profession	9	5.0 (18.4)

Note. n, number of participants; Min., Minimum; Max., Maximum; ProQOL, Professional Quality of Life Measure;, CS, Compassion Satisfaction; CF, Compassion Fatigue; PS, Psychological Safety (measured using the Team Psychological Safety Scale).

Table 2-3

Results of Binary Logistic Regression and the Interactions between Predictor Variables, utilising ProQOL-5 Scoring

Step and Predictors	*B*	*SE B*	*Wald* χ^2	*df*	*p*	*OR*	*95% CI OR*
Step 1.							
ProQOL-5 Compassion Fatigue	0.10	.03	12.41	1	<.001	1.11	1.05-1.18
Step 2:							
ProQOL-5 Compassion Fatigue	0.10	.03	8.64	1	.003	1.10	1.03-1.18
ProQOL-5 Compassion Satisfaction	-0.19	.04	25.91	1	<.001	0.83	0.77-0.89
Step 3:							
ProQOL-5 Compassion Fatigue	0.08	.04	4.96	1	.026	1.08	1.01-1.16
ProQOL-5 Compassion Satisfaction	-0.14	.04	12.52	1	<.001	0.87	0.80-0.94
Psychological Safety	-0.08	.03	7.87	1	.007	0.93	0.88-0.98
Step 4:							
ProQOL-5 Compassion Fatigue	0.14	.20	0.49	1	.484	1.15	0.78-1.71
ProQOL-5 Compassion Satisfaction	-0.10	.15	0.43	1	.513	0.91	0.68-1.21
Psychological Safety	-0.08	.03	7.44	1	.006	0.93	0.88-0.98
Compassion Fatigue x Compassion Satisfaction Interaction	-0.00	.01	0.10	1	.747	1.00	0.99-1.01
Step 5:							
ProQOL-5 Compassion Fatigue	0.06	.21	0.08	1	.776	1.06	0.71-1.59
ProQOL-5 Compassion Satisfaction	0.00	.16	0.00	1	.991	1.00	0.73-1.38
Psychological Safety	-0.25	.14	3.51	1	.061	0.78	0.60-1.01
Compassion Fatigue x Compassion Satisfaction Interaction	-0.01	.01	0.74	1	.389	1.00	0.98-1.01
Compassion Fatigue x Psychological Safety Interaction	0.01	.01	1.82	1	.177	1.01	1.00-1.02

Step 6:							
ProQOL-5 Compassion Fatigue	0.06	.21	0.08	1	.774	1.06	0.71-1.60
ProQOL-5 Compassion Satisfaction	-0.01	.21	0.00	1	.982	1.00	0.67-1.49
Psychological Safety	-0.26	.21	1.56	1	.208	0.77	0.51-1.16
Compassion Fatigue x Compassion Satisfaction Interaction	-0.01	.01	0.74	1	.389	1.00	0.98-1.01
Compassion Fatigue x Psychological Safety Interaction	0.01	.01	1.82	1	.178	1.01	1.00-1.02
Compassion Satisfaction x Psychological Safety Interaction	0.00	.01	0.00	1	.960	1.00	0.99-1.01

Note. B, unstandardized regression coefficient; *SE B*, standard error of Beta; *Wald* χ^2, Wald chi-square test statistic; *df*, degrees of freedom; *OR*, Odds Ratio; *CI*, confidence interval

Table 2-4

Results of Binary Logistic Regression and the Interactions between Predictor Variables, utilising ProQOL-21 Scoring

Step and Predictors	*B*	*SE B*	*Wald* χ^2	*df*	*p*	*OR*	*95% CI OR*
Step 1.							
ProQOL-21 Compassion Fatigue	0.14	.03	22.50	1	<.001	1.15	1.08-1.22
Step 2.							
ProQOL-21 Compassion Fatigue	0.11	.03	11.38	1	.001	1.11	1.05-1.19
ProQOL-21 Compassion Satisfaction	-0.17	.04	18.67	1	<.001	0.84	0.78-0.91
Step 3.							
ProQOL-21 Compassion Fatigue	0.08	.03	5.75	1	.016	1.08	1.02-1.16
ProQOL-21 Compassion Satisfaction	-0.14	.04	10.09	1	.001	0.87	0.80-0.95
Psychological Safety	-0.07	.03	6.15	1	.013	0.93	0.88-0.99
Step 4.							
ProQOL-21 Compassion Fatigue	0.17	.18	0.95	1	.329	1.19	0.84-1.67
ProQOL-21 Compassion Satisfaction	-0.04	.18	0.05	1	.825	0.96	0.67-1.38
Psychological Safety	-0.07	.03	6.33	1	.012	0.93	0.88-0.98
Compassion Fatigue x Compassion Satisfaction Interaction	-0.00	.01	0.28	1	.597	1.00	0.98-1.01
Step 5.							
ProQOL-21 Compassion Fatigue	0.13	.19	0.47	1	.493	1.14	0.79-1.63
ProQOL-21 Compassion Satisfaction	0.01	.20	0.00	1	.975	1.01	0.69-1.48
Psychological Safety	-0.15	.13	1.45	1	.229	0.86	0.67-1.10
Compassion Fatigue x Compassion Satisfaction Interaction	-0.01	.01	0.51	1	.474	1.00	0.98-1.01
Compassion Fatigue x Psychological Safety Interaction	0.00	.00	0.43	1	.514	1.00	1.00-1.01

Step 6.							
ProQOL-21 Compassion Fatigue	0.12	.19	0.39	1	.533	1.13	0.78-1.63
ProQOL-21 Compassion Satisfaction	-0.04	.28	0.02	1	.899	0.97	0.56-1.66
Psychological Safety	-0.19	.20	0.89	1	.346	0.83	0.57-1.22
Compassion Fatigue x Compassion Satisfaction Interaction	-0.01	.01	0.44	1	.508	1.00	0.98-1.01
Compassion Fatigue x Psychological Safety Interaction	0.00	.00	0.44	1	.506	1.00	1.00-1.01
Compassion Satisfaction x Psychological Safety Interaction	0.00	.01	0.05	1	.832	1.00	0.99-1.01

Note. B, unstandardized regression coefficient; *SE B*, standard error of Beta; *Wald* χ^2, Wald chi-square test statistic; *df*, degrees of freedom; *OR*, Odds Ratio; *CI*, confidence interval

Table 2-5

Results of Adjusted[a] Binary Logistic Regression and the Interactions between Predictor Variables, utilising ProQOL-5 Scoring

Step and Predictors	*B*	*SE B*	*Wald* χ^2	*df*	*p*	*OR*	*95% CI OR*
Step 1.							
Gender	-0.14	.48	0.09	1	.770	0.87	0.34-2.24
Job Role	0.11	.24	0.23	1	.631	1.12	0.70-1.78
Years in Profession	-0.04	.03	1.73	1	.189	0.96	0.90-1.02
Age	0.01	.02	0.21	1	.648	1.01	0.97-1.06
Step 2.							
Gender	-0.07	.50	0.02	1	.889	0.93	0.35-2.50
Job Role	-0.04	.27	0.03	1	.870	0.96	0.57-1.62
Years in Profession	-0.04	.03	1.22	1	.270	0.96	0.90-1.03
Age	0.02	.02	0.99	1	.319	1.02	0.98-1.07
ProQOL-5 Compassion Fatigue	0.11	.03	12.87	1	<.001	1.12	1.05-1.19
Step 3:							
Gender	-0.99	.63	2.51	1	.113	0.37	0.11-1.27
Job Role	-0.02	.30	0.00	1	.951	0.98	0.55-1.76
Years in Profession	-0.08	.04	3.43	1	.064	0.92	0.85-1.01
Age	0.05	.03	3.38	1	.066	1.05	1.00-1.11
ProQOL-5 Compassion Fatigue	0.11	.04	8.35	1	.004	1.11	1.04-1.20
ProQOL-5 Compassion Satisfaction	-0.22	.04	26.26	1	<.001	0.80	0.74-0.87
Step 4:							
Gender	-0.80	.65	1.51	1	.219	0.45	0.13-1.61
Job Role	0.09	.30	0.08	1	.775	1.09	0.60-1.98
Years in Profession	-0.07	.04	2.48	1	.116	0.93	0.86-1.02
Age	0.03	.03	1.29	1	.256	1.03	0.98-1.10

ProQOL-5 Compassion Fatigue	0.08	.04	4.17	1	.041	1.08	1.00-1.17
ProQOL-5 Compassion Satisfaction	-0.17	.05	13.55	1	<.001	0.84	0.77-0.92
Psychological Safety	-0.07	.03	4.88	1	.027	0.94	0.88-0.99
Step 5:							
Gender	-0.79	.65	1.46	1	.227	0.46	0.13-1.63
Job Role	0.09	.30	0.09	1	.771	1.09	0.60-1.98
Years in Profession	-0.07	.04	2.36	1	.124	0.93	0.86-1.02
Age	0.03	.03	1.17	1	.279	1.03	0.97-1.10
ProQOL-5 Compassion Fatigue	0.18	.22	0.68	1	.409	1.20	0.78-1.86
ProQOL-5 Compassion Satisfaction	-0.10	.16	0.38	1	.538	0.91	0.66-1.24
Psychological Safety	-0.07	.03	5.07	1	.024	0.93	0.88-0.99
Compassion Fatigue x Compassion Satisfaction Interaction	-0.00	.01	0.23	1	.635	1.00	0.99-1.01
Step 6:							
Gender	-0.97	.69	1.99	1	.159	0.38	0.10-1.46
Job Role	0.09	.31	0.08	1	.772	1.10	0.59-2.02
Years in Profession	-0.07	.05	2.33	1	.127	0.93	0.86-1.02
Age	0.04	.03	1.37	1	.242	1.11	0.72-1.72
ProQOL-5 Compassion Fatigue	0.11	.22	0.22	1	.637	1.06	0.71-1.59
ProQOL-5 Compassion Satisfaction	0.00	.17	0.00	1	.983	1.00	0.72-1.41
Psychological Safety	-0.25	.14	3.25	1	.071	0.78	0.60-1.02
Compassion Fatigue x Compassion Satisfaction Interaction	-0.01	.01	1.01	1	.315	0.99	0.98-1.01
Compassion Fatigue x Psychological Safety Interaction	0.01	.01	1.84	1	.175	1.01	1.00-1.02
Step 7:							
Gender	-1.01	.71	2.04	1	.153	0.36	0.09-1.46

Job Role	0.11	.32	0.12	1	.728	1.12	0.60-2.09
Years in Profession	-0.07	.04	2.36	1	.124	0.93	0.86-1.02
Age	0.04	.03	1.43	1	.231	1.04	0.98-1.10
ProQOL-5 Compassion Fatigue	0.12	.23	0.26	1	.610	1.12	0.72-1.76
ProQOL-5 Compassion Satisfaction	-0.04	.21	0.03	1	.862	0.96	0.64-1.46
Psychological Safety	-0.31	.22	1.98	1	.160	0.74	0.48-1.13
Compassion Fatigue x Compassion Satisfaction Interaction	-0.01	.01	1.07	1	.301	0.99	0.98-1.01
Compassion Fatigue x Psychological Safety Interaction	0.01	.01	1.82	1	.177	1.01	1.00-1.02
Compassion Satisfaction x Psychological Safety Interaction	0.00	.01	0.12	1	.731	1.00	0.99-1.01

Note. [a]Adjusted analyses control for gender, job role, years in profession, and age; *B*, unstandardized regression coefficient; *SE B*, standard error of Beta; *Wald* χ^2, Wald chi-square test statistic; *df*, degrees of freedom; *OR*, Odds Ratio; *CI*, confidence interval

Table 2-6

Results of Adjusted[a] Binary Logistic Regression and the Interactions between Predictor Variables, utilising ProQOL-21 Scoring

Step and Predictors	*B*	*SE B*	*Wald* χ^2	*df*	*p*	*OR*	*95% CI OR*
Step 1.							
Gender	-0.14	.48	0.09	1	.770	0.87	0.34-2.24
Job Role	0.11	.24	0.23	1	.631	1.12	0.70-1.78
Years in Profession	-0.04	.03	1.73	1	.189	0.96	0.90-1.02
Age	0.01	.02	0.21	1	.648	1.01	0.97-1.06
Step 2.							
Gender	-0.04	.54	0.01	1	.937	0.96	0.34-2.74
Job Role	-0.12	.29	0.17	1	.679	0.89	0.50-1.57
Years in Profession	-0.05	.04	1.98	1	.159	0.95	0.88-1.02
Age	0.03	.03	1.12	1	.290	1.03	0.98-1.08
ProQOL-21 Compassion Fatigue	0.15	.03	22.59	1	<.001	1.16	1.09-1.23
Step 3:							
Gender	-0.75	.62	1.49	1	.222	0.47	0.14-1.58
Job Role	-0.04	.30	0.02	1	.898	0.96	0.54-1.73
Years in Profession	-0.09	.04	4.21	1	.040	0.91	0.84-1.00
Age	0.05	.03	2.68	1	.102	1.05	0.99-1.11
ProQOL-21 Compassion Fatigue	0.11	.03	10.53	1	.001	1.12	1.05-1.19
ProQOL-21 Compassion Satisfaction	-0.20	.05	19.12	1	<.001	0.82	0.75-0.89
Step 4:							
Gender	-0.64	.64	1.01	1	.316	0.53	0.15-1.84
Job Role	0.08	.30	0.07	1	.788	1.09	0.60-1.97
Years in Profession	-0.08	.05	3.01	1	.083	0.92	0.85-1.01
Age	0.03	.03	1.07	1	.300	1.03	0.97-1.09

ProQOL-21 Compassion Fatigue	0.08	.04	4.96	1	.026	1.09	1.01-1.17
ProQOL-21 Compassion Satisfaction	-0.17	.05	11.31	1	.001	0.84	0.77-0.93
Psychological Safety	-0.06	.03	4.28	1	.039	0.94	0.89-1.00
Step 5:							
Gender	-0.63	.64	0.98	1	.323	0.53	0.15-1.86
Job Role	0.09	.30	0.09	1	.765	1.10	0.60-1.98
Years in Profession	-0.08	.05	2.84	1	.092	0.93	0.85-1.01
Age	0.03	.03	0.94	1	.334	1.03	0.97-1.09
ProQOL-21 Compassion Fatigue	0.18	.19	0.86	1	.354	1.19	0.82-1.73
ProQOL-21 Compassion Satisfaction	-0.06	.20	0.11	1	.746	0.94	0.64-1.38
Psychological Safety	-0.07	.03	4.51	1	.034	0.94	0.88-1.00
Compassion Fatigue x Compassion Satisfaction Interaction	-0.00	.01	0.26	1	.608	1.00	0.98-1.01
Step 6:							
Gender	-0.71	.69	1.16	1	.281	0.49	0.14-1.79
Job Role	0.09	.31	0.09	1	.772	1.10	0.60-1.99
Years in Profession	-0.08	.05	2.82	1	.093	0.93	0.85-1.01
Age	0.03	.03	1.02	1	.313	1.03	0.97-1.09
ProQOL-21 Compassion Fatigue	0.14	.20	0.46	1	.497	1.14	0.78-1.69
ProQOL-21 Compassion Satisfaction	-0.02	.21	0.01	1	.925	0.98	0.65-1.48
Psychological Safety	-0.14	.13	1.23	1	.268	0.87	0.67-1.12
Compassion Fatigue x Compassion Satisfaction Interaction	-0.01	.01	0.48	1	.490	1.00	0.98-1.01
Compassion Fatigue x Psychological Safety Interaction	0.00	.00	0.39	1	.534	1.00	0.99-1.01
Step 7:							
Gender	-0.78	.68	1.30	1	.255	0.46	0.12-1.75

Job Role	0.12	.31	0.14	1	.708	1.12	0.61-2.07
Years in Profession	-0.08	.05	2.94	1	.086	0.92	0.85-1.01
Age	0.03	.03	1.15	1	.284	1.03	0.97-1.10
ProQOL-21 Compassion Fatigue	0.11	.21	0.31	1	.578	1.12	0.75-1.68
ProQOL-21 Compassion Satisfaction	-0.11	.29	0.16	1	.694	0.89	0.51-1.58
Psychological Safety	-0.22	.21	1.13	1	.288	0.80	0.54-1.12
Compassion Fatigue x Compassion Satisfaction Interaction	-0.00	.01	0.35	1	.553	1.00	0.98-1.01
Compassion Fatigue x Psychological Safety Interaction	0.00	.00	0.45	1	.505	1.00	0.99-1.01
Compassion Satisfaction x Psychological Safety Interaction	0.00	.01	0.23	1	.634	1.00	0.99-1.01

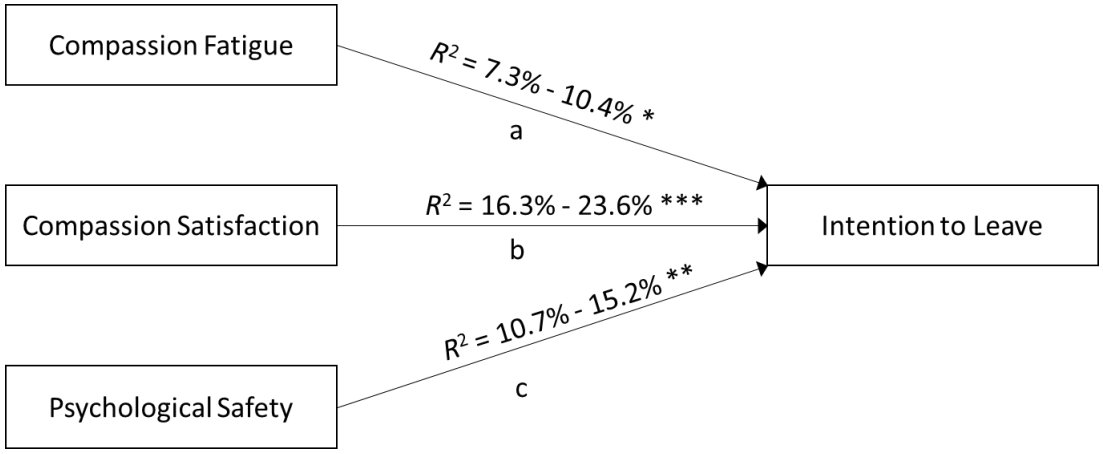
Note. [a]Adjusted analyses control for gender, job role, years in profession, and age; *B*, unstandardized regression coefficient; *SE B*, standard error of Beta; *Wald* χ^2, Wald chi-square test statistic; *df*, degrees of freedom; *OR*, Odds Ratio; *CI*, confidence interval

Figures

Figure 2-1

Regression Models

Model 3.1 – ProQOL-5 Scoring



Overall, the model explains 27.0% - 38.8% of variance in Intention to Leave

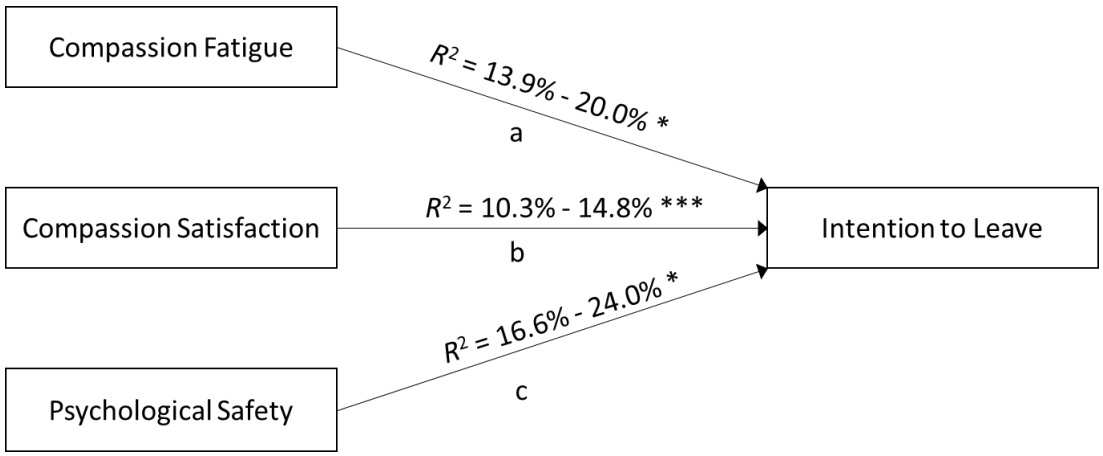
This model accurately predicts Intention to Leave 82.1% of the time

a = Increase by 1 point in Compassion Fatigue scores leads to an increase by a factor of 1.08 in the odds of Intention to Leave

b = Increase by 1 point in Compassion Satisfaction scores leads to a decrease by a factor of 0.87 in the odds of Intention to Leave

c = Increase by 1 point in Psychological Safety scores leads to a decrease by a factor of .93 in the odds of Intention to Leave

Model 3.2 – ProQOL-21 Scoring



Overall, the model explains 26.9% - 38.8% of variance in Intention to Leave

This model accurately predicts Intention to Leave 83.2% of the time

a = Increase by 1 point in Compassion Fatigue scores leads to an increase by a factor of 1.08 in the odds of Intention to Leave

b = Increase by 1 point in Compassion Satisfaction scores leads to a decrease by a factor of 0.87 in the odds of Intention to Leave

c = Increase by 1 point in Psychological Safety scores leads to a decrease by a factor of .93 in the odds of Intention to Leave

Note. Analogues of R^2 reported, Cox and Snell R^2 and Nagelkerke R^2 respectively.

**p<0.05, **p<0.01, ***p<0.001*

Appendix

Appendix 2-1

Results Utilising the ProQOL-21 Scoring

Pearson Correlation

CS was significantly and positively correlated with PS (r = .507, *N* = 179, *p* = <0.001, one-tailed). Whereas CF was found to be significantly negatively correlated with PS (r = -.474, *N* = 179, *p* = <0.001, one-tailed).

CS and CF were also significantly and negatively correlated (r = -.343, *N* = 179, *p* = <0.001, one-tailed).

MANOVAs

Gender

The between-subjects factor comprised two groups, male or female. The difference between the two groups on the combined dependent variable of compassion and PS measures was non-significant, ($F(3,171) = 2.27$, $p = .082$; Wilks' Lambda = .96; partial $\eta^2 = .04$). Analysis of each individual dependent variable, using a Bonferroni adjusted alpha level of .017, showed that there were no statistically significant differences between the two groups on any of the measures.

Job Role

The between-subjects factor comprised four groups, psychology, nursing, occupational therapy, and medical. There was a statistically significant difference between the four groups on the combined dependent variable of compassion and PS measures ($F(9,411.45) = 2.40$, $p = <0.05$; Wilks' Lambda = .88; partial $\eta^2 = .04$). Analysis of each individual dependent variable, using a Bonferroni adjusted alpha level of .017, showed that there was no statistically significant

contribution of the PS scale or CS scale. The four groups differed significantly on the CF scale, (F(3,171) = 4.83, p = <0.005, partial η^2 = .08). The mean scores for CF were highest for those whose profession was nursing (M = 28.43), followed by occupational therapy (M = 27.00), psychology (M = 24.91), and finally those whose profession was medical had the lowest mean CF scores (M = 22.75).

Years in Profession

The between-subjects factor comprised four groups, 1-5 years, 6-10 years, 11-15 years, and 16+ years. The difference between the four groups on the combined dependent variable of compassion and PS measures was non-significant, (F(9,421.19) = 1.51, p = .142; Wilks' Lambda = .93; partial η^2 = .03). Analysis of each individual dependent variable, using a Bonferroni adjusted alpha level of .017, showed that there were no statistically significant differences between the four groups on any of the measures.

Age

The between-subjects factor comprised six age groups, 18-25, 26-30, 31-35, 36-40, 41-50, and 51+. The difference between the six groups on the combined dependent variable of compassion and PS measures was non-significant, (F(15,472.46) = 1.42, p = .133; Wilks' Lambda = .89; partial η^2 = .04). Analysis of each individual dependent variable, using a Bonferroni adjusted alpha level of .017, showed that there were no statistically significant differences between the six groups on any of the measures.

Logistic Regression Analysis

In the first step of the regression analysis CF significantly predicted ITL (omnibus chi-square = 26.74, df = 1, p < .0001). This step accounted for between 13.9% and 20.0% of the variance in ITL, with 92.2% of the staff who did not intend to leave successfully predicted. However, only 36.0% of predictions for the intent to leave group were accurate. The second step

explained between 24.2% and 34.8% of the variance in ITL, meaning that the inclusion of CS accounted for up to 10.6% of the variance. CS also significantly predicted ITL (omnibus chi-square = 22.82, df = 1, $p < .0001$). Adding CS increased the accuracy of the model at predicting both the intent to leave group, with this now being 46.0% and the group who did not intend to leave, 94.6%. Step 3 accounted for between 26.9% and 38.8% of the variance, thus the addition of PS accounted for up to 14.6% of the variance. PS significantly predicted ITL (omnibus chi-square = 6.56, df = 1, $p < .05$).

Adding PS to the model increased the percentage of accurate predictions of ITL to 56.0%, but did slightly decrease the accuracy of prediction of the group who do not intend to leave to 93.8%. Steps 4 – 6 did not significantly predict ITL and their inclusion added little to the model in terms of predictive influence. This suggests that the interaction effects of the three predictor variables do not have a significant influence upon ITL and that none of the predictor variables act as moderators for the relationship between each predictor and ITL.

As described above, the best fit for the data was represented in Model 3 (see Figure 2-1). Overall, this model significantly predicted ITL (omnibus chi-square = 56.12, df = 3, $p<0.0001$) and accurately predicts this 83.2% of the time. Table 2-4 gives coefficients and the Wald statistic and associated degrees of freedom and probability values for each of the predictor variables. This shows that CS, CF, and PS reliably predicted ITL. The values of the coefficients reveal that for every increased point in CS scores, the odds of a person intending to leave decrease by a factor of 0.87 (95% CI 0.80 and 0.94). Each increased point in CF scores is associated with an increase in the odds of intending to leave by a factor of 1.08 (95% CI 1.02-1.16). Finally, for every increased point in PS scores, the odds of a person intending to leave decrease by a factor of 0.93 (95% CI 0.88- 0.99).

[Table 2-4 here]

[Figure 2-1 here]

The adjusted analysis included demographic variables as the first step in the regression (see Table 2-6). None of the demographic variables were found to be significant predictors of ITL and they explained only 1-2% of the variance in the model. In addition to this, the demographic variables did not offer any increase in predictive power and did not accurately predict any of the participants who intended to leave their job. Furthermore, their inclusion in the model did not affect the relationship between ITL and the predictor variables of CS, CF, and PS. The predictor variables of CS, CF, and PS still explained between 30-42% of the variance in the model and accurately predicted ITL 82% of the time when controlling for demographic variables. As a result of this analysis, demographic variables were removed from the model and Model 3 remained the best fit for the data.

[Table 2-6 here]

Section Three: Critical Appraisal

Critical Reflection on a research project examining the measurement of teamwork and factors predicting intention to leave in inpatient mental health staff

Word count (excluding references): 3951

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Introduction

The purpose of this thesis was to explore the measurement of teamwork and factors affecting intention to leave in mental health staff. This critical appraisal outlines the main findings of both the systematic literature review and the empirical paper, describing difficulties in the process, limitations and suggested improvements, and my own personal reflections on the work.

Systematic Literature Review

Main Findings

The systematic literature review evaluated the characteristics, methodological quality, and psychometric measurement properties of measures of teamwork in mental health teams. Thirteen instruments were identified from fifteen studies regarding the development and validation of teamwork instruments. The measures were appraised and synthesised using the Consensus-based Standards for the selection of health Measurement Instruments (COSMIN) approach. This included using the COSMIN Risk of Bias Checklist (1) and the criteria for good measurement properties (2) as appraisal tools. The review emphasised differences in how teamwork was measured across the instruments, with measures assessing different aspects of teamwork such as team effectiveness (3,4) and interprofessional collaboration (5-7). The instruments were also developed and validated in a range of mental health settings, with mental health staff working with different client groups. The instruments differed in methodological quality and psychometric robustness, and none of the included studies reported on all nine psychometric properties described in the COSMIN checklist. Furthermore, the psychometric property of criterion validity could not be assessed for any of the included measured, as this requires comparing a measure to a pre-existing ‘gold standard’. To date no ‘gold standard’ measure of teamwork in mental health teams exists, meaning that

criterion validity could not be evaluated in this review. There was one instrument that reported on the majority of the psychometric properties (CPAT; 8) however, the quality ratings of each psychometric property, and the quality of evidence from which these ratings were based was inconsistent.

The overall conclusion of the review was that there is a lack of evidence for psychometrically sound measures of teamwork for use with mental health teams. The instruments included in the review demonstrated generally doubtful or inadequate methodological quality, with inconsistent or indeterminate psychometric robustness. These results suggest that additional research is needed to either develop new measures or further validate existing measures of teamwork in mental health teams. This will enable researchers and clinicians to select suitable measures for evaluating teamwork in both research and clinical settings. The hope is that understanding teamwork in mental health settings may help guide plans for improvement, which may then engender increased staff wellbeing and better outcomes for service users.

Defining the research question

The topic of the empirical paper was defined early in the research process however, deciding on a topic for the systematic literature review proved more difficult. It was not appropriate to conduct a review relating to the concepts explored in the empirical paper, as there have been recent reviews of CS and CF (9,10) and on staff retention (11,12) in mental health teams. There was also little existing research pertaining to PS in mental health teams. As the literature had described various associations between CS and CF and workplace or team-based factors, it was felt that teamwork in mental health settings would be an interesting avenue of exploration.

From a scoping search of the literature, I found that there was a relative lack of research into teamwork in mental health teams, and even less into teamwork specifically

in inpatient mental health teams. I was interested in knowing why this was the case, and whether this was due to a lack of appropriate instruments to measure teamwork in these settings. Several reviews of measures of teamwork in healthcare teams have previously been conducted (13,14) however, both of these reviews focused on all types of healthcare teams, not only mental healthcare teams. To my knowledge there have been no prior reviews evaluating the development and psychometric properties of measures of teamwork in mental healthcare teams. Furthermore, the literature searches for these reviews were conducted in 2012 (13) and 2014 (14), meaning that at the time of carrying out the searches for this literature review, those previous searches were around a decade old.

There were difficulties in defining the research question, namely the lack of agreement in the literature as to how teamwork is conceptualised. In Valentine's (13) review, the authors distinguished various aspects of teamwork including team effectiveness, behavioural dimensions, and emergent states. Team effectiveness measures often focus on the 'outputs' of teamwork, such as the quality of relationships with service users, improvements in service user wellbeing, and the ability to provide continuous care (3,4). Measures that assess behavioural dimensions of teamwork concentrate on the things that individuals within a team *do*, such as communication (15), collaboration (5-7,16,17), or shared decision making (18). Emergent states covers both the affective and cognitive features of teamwork, and measures that evaluate these factors may focus on respect (3), support (15), or conflict (8,19). Many of the measures also cover multiple domains of teamwork. These variations in assessing teamwork made it difficult to define the research question, as not all studies even utilised the word 'teamwork' to describe what their instrument was measuring, instead choosing to use the specific aspect of teamwork being evaluated, for example 'interprofessional collaboration' (5,16). As a result of this, when the research question specifies 'teamwork',

this encompasses all domains of teamwork and does not only include those studies which specifically use the word 'teamwork'.

Another thing to consider when developing the research question and search strategy was what constitutes a mental health team or mental health staff. Some measures were developed to be used in specific mental health settings, such as Community Mental Health Teams (CMHTs; 3,4), whereas others were developed for use with particular client groups, such as children and young people with mental health needs (15,20). These differences meant that not all participants in these studies were mental health staff in the traditional sense, for example, teachers and social workers (5-7,17), but all participants did work with client groups with mental health needs. In order to capture studies reporting on measures used in a range of teams and settings, 'mental health team' was defined as any team that worked with individuals with a focus on their mental health needs and in which at least 25% of the participants in the study were mental health staff. This decision was made due to the relative lack of research into teamwork in mental health teams and a desire to include all measures that may be relevant.

Barriers and Limitations

Due to the lack of consensus as to what constitutes teamwork in the literature and the wide- range of settings that can be considered mental health services, the search strategy needed to be broad. This brought with it challenges, and specificity was sacrificed for the sake of sensitivity. The search returned a high number of papers (*n* = 6962) and I was unable to further amend the search to reduce this number. Attempting to edit the search strategy at this point resulted in papers I knew were relevant to be lost from the results. It took a considerable amount of time for me to screen the records and this had a knock-on effect in terms of timescale for working on other parts of the thesis.

The appraisal tool chosen to evaluate the studies included in the review was also

extremely time-intensive. The COSMIN methodology for assessing risk of bias and criteria for good measurement properties covers the appraisal of nine domains of psychometric measurement, as well as questions pertaining to the development of an instrument, which is useful when assessing content validity (1,2,21,22). The COSMIN manual is 151 pages long and consists of 110 questions in total (1,2,22). Not all of the questions are relevant for every instrument but it takes time to learn how and when to apply these questions to the studies. A recent study evaluating the COSMIN tool reported that it took their team of four authors, who all had graduate-level training in tool development, 25 hours to complete the appraisal of one instrument, this also did not include the time needed to become acquainted with the COSMIN tools (23). In addition to this McKenna and Heaney (24) argue that the usefulness of the COSMIN tool relies on the ability of the researchers utilising it to appraise the information in the studies, and they suggest that researchers using the COSMIN methodology should have previous experience and knowledge of tool development and psychometrics. Considering these critiques of the COSMIN methodology and my own experiences, on reflection this type of systematic literature review is probably slightly outside the scope of what is feasible for a DClinPsy thesis.

A further limitation of the review was that it was not possible to have a second rater complete a proportion of the ratings in order to establish inter-rater agreement. This was due to time constraints, as the number of records to be screened and the time required to both learn how to use the COSMIN tools and to then apply them in order to appraise the instruments was considerable. Having a second rater is best practice when conducting systematic reviews, although it is recognised that there are times when this is not feasible, such as when the systematic reviewer is a student (25). Prior to submitting the review for publication, I would like for a proportion of the included instruments to be appraised by a second reviewer using the COSMIN methodology to ensure inter- rater reliability and to

strengthen the review's findings.

Reflections on Process

Despite some of the barriers and limitations, I felt that I learnt a lot from the process of completing the literature review. I had some previous knowledge of psychometrics but from learning and applying the COSMIN tools, I have a new appreciation for the amount of work that goes into developing and validating outcome measures. It has also made me think more critically about
measures that are purported to be 'valid' and 'reliable', frequently in research, measures are claimed to be reliable but only the Cronbach's alpha for these measures is reported. Cronbach's alpha can be used as a measure of internal consistency, but internal consistency is only one aspect of reliability (1,2).

These experiences also affected how I viewed my empirical paper, as I utilised several validated measures within my research. For example, the Team Psychological Safety Scale (26) that I used to measure PS was developed from a sample of teams working in a manufacturing company. If I were to use the COSMIN methodology to appraise this scale, the development of this measure would have been rated as 'inadequate', as it was not developed and tested in the population it was later used in (22). However, measures are frequently applied in populations that differ from the original population they were developed in, and the Team Psychological Safety Scale
(26) has been used in healthcare teams (27). When using a measure in new population, studies could report on the psychometric properties of the instrument in these populations to add to the evidence base for that measure. For example Kuosmanen et al.'s (28) study included in this review utilised a pre-existing measure (the Hospital Survey on Patient Safety Culture, HSOPSC), but conducted this study with inpatient mental health staff, which is a deviation from the physical health hospitals it is usually applied to. The authors

reported on several domains of psychometric measurement, internal consistency and construct validity, meaning that this is a start of an evidence base for the use of this measure in inpatient mental health populations.

Empirical Paper

Main Findings

The empirical paper investigated factors predicting ITL in inpatient mental health staff. These factors were CS, CF, and PS. Previous research has highlighted associations between staff well-being and workplace factors (such as feeling supported by one's team), and healthcare staff's ITL their job. However, to my knowledge there has only been one previous study to date investigating CS and CF in UK inpatient mental health staff (29). Furthermore, there have been no previous studies exploring PS' association with CS and CF, specifically in an inpatient psychiatric setting. The study utilised a cross-sectional design to collect data via an online survey. Statistical analyses were completed to investigate the hypotheses. Pearson correlations and MANOVAs were used to assess associations between the predictor variables of CS, CF, and PS, and binary logistic regression was utilised to elucidate whether the predictor variables predicted ITL.

The main findings of the study were that 28% of the sample were intending to leave their job in the next year, with 6% intending to leave the NHS, and 5% intending to entirely leave their healthcare profession. CS, CF, and PS were all found to significantly predict ITL, with participants being more likely to intend to leave their job if they reported higher levels of CF, and less likely to intend to leave their job if they reported higher levels of CS and PS. The majority of the participants reported moderate and high levels of CS, and low and moderate levels of CF. None of the participants met the threshold for high CF, although the average scores for CF were higher than in other studies into mental health teams (30-36). Finally, job role and years in role were found to be significantly associated

with CF, with nursing staff and participants who had been in their job for 1-5 years reporting the highest levels of CF in the sample. Other demographic variables were not found to be associated with CF and there were no significant relationships observed between demographic variables and CS or PS. The study concluded that PS may offer a new area of research regarding inpatient mental health settings and that interventions that focus on increasing levels of PS and CS, whilst lowering levels of CF may have an impact upon turnover intention in psychiatric inpatient staff.

The ProQOL-21

During the development of this study, I became aware of a recent study investigating the construct validity and reliability of the Professional Quality of Life scale (ProQOL-5) (37). The authors of this paper utilised Rasch analysis to examine the measurement properties of the three scales in the ProQOL-5. Rasch analysis provides a different approach to the Classical Test Theory approaches that are frequently used when conducting instrument validation (38). Rasch measurement is interested in whether the data collected from an instrument represents an unchanging concept or dimension of interest (38). Heritage et al (37) argued that Rasch analysis can offer an appraisal of the instrument's reliability beyond those typically used in the literature to report on reliability or internal consistency, such as Cronbach's alpha values (37,39). The findings of this study were that the construct validity of the CS scale was supported, but that the Secondary Traumatic Stress and Burnout scales did not offer adequate construct validity (37). As a result of these findings, they created a new scale to measure CF by combining the Secondary Traumatic Stress and Burnout scales, and removing items that provided a poor fit to the underlying concept of CF. They also collapsed the some of the response options of the CS scale, which improved reliability (37). The authors offered this reduced item scale, the ProQOL-21, as a tool that is easier and less time consuming to administer and that offers improved reliability and construct validity when compared to the ProQOL-5.

Given that the ProQOL-5 has been utilised as a measure of CF and CS in an extensive body of literature, the decision was made to use the ProQOL-5 scoring within the main body of the empirical paper. This enabled comparisons to be drawn between the mean scores found in this study and the mean scores reported in other studies examining CS and CF in mental health settings. However, Heritage et al (37) made some compelling arguments regarding the issues of construct validity of the ProQOL-5 and it was felt that this could not be ignored. Thus, we decided to run all of the statistical analyses utilising both the ProQOL-5 and the ProQOL-21, to compare any differences in the results. Both the ProQOL-5 and the ProQOL-21 were cited in the research protocol and ethics application. There were no striking differences found between the two ways of scoring and the same patterns of results were observed when utilising both scoring methods. The main differences were that years in profession was not found to be significantly associated with CS and CF when using the ProQOL-21 scoring, and that the predictive power of the regression model was slightly higher when utilising the ProQOL-21 scoring. The similarities in the results give credibility to the findings of this thesis and to the assumption that the instrument chosen to measure CF and CS in this study accurately measures these constructs.

Limitations

The type of psychiatric inpatient setting was not collected as part of this study, as I hypothesised that there are inherent similarities across inpatient settings, regardless of the type of setting or client group supported. However, some of the previous studies assessing CF and CS in specific inpatient mental health settings have demonstrated different mean scores when compared to the sample from this study. For example, in a high secure forensic setting (40) CS (mean = 32.9) and CF (mean = 5.8) were both lower than what was found in this study's sample, and in an adolescent Psychiatric Intensive Care Unit (PICU)

(29) CS (mean = 39.7) was higher whereas CF (mean = 19.2) was lower. This suggests that the type of inpatient mental health setting may have an influence upon CS and CF, and that interventions to improve these may need to be targeted towards particular inpatient settings. To improve this, participants could have been asked to report the type of inpatient setting they worked in as part of the demographic questionnaire. MANOVAs could have then been conducted to investigate differences between scores in different types of settings.

Another limitation of the research was that only a small number of psychiatrists and occupational therapists took part. This is likely somewhat due to the composition of inpatient mental health teams, where nursing staff comprise the majority of the workforce. However, I would have liked to reach more potential participants from these professions. One reason for the low number of psychiatrists who took part in the study could be due to shortages across the profession, with vacancies of around 10% being recently reported (41). Furthermore, a recent HCPC report highlighted that only 18% of the occupational therapy workforce work within NHS mental health services (42), suggesting that there may be relatively few occupational therapists working in inpatient mental health services. I was not able to find an appropriate social media forum to reach psychiatrists, instead relying only on Twitter. In order to reach participants from these professions, I could have liaised with multiple NHS Trust research and development departments and emailed members of these professions directly, with a link to take part in the study. A recent study of psychiatrists in the UK utilised this method of recruitment and achieved a response rate of 42%, with 106 doctors taking part (43). However, in terms of recruitment, I felt that I made the best decision at the time, given the resources and time constraints I had, within the context of this being a DClinPsy thesis.

Current Context

This thesis has been conducted during a tumultuous time for the NHS, with services still experiencing the after-effects of the COVID-19 pandemic and multiple waves of industrial action taking place over the past year. Nurses, midwives, allied health professionals, paramedics and ambulance workers, junior doctors, and consultants are among the professionals who have carried out strike action in recent months (44). Despite the Government announcing a pay deal for 2022/2023, trade unions representing some NHS workers have explained that healthcare professionals are striking due to concerns about patient safety, which they feel has been affected by inadequate staffing levels and high levels of staff burnout (44,45). As described in the empirical paper, staffing recruitment and retention represents one of the biggest concerns in the NHS at present. It is important to note that this research did not ask participants directly about their reasons for leaving, of which there may be myriad, and potentially not related to the predictor variables examined in this research. I would have liked to utilise a mixed-methods approach, where participants could have given reasons for either their intentions to leave or stay, or interviews could have been conducted with a proportion of participants following quantitative data collection to add depth and context to the findings.

Personal Reflection

I think it is interesting to note that the epistemological approach taken in this thesis is positivist, whereas as a person and a clinician, I would naturally be more inclined toward a social constructionist position. I chose this topic as I have a particular interest in psychiatric inpatient settings, having worked in several during my career thus far. Anecdotally, I am aware that staffing has been a concern for a number of years, as has burnout, and I know of numerous staff members who have taken extended periods of sick leave due to stress. I have also witnessed this having a detrimental effect on service users and the quality of care they receive, despite the best attempts of overstretched staff. I

want to be part of the change in inpatient mental health settings and feel passionate about all clinical staff having access to effective reflective practice and clinical supervision. Recent qualitative studies have highlighted that reflective spaces can lead to improvements in compassion and clinical practice (46,47). I believe that having quantitative data to support what many healthcare staff in these settings are already voicing is likely to be the most effective way of providing evidence to implement strategies that may improve staff wellbeing and team dynamics. Despite the positivist stance of this thesis, which was informed by the literature, the variables I selected were influenced by my own experiences as a researcher and clinician regarding the importance of staff wellbeing and teamwork.

Conclusion

This thesis was successful in gaining an understanding of the measurement of teamwork in mental health settings, and the factors that are associated with ITL in inpatient mental health settings. There is a lack of psychometrically sound measures for teamwork in mental health settings, and this reflects a general lack of research interest in this area. Furthermore,

PS has been found to be a significant contributor to inpatient mental health staff's ITL their job, which is a novel finding. Working on this research has given me a new understanding of and appreciation for outcome measures, and I am now able to adopt a more critical lens when using them in my own clinical work, and when appraising research studies that purport to use 'valid' and 'reliable' measures. In terms of future directions, I hope that the publication of this research will highlight the importance of inpatient mental health staff wellbeing, and will be a starting point for the exploration of factors and interventions to improve CS, CF, and PS in this group of staff. Clinical psychology as a profession can support with this by embedding and facilitating clinical supervision and reflective practice.

It is my hope that this will help to improve working conditions for staff and the standard of care for service users.

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Section Four: Ethics Proposal

Word count (excluding references and appendices): 5950 words

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Welcome to the Integrated Research Application System

IRAS Project Filter

The integrated dataset required for your project will be created from the answers you give to the following questions. The system will generate only those questions and sections which (a) apply to your study type and (b) are required by the bodies reviewing your study. Please ensure you answer all the questions before proceeding with your applications.

Please complete the questions in order. If you change the response to a question, please select 'Save' and review all the questions as your change may have affected subsequent questions.

Please enter a short title for this project (maximum 70 characters)
Psychological safety and compassion in inpatient mental health teams

1. Is your project research?

(●) Yes ( ) No

2. Select one category from the list below:

( ) Clinical trial of an investigational medicinal product

( ) Combined trial of an investigational medicinal product and an investigational medical device

( ) Clinical investigation or other study of a medical device

( ) Other clinical trial to study a novel intervention or randomised clinical trial to compare interventions in clinical practice

( ) Basic science study involving procedures with human participants

(●) Study administering questionnaires/interviews for quantitative analysis, or using mixed quantitative/qualitative methodology

( ) Study involving qualitative methods only

( ) Study limited to working with human tissue samples (or other human biological samples) and data (specific project only)

( ) Study limited to working with data (specific project only)

( ) Research tissue bank

( ) Research database

If your work does not fit any of these categories, select the option below:

( ) Other study

2a. Please answer the following question(s):

a) Does the study involve the use of any ionising radiation?	( ) Yes	(●) No
b) Will you be taking new human tissue samples (or other human biological samples)?	( ) Yes	(●) No
c) Will you be using existing human tissue samples (or other human biological samples)?	( ) Yes	(●) No

3. In which countries of the UK will the research sites be located? *(Tick all that apply)*

☑ England

☐ Scotland
☐ Wales
☐ Northern Ireland

3a. In which country of the UK will the lead NHS R&D office be located:

◉ England
○ Scotland
○ Wales
○ Northern Ireland
○ This study does not involve the NHS

4. Which applications do you require?

☑ IRAS Form
☐ Confidentiality Advisory Group (CAG)
☐ Her Majesty's Prison and Probation Service (HMPPS)

Most research projects require review by a REC within the UK Health Departments' Research Ethics Service. Is your study exempt from REC review?

◉ Yes ○ No

4b. Please confirm the reason(s) why the project does not require review by a REC within the UK Health Departments Research Ethics Service:

☐ Projects limited to the use of samples/data samples provided by a Research Tissue Bank (RTB) with generic ethical approval from a REC, in accordance with the conditions of approval.
☐ Projects limited to the use of data provided by a Research Database with generic ethical approval from a REC, in accordance with the conditions of approval.
☐ Research limited to use of previously collected, non-identifiable information
☐ Research limited to use of previously collected, non-identifiable tissue samples within terms of donor consent
☐ Research limited to use of acellular material
☐ Research limited to use of the premises or facilities of care organisations (no involvement of patients/service users as participants)
☑ Research limited to involvement of staff as participants (no involvement of patients/service users as participants)

5. Will any research sites in this study be NHS organisations?

◉ Yes ○ No

5a. Are all the research costs and infrastructure costs (funding for the support and facilities needed to carry out the research e.g. NHS support costs) for this study provided by a NIHR Biomedical Research Centre (BRC), NIHR Applied Research Collaboration (ARC), NIHR Patient Safety Translational Research Centre (PSTRC), or an NIHR Medtech and In Vitro Diagnostic Co-operative (MIC) in all study sites?

Please see information button for further details.

○ Yes ◉ No

Please see information button for further details.

5b. Do you wish to make an application for the study to be considered for NIHR Clinical Research Network (CRN) Support and inclusion in the NIHR Clinical Research Network Portfolio?

Please see information button for further details.

○ Yes ◉ No

The NIHR Clinical Research Network (CRN) provides researchers with the practical support they need to make clinical studies happen in the NHS in England e.g. by providing access to the people and facilities needed to carry out research "on the ground".

If you select yes to this question, information from your IRAS submission will automatically be shared with the NIHR CRN. ***Submission of a Portfolio Application Form (PAF) is no longer required.***

6. Do you plan to include any participants who are children?

○ Yes ◉ No

7. Do you plan at any stage of the project to undertake intrusive research involving adults lacking capacity to consent for themselves?

○ Yes ◉ No

Answer Yes if you plan to recruit living participants aged 16 or over who lack capacity, or to retain them in the study following loss of capacity. Intrusive research means any research with the living requiring consent in law. This includes use of identifiable tissue samples or personal information, except where application is being made to the Confidentiality Advisory Group to set aside the common law duty of confidentiality in England and Wales. Please consult the guidance notes for further information on the legal frameworks for research involving adults lacking capacity in the UK.

8. Do you plan to include any participants who are prisoners or young offenders in the custody of HM Prison Service or who are offenders supervised by the probation service in England or Wales?

○ Yes ◉ No

9. Is the study or any part of it being undertaken as an educational project?

◉ Yes ○ No

Please describe briefly the involvement of the student(s):
This study is being undertaken as part of the thesis for one clinical psychology doctorate student (Aimee Hogan). This will involve both an empirical paper and a critical appraisal being written based on the study. Aimee Hogan will be undertaking the research project under the supervision of Dr James Kelly, Dr Dominica Chamberlain, and Dr Clea Beanland.

9a. Is the project being undertaken in part fulfilment of a PhD or other doctorate?

◉ Yes ○ No

10. Will this research be financially supported by the United States Department of Health and Human Services or any of its divisions, agencies or programs?

○ Yes ◉ No

11. Will identifiable patient data be accessed outside the care team without prior consent at any stage of the project (including identification of potential participants)?

○ Yes ◉ No

Integrated Research Application System
Application Form for Research administering questionnaires/interviews for quantitative analysis or mixed methodology study

The Chief Investigator should complete this form. Guidance on the questions is available wherever you see this symbol displayed. We recommend reading the guidance first. The complete guidance and a glossary are available by selecting Help.

Please define any terms or acronyms that might not be familar to lay reviewers of the application.

Short title and version number: (maximum 70 characters - this will be inserted as header on all forms)
Psychological safety and compassion in inpatient mental health teams

PART A: Core study information

1. ADMINISTRATIVE DETAILS

A1. Full title of the research:

Psychological Safety, Compassion Satisfaction, Compassion Fatigue, and Intention to Leave in Inpatient Mental Health Teams

A2-1. Educational projects

Name and contact details of student(s):

Student 1

Title	Forename/Initials	Surname
Miss	Aimee	Hogan

Address: 48 Slyne Road, Lancaster

Post Code: LA1 2HU
E-mail: a.hogan@lancaster.ac.uk
Telephone: 07531177478
Fax:

Give details of the educational course or degree for which this research is being undertaken:

Name and level of course/ degree:
Doctorate in Clinical Psychology

Name of educational establishment:
Lancaster University

Name and contact details of academic supervisor(s):

Academic supervisor 1

Title	Forename/Initials	Surname
Dr	James	Kelly

Address	Health Innovation One Sir John Fisher Drive Lancaster Univeraity
Post Code	LA1 4AT
E-mail	j.a.kelly@lancaster.ac.uk
Telephone	01524 593535
Fax	

Please state which academic supervisor(s) has responsibility for which student(s):
Please click "Save now" before completing this table. This will ensure that all of the student and academic supervisor details are shown correctly.

Student(s)	**Academic supervisor(s)**
Student 1 Miss Aimee Hogan	☑ Dr James Kelly

A copy of a current CV for the student and the academic supervisor (maximum 2 pages of A4) must be submitted with the application.

A2-2. Who will act as Chief Investigator for this study?

- ○ Student
- ◉ Academic supervisor
- ○ Other

A3-1. Chief Investigator:

	Title	Forename/Initials	Surname
	Dr	James	Kelly
Post	Lecturer in Clinical Psychology		
Qualifications	BSc, MSc, D.Clin.Psy		
ORCID ID	0000 0003 0228 015X		
Employer	Lancaster University		
Work Address	Health Innovation One Sir John Fisher Drive Lancaster University		
Post Code	LA1 4AT		
Work E-mail	j.a.kelly@lancaster.ac.uk		
* Personal E-mail	j.a.kelly@lancaster.ac.uk		
Work Telephone	01524 593535		
* Personal Telephone/Mobile			
Fax			

** This information is optional. It will not be placed in the public domain or disclosed to any other third party without prior consent.*
A copy of a current CV (maximum 2 pages of A4) for the Chief Investigator must be submitted with the application.

A4. Who is the contact on behalf of the sponsor for all correspondence relating to applications for this project?
This contact will receive copies of all correspondence from REC and HRA/R&D reviewers that is sent to the CI.

	Title	Forename/Initials	Surname
		Becky	Gordon
Address	Lancaster University		
	Lancaster		
Post Code	LA1 4YT		
E-mail	sponsorship@lancaster.ac.uk		
Telephone	01524592981		
Fax			

A5-1. Research reference numbers. *Please give any relevant references for your study:*

Applicant's/organisation's own reference number, e.g. R & D (if available):	
Sponsor's/protocol number:	
Protocol Version:	2.0
Protocol Date:	30/09/2022
Funder's reference number (enter the reference number or state not applicable):	N/A
Project website:	n/a

Additional reference number(s):

Ref.Number	Description	Reference Number

Registration of research studies is encouraged wherever possible. You may be able to register your study through your NHS organisation or a register run by a medical research charity, or publish your protocol through an open access publisher. If you have registered your study please give details in the "Additional reference number(s)" section.

A5-2. Is this application linked to a previous study or another current application?

○ Yes ◉ No

Please give brief details and reference numbers.
n/a

2. OVERVIEW OF THE RESEARCH

To provide all the information required by review bodies and research information systems, we ask a number of specific questions. This section invites you to give an overview using language comprehensible to lay reviewers and members of the public. Please read the guidance notes for advice on this section.

A6-1. Summary of the study. *Please provide a brief summary of the research (maximum 300 words) using language easily understood by lay reviewers and members of the public. Where the research is reviewed by a REC within the UK Health Departments' Research Ethics Service, this summary will be published on the Health Research Authority (HRA) website following the ethical review. Please refer to the question specific guidance for this question.*

People working in mental health settings can experience a type of stress that develops due to being in contact with people who have experienced trauma. This can affect the wellbeing of mental health staff, can increase the number of staff leaving their job, and can lead to poorer care for people in mental health hospitals. Conversely, mental health staff can also experience positive effects and pleasure from helping others in their care. This particular type of stress and pleasure are thought to be linked to one another.

There may be lots of factors affecting the positive and negative aspects of inpatient mental health staff's jobs, but one

factor that has been found to influence this is how staff feel within their work team. In order for teams to learn, change, and evolve there needs to be a shared belief within a team that it is safe to share their thoughts and opinions.

This study aims to investigate the relationship between feeling safe within a team, positive and negative aspects of working in mental health inpatient settings, and whether these things influence staff's intentions to leave their jobs.

The data for this study will be collected using online questionnaires, utilising the software Qualtrics. The link to the questionnaire will be distributed to mental health inpatient staff across a number of mental health hospitals in England. The link to the questionnaire will also be distributed online via social media to enable inpatient mental health staff across the UK to take part in this research.

A6-2. Summary of main issues. *Please summarise the main ethical, legal, or management issues arising from your study and say how you have addressed them.*

Not all studies raise significant issues. Some studies may have straightforward ethical or other issues that can be identified and managed routinely. Others may present significant issues requiring further consideration by a REC, R&D office or other review body (as appropriate to the issue). Studies that present a minimal risk to participants may raise complex organisational or legal issues. You should try to consider all the types of issues that the different reviewers may need to consider.

There may be potential issues with ensuring that participants complete their questionnaires, as inpatient mental health units are often busy and understaffed, it may be that staff do not feel able to prioritise taking part in the research. The researcher is planning to speak to the ward managers of each ward to ask them to ensure that their staff members are able to take 10-15 minutes to complete the questionnaires. The researcher may also visit the inpatient mental health wards involved in the study in person or contact via Microsoft Teams in order to discuss the project, which may aid recruitment. The results of this study will hopefully be beneficial to NHS inpatient mental health units across England and so this may serve as an incentive for staff to participate.

There should be no ethical or legal issues arising from this study. The participants are all NHS staff who can decide whether or not to be part of the study and there will be no negative consequences for staff who choose not to take part. In addition to this, all data will be confidential and staff's responses to the questionnaires will not be seen by anyone other than the researchers.

'Intention to leave' as one of the outcome measures has not been included in participant information prior to taking part in the study (e.g. participant information sheet, recruitment poster). This decision was made as there were concerns that this may create demand characteristics and bias the participants choosing to take part in the study. For example, potential participants may believe that they can only take part if they are intending to leave their job, which could bias the results. Participants can choose to not answer this question, which will lead to them being unable to complete the questionnaire and so their responses will not be included in the study. The participant debrief sheet also includes information about why this outcome measure was included in the study.

3. PURPOSE AND DESIGN OF THE RESEARCH

A7. Select the appropriate methodology description for this research. *Please tick all that apply*:

- ☐ Case series/ case note review
- ☐ Case control
- ☐ Cohort observation
- ☐ Controlled trial without randomisation
- ☑ Cross-sectional study
- ☐ Database analysis
- ☐ Epidemiology
- ☐ Feasibility/ pilot study
- ☐ Laboratory study
- ☐ Metanalysis
- ☐ Qualitative research

☑ Questionnaire, interview or observation study

☐ Randomised controlled trial

☐ Other (please specify)

n/a

A10. What is the principal research question/objective? *Please put this in language comprehensible to a lay person.*

What is the relationship between psychological safety, compassion satisfaction, and compassion fatigue in UK inpatient mental health staff teams, and do these factors predict staff intention to leave?

A11. What are the secondary research questions/objectives if applicable? *Please put this in language comprehensible to a lay person.*

Is psychological safety associated with compassion satisfaction and compassion fatigue?

Are there differences in psychological safety by gender, age, ethnicity, job role, average hours worked, type of ward worked on, or years in the role?

Do gender, age, ethnicity, job role, average hours worked, type of ward worked on, or years in the role influence compassion satisfaction and compassion fatigue scores?

A12. What is the scientific justification for the research? *Please put this in language comprehensible to a lay person.*

In 2019 the Royal College of Nursing reported that the mental health nursing workforce had decreased by 10.6% since 2009, with this being a 25.9% decrease in acute and inpatient care specifically (Savage, 2019). In addition to these findings the Department of Health and Social Care (DHSC) reported that between June 2017 and May 2018 a total of 23,686 mental health staff left the NHS (Campbell, 2018). These figures represent a real issue with the retention of mental health staff within the NHS, which can translate into stretched services and poor continuity of care for service users (Buchan et al., 2017). Thus, investigating current mental health staff's intention to leave and the possible factors affecting this decision may be beneficial for services as it may offer new understanding and may help to inform possible avenues for improving staff wellbeing and retention.

Psychological safety describes how safe individuals feel to take interpersonal risks in a team (e.g. are you able to talk about problems? Are people in the team able to ask one another for help?).

Compassion fatigue describes the occurrence of stress resulting from exposure to a person who has experienced trauma, rather than from the trauma itself.

Compassion satisfaction can be defined as the pleasure that a person experiences as a result of helping others.

Previous research into compassion in mental healthcare staff has highlighted that compassion satisfaction and compassion fatigue appear to be somewhat influenced by workplace and team dynamics, it could be hypothesised that psychological safety as a concept may be linked to compassion satisfaction and compassion fatigue. This is currently an unexplored avenue in the research and could offer new ways of improving compassion in mental health staff teams and reduce the numbers of staff leaving, by way of improving psychological safety.

Previous research into psychological safety has focused on physical healthcare staff teams and there is a lack of literature investigating psychological safety in mental health staff teams. As such, this represents a new avenue of research and a gap in the current literature.

As doctoral level student research, this study will provide experience in conducting, analysing and disseminating research within the NHS. Research is one of the core competencies of a clinical psychologist and as such this study will offer evidence of the researcher's ability to conduct research.

A13. Please summarise your design and methodology. *It should be clear exactly what will happen to the research participant, how many times and in what order. Please complete this section in language comprehensible to the lay person. Do not simply reproduce or refer to the protocol. Further guidance is available in the guidance notes.*

In previous research, greater intention to leave has been found to be linked to higher compassion fatigue scores, and studies have found that higher levels of compassion satisfaction may reduce the negative effects of compassion fatigue. Hence, it is hypothesised that higher levels of compassion fatigue will predict intention to leave but that

compassion satisfaction scores will moderate this relationship. The null hypothesis is that neither compassion satisfaction nor compassion fatigue will be related to participants' intention to leave.

Previous studies have found that feeling supported by ones' colleagues and being part of a cohesive team was found to increase compassion satisfaction, and/or protect staff from developing compassion fatigue. As such, it is hypothesised that higher levels of psychological safety will be associated with higher levels of compassion satisfaction and lower levels of compassion fatigue. The null hypothesis is that psychological safety scores will have no effect on compassion fatigue or compassion satisfaction scores.

The study will be a quantitative study, this fits with the research question as it aims to understand the relationship between the concepts of psychological safety, compassion satisfaction, and compassion fatigue by systematically measuring these variables and testing the stated hypotheses. The study also aims to assess whether these concepts can statistically predict staff members' intention to leave their job. In addition to this, the measures proposed to assess psychological safety, compassion satisfaction, and compassion fatigue have been found to be highly valid, reliable, and have been used in similar populations in many previous studies. It is the researcher's hope that the findings of this study will be generalisable to all inpatient mental health settings across the UK.

This will be a cross-sectional study, with a within-subjects design. This means that the data is collected from the participants at a specific point in time and there is no manipulation of the variables being explored. Within-subjects refers the the fact that all participants will be required to complete the same questionnaires in the same way, meaning that each participant's experience of the study is identical. Previous similar studies have also utilised a cross-sectional design, many of which used the same measures. However, there are very few studies that specifically looked at these concepts in inpatient mental health staff, and to the researcher's knowledge there are no studies to date that link psychological safety, with compassion satisfaction and compassion fatigue in this population.

Once ethical approval has been obtained the researcher will contact the Research and Development teams in several Trusts in which the researcher, Chief Investigator, and field supervisors have contacts. Once Trust approval is obtained, the researcher will speak with hospital/ward managers to ask them to disseminate emails with the research poster and a link to online survey. At this time, the researcher will also distribute the research poster and a link to the survey via social media, in professional groups on Facebook, Instagram and Reddit, and via Twitter. Once potential participants have either received an email or seen the recruitment poster on social media, they can click on the link to be directed to take part in the study. After clicking on the link participants will be shown the participant information sheet (PIS) and will be asked to confirm that they have read and understood this and agree to take part in the study, by electronically giving their informed consent. After consent is given, all participants will complete the same online questionnaires in the same order. When participants have completed all of the questionnaires, they will be directed to the debrief page.

The data collection is expected to be completed by the end of January 2023. Data analysis and interpretation will be completed by then end of February 2023, and the final report will be completed by June 2023.

As data is collected via an online survey, in which all participants receive the same questionnaires, in the same order, with the same set of instructions, this should remove most of the researcher effects. Participants may be influenced by situational variables, especially if completing the survey at work, where staff are often busy and the environment hectic. The researcher plans to reduce the effect of this by requesting that hospital/ward managers give staff who would like to take part in the study adequate time to complete this (10-15 minutes), people also have the option to complete the study at home on their own computer or smartphone if they wish.

The sample size required for this study is 179, based on the requirements for the planned statistical analysis and calculated using the software G*Power. Participants will be selected using opportunity sampling and can choose to take part in the study either via social media, or through an invite sent to their work email. Although the researchers will not be directly identifying participants, by putting the recruitment poster in professional groups on social media and approaching ward managers in inpatient mental health settings, this ensures that the study is seen by potential participants who would meet the eligibility criteria.

A14-1. In which aspects of the research process have you actively involved, or will you involve, patients, service users, and/or their carers, or members of the public?

- [ ] Design of the research
- [ ] Management of the research
- [ ] Undertaking the research
- [ ] Analysis of results
- [x] Dissemination of findings

☐ None of the above

Give details of involvement, or if none please justify the absence of involvement.
The participants of the study are NHS inpatient mental health staff and the questionnaires relate to their experiences within the workplace. As such it was not necessary to include patient or public involvement in the design, management, undertaking or analysis of the research. It is expected that the findings of this study will most likely be of interest to other inpatient mental health staff, service leads, and stakeholders. However, the hope is that this will open a new avenue for research into this area, with a future goal being improvements in mental health inpatient care. As such, patient and public involvement will be sought in order to disseminate the findings appropriately and in a language that is accessible. The researcher envisions that people with experience of being in mental health inpatient settings and their families or careers may be interested in this research and so this will be the population targeted for involvement.

4. RISKS AND ETHICAL ISSUES

RESEARCH PARTICIPANTS

A15. What is the sample group or cohort to be studied in this research?

Select all that apply:

☐ Blood
☐ Cancer
☐ Cardiovascular
☐ Congenital Disorders
☐ Dementias and Neurodegenerative Diseases
☐ Diabetes
☐ Ear
☐ Eye
☑ Generic Health Relevance
☐ Infection
☐ Inflammatory and Immune System
☐ Injuries and Accidents
☑ Mental Health
☐ Metabolic and Endocrine
☐ Musculoskeletal
☐ Neurological
☐ Oral and Gastrointestinal
☐ Paediatrics
☐ Renal and Urogenital
☐ Reproductive Health and Childbirth
☐ Respiratory
☐ Skin
☐ Stroke

Gender: Male and female participants

Lower age limit: 18 Years

Upper age limit: 99 Years

A17-1. Please list the principal inclusion criteria (list the most important, max 5000 characters).

Currently working in a clinical role, in an NHS inpatient mental health setting (either on an acute ward, rehabilitation ward, or a psychiatric intensive care unit). Currently is defined as regularly working in this setting (at least once per week). Participants will also have to have been working in this setting for a minimum of three months at the time of partaking in the study, this ensures that they will have had adequate experience of working as part of a multi-disciplinary team in this setting. Bank or agency members of staff will not be automatically excluded from the study and can take part if they meet the inclusion criteria.

A17-2. Please list the principal exclusion criteria (list the most important, max 5000 characters).

Anyone who does not currently and regularly work in a clinical role, in an NHS inpatient mental health setting, where regularly is defined as at least once per week. Anyone who has not been working in this setting for at least three months at the point of partaking in the study. Anyone whose work base is not an NHS inpatient mental health setting, for example care coordinators may visit clients in an inpatient setting but would not be appropriate to take part in the study, as their work is not entirely based in an inpatient setting.
Individuals under the age of 18 will not be able to take part, as people under the age of 18 cannot be employed in inpatient mental health settings in the NHS.

RESEARCH PROCEDURES, RISKS AND BENEFITS

A18. Give details of all non-clinical intervention(s) or procedure(s) that will be received by participants as part of the research protocol. *These include seeking consent, interviews, non-clinical observations and use of questionnaires.*

Please complete the columns for each intervention/procedure as follows:

1. Total number of interventions/procedures to be received by each participant as part of the research protocol.
2. If this intervention/procedure would be routinely given to participants as part of their care outside the research, how many of the total would be routine?
3. Average time taken per intervention/procedure (minutes, hours or days)
4. Details of who will conduct the intervention/procedure, and where it will take place.

Intervention or procedure	1	2	3	4
Asking participants to read the participant information sheet and consent form and to give informed consent.	1		5 minutes	This information and the consent form will be accessed online before commencing the online questionnaires. This will be accessed via a link to Qualtrics. All of the information will have been input by Aimee Hogan (student researcher). The participants will choose when and where they decide to complete this.
Participants to complete demographic questionnaire.	1		3 minutes	This questionnaire will be conducted online and will be accessed via a link to Qualtrics. The questionnaires will have been input by Aimee Hogan (student researcher). The participants will choose when and where they decide to complete this.
Participants to complete the ProQOL-21 questionnaire. This is the measure of compassion satisfaction and compassion fatigue.	1		5 minutes	This questionnaire will be conducted online and will be accessed via a link to Qualtrics. The questionnaires will have been input by Aimee Hogan (student researcher). The participants will choose when and where they decide to complete this.
Participants to complete the Team Psychological Safety Scale questionnaire. This is the measure of psychological safety.	1		5 minutes	This questionnaire will be conducted online and will be accessed via a link to Qualtrics. The questionnaires will have been input by Aimee Hogan (student researcher). The participants will choose when and where they decide to complete this.
Participants to answer the question measuring intention to leave.	1		1 minute	This question will be the final question of the online questionnaire and will be accessed via a link to Qualtrics. The questionnaire will have been input by Aimee Hogan (student researcher). The participants will choose when and where they decide to complete

			this.
Participants to read the participant debrief sheet, giving further details about the study and contact details for the researcher.	1	1 minute	This debrief form will be accessed online at the end of the survey. This will be accessed via a link to Qualtrics. All of the information will have been input by Aimee Hogan (student researcher). The participants will choose when and where they decide to complete this.

A21. How long do you expect each participant to be in the study in total?

Participants will only be involved directly in the study when completing the online questionnaires. The maximum length of time this should take is 30 minutes but it is most likely to take 10-15 minutes to complete.

Findings from the study will be fed back to the services who have been involved in the study, but this will not require participants to be in direct contact with the research team.

A22. What are the potential risks and burdens for research participants and how will you minimise them?

For all studies, describe any potential adverse effects, pain, discomfort, distress, intrusion, inconvenience or changes to lifestyle. Only describe risks or burdens that could occur as a result of participation in the research. Say what steps would be taken to minimise risks and burdens as far as possible.

Some of the questions asked in the ProQOL questionnaire may potentially cause some discomfort or distress for participants, as they may highlight difficult feelings that participants may be experiencing in relation to their work. However, it is important to note that the questionnaires are being utilised to capture participants' current thoughts and feelings about their work, rather than eliciting these feelings directly.
It is not possible to remove questions that may cause discomfort as they are part of a validated instrument and such questions are required in order to assess the participants levels of compassion fatigue.
To minimise the risk of potential harm to participants, the nature of the topic and the questions will be clearly communicated in the participant information sheet. This will enable participants to make an informed choice as to whether or not to agree to participate in the study.

The researchers email addresses will be provided in the patient information sheet and debrief sheet, to allow participants to ask questions or raise concerns prior to taking part or after taking part in the study.

Participants can contact the researchers up to two weeks after they have taken part in the study, if they wish for their data to be withdrawn from the study. They will have to share their participant identifier (given by a random number generator) to enable the researchers to do this, as no personal data such as names, birthdates, or email addresses will be known by the researchers.

A23. Will interviews/ questionnaires or group discussions include topics that might be sensitive, embarrassing or upsetting, or is it possible that criminal or other disclosures requiring action could occur during the study?

(●) Yes ( ) No

If Yes, please give details of procedures in place to deal with these issues:

Some of the questions may highlight participants' existing difficult feelings in relation to their work. The responses to the questions are all in Likert format and so there can be no unexpected disclosures during the study.
As participants will be completing the questionnaires online, information about who to contact should they feel distressed or concerned about their responses to any of the questions will be included. Participants will be directed to speak to their line manager or supervisor in the first instance, they may also wish to speak to the occupational health department at their Trust, or to their GP or their local IAPT service if they feel that the impact of their work is affecting their own mental or emotional wellbeing.

A24. What is the potential for benefit to research participants?

There is no direct, intentional benefit for participants taking part in this study however, they may feel that they have had the opportunity to reflect on and consider the impact of their work, in a way that they may not regularly do. This may be in the form of participants realising that they experience lots of positives in their work or it may be that through participating in this study participants realise that they may need to seek further help and support for their feelings about their work. This may enable participants to realise that they are struggling due to the emotional effects of their work and may lead to them receiving support from their line manager, supervisor, or occupational health, that they

were not accessing prior to taking part.

A26. What are the potential risks for the researchers themselves? *(if any)*

The researcher will not have any direct contact with the participants. Participants answers to the questionnaires are in the form of Likert responses and so there is no option for further disclosure during the questionnaire. Participants do however have access to the researchers' email addresses, which participants may use to contact the researchers if they are experiencing distress. The researcher has experience in assessing and managing risk and can utilise regular supervision for support when required.

RECRUITMENT AND INFORMED CONSENT

In this section we ask you to describe the recruitment procedures for the study. Please give separate details for different study groups where appropriate.

A27-1. How will potential participants, records or samples be identified? Who will carry this out and what resources will be used?*For example, identification may involve a disease register, computerised search of social care or GP records, or review of medical records. Indicate whether this will be done by the direct care team or by researchers acting under arrangements with the responsible care organisation(s).*

Potential participants are planned to be recruited directly through work and via social media. The researcher will contact the service managers and research and development departments of mental health hospitals across several NHS Trusts based in [redacted], [redacted], and [redacted] to request that the link to the online questionnaire is distributed to all of the inpatient mental health staff in each Trust.

Potential participants recruited via social media will be identified by posting an advert for the research in relevant professional groups. These groups will be sought out by the researcher and the only resources required for this are access to the internet and to Facebook, Twitter, Instagram, and Reddit. Participants will be informed of the inclusion and exclusion criteria before taking part to ensure that only participants currently working in a clinical role, in an NHS inpatient mental health setting are included.

The initial page of the study questionnaire will include a self-certification question checking that potential participants are currently working in a clinical role, in an NHS inpatient setting. If they do not meet these criteria, they will not be able to progress to the study.

A27-2. Will the identification of potential participants involve reviewing or screening the identifiable personal information of patients, service users or any other person?

○ Yes ◉ No

Please give details below:
Participation will take place online and although demographic data will be collected (age, gender, job role, ethnicity, average working hours per week, type of ward worked on, and length of time working in an inpatient setting), participants will not be reviewed or screened using identifiable personal information. The researchers will not have access to the identifiable personal information of participants prior to participants taking part in the study.

A28. Will any participants be recruited by publicity through posters, leaflets, adverts or websites?

◉ Yes ○ No

If Yes, please give details of how and where publicity will be conducted, and enclose copy of all advertising material (with version numbers and dates).
To ensure that there will be an adequate number of participants a link to take part in the online questionnaire will be distributed amongst relevant Facebook groups, Instagram accounts and professional groups on Twitter and Reddit. For example, there are Facebook groups dedicated to people who work in psychology or mental health and many mental health professionals use Twitter and Instagram for networking and to share information about their field of work.

A29. How and by whom will potential participants first be approached?

Participants can be recruited both directly through work and through social media. Several NHS trusts in the [redacted] have been selected for potential participants to be contacted and given the link to complete the online questionnaire through their work email. To raise awareness of the study and increase the likelihood of the questionnaires being completed, the researcher plans to speak with hospital and ward managers about the purpose of the study. This may also involve the researcher meeting with ward teams either in person or via Microsoft Teams. During these meetings the researcher can discuss the study and answer any questions potential participants may have.

Potential participants recruited through social media will first see an advert with a brief description of the study and a link to follow to participate in the study. This advert will be posted by the researcher, from their Facebook, Instagram, and Twitter accounts.

In both cases participants will be approached online; either via email or social media, where the email or social media post is created by the researcher. It may be that the email is disseminated to potential participants by the Trusts research and development team, or by service leads, service managers, or ward managers.

A30-1. Will you obtain informed consent from or on behalf of research participants?

(●) Yes ( ) No

If you will be obtaining consent from adult participants, please give details of who will take consent and how it will be done, with details of any steps to provide information (a written information sheet, videos, or interactive material). Arrangements for adults unable to consent for themselves should be described separately in Part B Section 6, and for children in Part B Section 7.

If you plan to seek informed consent from vulnerable groups, say how you will ensure that consent is voluntary and fully informed.

Participants will be given an online participant information sheet to read before taking part in the study. Participants will then have to complete an online consent form, where they will have to confirm their informed consent before filling in the online questionnaires.

Ward managers and the psychology team working in the hospitals may disseminate the recruitment email and link to their staff, but it will be explicit that participation is voluntary and there will be no negative consequences to choosing not to participate. It will also be made clear to potential participants that no-one other than the researchers will have access to their data and so their management or colleagues will not be able to see their responses to the questionnaire.

If you are not obtaining consent, please explain why not.

n/a

Please enclose a copy of the information sheet(s) and consent form(s).

A30-2. Will you record informed consent (or advice from consultees) in writing?

( ) Yes (●) No

If No, how will it be recorded?

Participants will have to 'tick' to confirm that they have read the information provided and given their informed consent to take part in the study before they can access the online questionnaire.

A31. How long will you allow potential participants to decide whether or not to take part?

Potential participants have until the online questionnaire is closed to decide whether or not to take part. The length of time this is will depend on when they first received the email or saw the online advert to take part in the study. The researchers' contact details will be included in the emails and online adverts, giving potential participants the opportunity to ask questions before deciding whether or not to take part.

A33-1. What arrangements have been made for persons who might not adequately understand verbal explanations or written information given in English, or who have special communication needs? *(e.g. translation, use of interpreters)*

Potential participants will all be currently employed NHS staff, thus it is not expected that any of the participants will not be able to adequately understand verbal or written English.

A35. What steps would you take if a participant, who has given informed consent, loses capacity to consent during the study? *Tick one option only.*

- ○ The participant and all identifiable data or tissue collected would be withdrawn from the study. Data or tissue which is not identifiable to the research team may be retained.
- ○ The participant would be withdrawn from the study. Identifiable data or tissue already collected with consent would be retained and used in the study. No further data or tissue would be collected or any other research procedures carried out on or in relation to the participant.
- ○ The participant would continue to be included in the study.
- ○ Not applicable – informed consent will not be sought from any participants in this research.
- ◉ Not applicable – it is not practicable for the research team to monitor capacity and continued capacity will be assumed.

Further details:

As participation in this study is in the form of completing an online questionnaire at one point in time, with no further contact with the researchers, it is not practicable for the research team to monitor ongoing capacity. In addition to this, this study utilises a cross-sectional design, hence all participants will be capacitous when the data is collected and this would not change if a participant were to lose capacity after participating in the research.

CONFIDENTIALITY

In this section, personal data means any data relating to a participant who could potentially be identified. It includes pseudonymised data capable of being linked to a participant through a unique code number.

Storage and use of personal data during the study

A36. Will you be undertaking any of the following activities at any stage (including in the identification of potential participants)?*(Tick as appropriate)*

- ☐ Access to medical records by those outside the direct healthcare team
- ☐ Access to social care records by those outside the direct social care team
- ☐ Electronic transfer by magnetic or optical media, email or computer networks
- ☐ Sharing of personal data with other organisations
- ☐ Export of personal data outside the EEA
- ☐ Use of personal addresses, postcodes, faxes, emails or telephone numbers
- ☐ Publication of direct quotations from respondents
- ☐ Publication of data that might allow identification of individuals
- ☐ Use of audio/visual recording devices
- ☑ Storage of personal data on any of the following:
  - ☐ Manual files (includes paper or film)
  - ☑ NHS computers
  - ☐ Social Care Service computers
  - ☐ Home or other personal computers
  - ☑ University computers
  - ☐ Private company computers

☐ Laptop computers

Further details:
The researcher will be responsible for the data whilst the study is taking place and as such the data will be analysed using their NHS laptop. The data itself however will be stored securely in a file on Lancaster University's server, not directly on the NHS laptop. As the questionnaires for the study will be completed online using Qualtrics, all of the data will be electronic.

A37. Please describe the physical security arrangements for storage of personal data during the study?

All information will be collected online through Qualtrics. As per Lancaster University guidance, the data will be stored electronically in a secure cloud storage system on Lancaster University's server, rather than directly on the researcher's NHS laptop. This means that the data will not need to be encrypted as the server is secure. The data will however be password protected, as an additional security measure. The researcher and Chief Investigator will be the only people who can access this data during the study.

A38. How will you ensure the confidentiality of personal data?*Please provide a general statement of the policy and procedures for ensuring confidentiality, e.g. anonymisation or pseudonymisation of data.*

All of the data collected during the study will be kept confidential. Personal data such as participants' job role, age, and gender will be pseudonymised using unique participant identifier codes, these will be generated by Qualtrics using a random number generator.

A40. Who will have access to participants' personal data during the study? *Where access is by individuals outside the direct care team, please justify and say whether consent will be sought.*

The researcher and the chief investigator are the only people who will have access to the participants' data during the study. This is explained to the participants in the participant information sheet.

Storage and use of data after the end of the study

A41. Where will the data generated by the study be analysed and by whom?

The data will be stored securely in a password protected file space on the University server, which only the researcher and chief investigator have access to. When the data is being analysed, this will be conducted on the researcher's NHS laptop on the University campus and will only be saved into the secure file space on the University server.
The processing of participants' data will adhere to all laws related to the UK General Data Protection Regulation (GDPR) and the Data Protection Act (2018).

A42. Who will have control of and act as the custodian for the data generated by the study?

	Title	Forename/Initials	Surname
	Dr	James	Kelly
Post	Lecturer in Clinical Psychology		
Qualifications	BSc, MSc, D.Clin.Psy		
Work Address	Health Innovation One		
	Sir John Fisher Drive		
	Lancaster University		
Post Code	LA1 4AT		
Work Email	j.a.kelly@lancaster.ac.uk		
Work Telephone	01524 593535		
Fax			

A43. How long will personal data be stored or accessed after the study has ended?

- ○ Less than 3 months
- ◉ 3 – 6 months
- ○ 6 – 12 months
- ○ 12 months – 3 years
- ○ Over 3 years

A44. For how long will you store research data generated by the study?

Years: 10
Months: 0

A45. Please give details of the long term arrangements for storage of research data after the study has ended.*Say where data will be stored, who will have access and the arrangements to ensure security.*

All of the data stored will be pseudonymised. After the study has ended, the research data will be shared securely with the Research Coordinator of the Doctorate in Clinical Psychology via OneDrive. The data will then be saved on a password protected file space on the University server for long-term storage.

INCENTIVES AND PAYMENTS

A46. Will research participants receive any payments, reimbursement of expenses or any other benefits or incentives for taking part in this research?

- ○ Yes ◉ No

A47. Will individual researchers receive any personal payment over and above normal salary, or any other benefits or incentives, for taking part in this research?

- ○ Yes ◉ No

A48. Does the Chief Investigator or any other investigator/collaborator have any direct personal involvement (e.g. financial, share holding, personal relationship etc.) in the organisations sponsoring or funding the research that may give rise to a possible conflict of interest?

- ○ Yes ◉ No

NOTIFICATION OF OTHER PROFESSIONALS

A49-1. Will you inform the participants' General Practitioners (and/or any other health or care professional responsible for their care) that they are taking part in the study?

- ○ Yes ◉ No

If Yes, please enclose a copy of the information sheet/letter for the GP/health professional with a version number and date.

PUBLICATION AND DISSEMINATION

A50-1. Will the research be registered on a public database?

○ Yes ◉ No

Please give details, or justify if not registering the research.
The researcher is not aware of any suitable database to register this work on.

Registration of research studies is encouraged wherever possible.
You may be able to register your study through your NHS organisation or a register run by a medical research charity, or publish your protocol through an open access publisher. If you are aware of a suitable register or other method of publication, please give details. If not, you may indicate that no suitable register exists. Please ensure that you have entered registry reference number(s) in question A5-1.

A51. How do you intend to report and disseminate the results of the study?*Tick as appropriate:*

☑ Peer reviewed scientific journals
☑ Internal report
☐ Conference presentation
☐ Publication on website
☐ Other publication
☐ Submission to regulatory authorities
☐ Access to raw data and right to publish freely by all investigators in study or by Independent Steering Committee on behalf of all investigators
☐ No plans to report or disseminate the results
☑ Other (please specify)

Presentation of the study to be given at the University's 'thesis presentation day'.

Results will be shared in the researcher's thesis that will contribute towards their DClinPsy qualification and will be publicly available.

A52. If you will be using identifiable personal data, how will you ensure that anonymity will be maintained when publishing the results?

This study will collect personal data, such as age, gender, job role, and years in role and as such the data will be pseudonymised. However, the study will not collect any clear identifiable personal data such as names, email address, or birthdates. Results will be published in aggregate form, and as such will be anonymous.

A53. How and when will you inform participants of the study results?

If there will be no arrangements in place to inform participants please justify this.
For participants who accessed the study via a link sent to their work emails, I plan to send an overview of the findings to all hospital/ward managers who agreed to send the survey out to their staff. These managers can then disseminate this to their teams. For participants who accessed the study via social media, and any staff who did not receive the findings from their manager, there is information in the participant debrief sheet about how to contact the researchers to request the study results.

5. Scientific and Statistical Review

A54-1. How has the scientific quality of the research been assessed?*Tick as appropriate:*

☐ Independent external review
☐ Review within a company

- [ ] Review within a multi−centre research group
- [x] Review within the Chief Investigator's institution or host organisation
- [x] Review within the research team
- [x] Review by educational supervisor
- [ ] Other

Justify and describe the review process and outcome. If the review has been undertaken but not seen by the researcher, give details of the body which has undertaken the review:
A draft of the protocol, this IRAS form, and the accompanying participant documents has been reviewed by the Chief Investigator (who is also the researcher's educational supervisor). Following this, the protocol, draft IRAS form, and the accompanying participant documents have been reviewed by Lancaster University Sponsorship.

For all studies except non-doctoral student research, please enclose a copy of any available scientific critique reports, together with any related correspondence.

For non-doctoral student research, please enclose a copy of the assessment from your educational supervisor/ institution.

A56. How have the statistical aspects of the research been reviewed? *Tick as appropriate:*

- [ ] Review by independent statistician commissioned by funder or sponsor
- [ ] Other review by independent statistician
- [ ] Review by company statistician
- [ ] Review by a statistician within the Chief Investigator's institution
- [ ] Review by a statistician within the research team or multi−centre group
- [x] Review by educational supervisor
- [ ] Other review by individual with relevant statistical expertise
- [ ] No review necessary as only frequencies and associations will be assessed – details of statistical input not required

In all cases please give details below of the individual responsible for reviewing the statistical aspects. If advice has been provided in confidence, give details of the department and institution concerned.

	Title	Forename/Initials	Surname
	Dr	James	Kelly
Department	Doctorate in Clinical Psychology		
Institution	Lancaster University		
Work Address	Health Innovation One		
	Sir John Fisher Drive		
	Lancaster University		
Post Code	LA1 4AT		
Telephone	01524 593535		
Fax			
Mobile			
E-mail	j.a.kelly@lancaster.ac.uk		

Please enclose a copy of any available comments or reports from a statistician.

A57. What is the primary outcome measure for the study?

The primary outcome measure for this study is binary, being whether a participant does or does not intend to leave their job within the next year.

A58. What are the secondary outcome measures?*(if any)*

Scores on the measures for psychological safety, compassion satisfaction, and compassion fatigue.

A59. What is the sample size for the research? *How many participants/samples/data records do you plan to study in total? If there is more than one group, please give further details below.*

Total UK sample size: 179

Total international sample size (including UK): 179

Total in European Economic Area: 0

Further details:
n/a

A60. How was the sample size decided upon? *If a formal sample size calculation was used, indicate how this was done, giving sufficient information to justify and reproduce the calculation.*

The sample size was based on a power calculation for a two-tailed logistic regression analysis where power is set at 80% and the confidence interval is 95% (significance level 5%). This was completed using the software G*Power.

A61-1. Will participants be allocated to groups at random?

○ Yes ◉ No

A62. Please describe the methods of analysis (statistical or other appropriate methods, e.g. for qualitative research) by which the data will be evaluated to meet the study objectives.

Data will first be analysed using descriptive statistics to explore means and trends. Descriptive statistics are likely to be summarised in table form in the final write-up for ease of reading.

Binary logistic regression will be utilised to predict intention to leave based on compassion fatigue and compassion satisfaction scores. Intention to leave will be the dependent variable and will be dichotomous in nature (yes or no). Compassion fatigue and compassion satisfaction will be the independent variables, or covariates. Further demographic and work variables may be included in the regression model as covariates in order to control for other influences on the outcome variables and to develop a model that best predicts intention to leave.

A one-way MANOVA will be conducted to investigate the relationship between psychological safety and compassion fatigue and compassion satisfaction, where the dependent variables are compassion satisfaction and compassion fatigue and the independent variable is psychological safety.

To analyse the demographic data separate MANOVAs will be conducted with compassion fatigue, compassion satisfaction, and psychological safety as dependent variables and gender, job role, years in profession, and years in current role as dependent variables. Post-hoc tests (e.g. Tukey's) will be applied to determine the difference of means for compassion satisfaction, compassion fatigue, and psychological safety.

It is not expected that there will be any missing data as participants will have to answer all of the questions in the online survey before moving onto the next page and will have to have completed all the questions to finish the survey. Participants are free to leave the survey at any point without completing, but in this case, none of their data will be recorded.

6. MANAGEMENT OF THE RESEARCH

A63. Other key investigators/collaborators. *Please include all grant co−applicants, protocol co−authors and other key members of the Chief Investigator's team, including non-doctoral student researchers.*

	Title Forename/Initials Surname
	[redacted]
Post	Consultant Counselling Psychologist
Qualifications	Doctorate in Counselling Psychology
Employer	[redacted]
Work Address	[redacted]
	[redacted]
	[redacted]
Post Code	[redacted]
Telephone	[redacted]
Fax	
Mobile	
Work Email	[redacted]

	Title Forename/Initials Surname
	[redacted]
Post	Principal Clinical Psychologist
Qualifications	BSc, D.Clin.Psy
Employer	[redacted]
Work Address	[redacted]
	[redacted]
	[redacted]
Post Code	[redacted]
Telephone	[redacted]
Fax	
Mobile	
Work Email	[redacted]

A64. Details of research sponsor(s)

A64-1. Sponsor

Lead Sponsor

Status:
- ○ NHS or HSC care organisation
- ◉ Academic
- ○ Pharmaceutical industry
- ○ Medical device industry
- ○ Local Authority
- ○ Other social care provider (including voluntary sector or private organisation)
- ○ Other

Commercial status: Non-Commercial

If Other, please specify:

Contact person

Name of organisation	Lancaster University
Given name	Becky
Family name	Gordon
Address	Lancaster University
Town/city	Lancaster
Post code	LA1 4YT
Country	United Kingdom
Telephone	01524592981
Fax	
E-mail	sponsorship@lancaster.ac.uk

Legal representative for clinical investigation of medical device (studies involving Northern Ireland only)
Clinical Investigations of Medical Devices that take place in Northern Ireland must have a legal representative of the sponsor that is based in Northern Ireland or the EU

Contact person

Name of organisation	
Given name	
Family name	
Address	
Town/city	
Post code	
Country	
Telephone	
Fax	
E-mail	

A65. Has external funding for the research been secured?

Please tick at least one check box.

- [ ] Funding secured from one or more funders
- [ ] External funding application to one or more funders in progress
- [x] No application for external funding will be made

What type of research project is this?

- ( ) Standalone project
- ( ) Project that is part of a programme grant
- ( ) Project that is part of a Centre grant
- ( ) Project that is part of a fellowship/ personal award/ research training award
- (•) Other

Other – please state:
Project that is part of a Doctorate programme

A66. Has responsibility for any specific research activities or procedures been delegated to a subcontractor (other than a co-sponsor listed in A64-1) ? *Please give details of subcontractors if applicable.*

○ Yes ◉ No

A67. Has this or a similar application been previously rejected by a Research Ethics Committee in the UK or another country?

○ Yes ◉ No

Please provide a copy of the unfavourable opinion letter(s). You should explain in your answer to question A6-2 how the reasons for the unfavourable opinion have been addressed in this application.

A68-1. Give details of the lead NHS R&D contact for this research:

	Title	Forename/Initials	Surname
	[redacted]	[redacted]	[redacted]
Organisation	[redacted]		
	[redacted]		
	[redacted]		
	[redacted]		
Post Code	[redacted]		
Work Email	[redacted]		
Telephone	[redacted]		
Fax			
Mobile			

Details can be obtained from the NHS R&D Forum website: http://www.rdforum.nhs.uk

A69-1. How long do you expect the study to last in the UK?

Planned start date: 19/12/2022
Planned end date: 30/06/2023
Total duration:
Years: 0 Months: 6 Days: 12

A71-1. Is this study?

○ Single centre
◉ Multicentre

A71-2. Where will the research take place? *(Tick as appropriate)*

☑ England
☐ Scotland
☐ Wales
☐ Northern Ireland

☐ Other countries in European Economic Area

Total UK sites in study 4

Does this trial involve countries outside the EU?

○ Yes ◉ No

A72. Which organisations in the UK will host the research? *Please indicate the type of organisation by ticking the box and give approximate numbers if known:*

☑ NHS organisations in England	4
☐ NHS organisations in Wales	
☐ NHS organisations in Scotland	
☐ HSC organisations in Northern Ireland	
☐ GP practices in England	
☐ GP practices in Wales	
☐ GP practices in Scotland	
☐ GP practices in Northern Ireland	
☐ Joint health and social care agencies (eg community mental health teams)	
☐ Local authorities	
☐ Phase 1 trial units	
☐ Prison establishments	
☐ Probation areas	
☐ Independent (private or voluntary sector) organisations	
☐ Educational establishments	
☐ Independent research units	
☐ Other (give details)	

Total UK sites in study: 4

A73-1. Will potential participants be identified through any organisations other than the research sites listed above?

○ Yes ◉ No

A74. What arrangements are in place for monitoring and auditing the conduct of the research?

The Chief Investigator will also have access to the data and analyses throughout the study. The researcher will receive monthly supervision with the Chief Investigator, covering recruitment, data collection, analysis, and the write-up of the study. The Chief Investigator will also read drafts of the write-up at several points throughout the study.

A76. Insurance/ indemnity to meet potential legal liabilities

***Note:* in this question to NHS indemnity schemes include equivalent schemes provided by Health and Social Care (HSC) in Northern Ireland**

A76-1. What arrangements will be made for insurance and/or indemnity to meet the potential legal liability of the

sponsor(s) for harm to participants arising from the management of the research? *Please tick box(es) as applicable.*

Note: Where a NHS organisation has agreed to act as sponsor or co-sponsor, indemnity is provided through NHS schemes. Indicate if this applies (there is no need to provide documentary evidence). For all other sponsors, please describe the arrangements and provide evidence.

☐ NHS indemnity scheme will apply (NHS sponsors only)

☑ Other insurance or indemnity arrangements will apply (give details below)

Lancaster University legal liability cover will apply

Please enclose a copy of relevant documents.

A76-2. What arrangements will be made for insurance and/ or indemnity to meet the potential legal liability of the sponsor(s) or employer(s) for harm to participants arising from the design of the research? *Please tick box(es) as applicable.*

Note: Where researchers with substantive NHS employment contracts have designed the research, indemnity is provided through NHS schemes. Indicate if this applies (there is no need to provide documentary evidence). For other protocol authors (e.g. company employees, university members), please describe the arrangements and provide evidence.

☐ NHS indemnity scheme will apply (protocol authors with NHS contracts only)

☑ Other insurance or indemnity arrangements will apply (give details below)

Lancaster University legal liability cover will apply

Please enclose a copy of relevant documents.

A76-3. What arrangements will be made for insurance and/ or indemnity to meet the potential legal liability of investigators/collaborators arising from harm to participants in the conduct of the research?

Note: Where the participants are NHS patients, indemnity is provided through the NHS schemes or through professional indemnity. Indicate if this applies to the whole study (there is no need to provide documentary evidence). Where non-NHS sites are to be included in the research, including private practices, please describe the arrangements which will be made at these sites and provide evidence.

☐ NHS indemnity scheme or professional indemnity will apply (participants recruited at NHS sites only)

☑ Research includes non-NHS sites (give details of insurance/ indemnity arrangements for these sites below)

Lancaster University legal liability cover will apply

Please enclose a copy of relevant documents.

A78. Could the research lead to the development of a new product/process or the generation of intellectual property?

○ Yes ◉ No ○ Not sure

PART C: Overview of research sites

Please enter details of the host organisations (Local Authority, NHS or other) in the UK that will be responsible for the research sites. *For further information please refer to guidance.*

Investigator identifier	Research site	Investigator Name

IN2

- (●) NHS/HSC Site
- ( ) Non-NHS/HSC Site

Organisation name [redacted]
Address [redacted]
Post Code [redacted]
Country

Forename	Aimee
Middle name	Elisha
Family name	Hogan
Email	a.hogan@lancaster.ac.uk
Qualification (MD...)	BSc, MSc
Country	United Kingdom

IN3

- (●) NHS/HSC Site
- ( ) Non-NHS/HSC Site

Organisation name [redacted]
Address [redacted]
Post Code [redacted]
Country

Forename	Aimee
Middle name	Elisha
Family name	Hogan
Email	a.hogan@lancaster.ac.uk
Qualification (MD...)	BSc, MSc
Country	United Kingdom

Ymchwil Iechyd a Gofal Cymru
Health and Care Research Wales

NHS
Health Research Authority

Dr James Kelly
Health Innovation One
Sir John Fisher Drive
Lancaster University
LA1 4ATN/A

Email: approvals@hra.nhs.uk

20 January 2023

Dear Dr Kelly

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

Study title:	**Psychological Safety, Compassion Satisfaction, Compassion Fatigue, and Intention to Leave in Inpatient Mental Health Teams**
IRAS project ID:	**306540**
REC reference:	**22/HRA/5136**
Sponsor	**Lancaster University**

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

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

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

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

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

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

What are my notification responsibilities during the study?

The *"After HRA Approval – guidance for sponsors and investigators"* document on the HRA website gives detailed guidance on reporting expectations for studies with HRA and HCRW Approval, including:

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

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

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

Your IRAS project ID is **306540**. Please quote this on all correspondence.

Yours sincerely,

Michelle Ahmed

Approvals Specialist

Email: approvals@hra.nhs.uk

Copy to: *Ms Becky Gordon*

List of Documents

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

Document	*Version*	*Date*
Copies of materials calling attention of potential participants to the research [Example Recruitment Email - Study Advert]	3	28 November 2022
Copies of materials calling attention of potential participants to the research [Recruitment Poster - Study Advert]	3	30 September 2022
Evidence of Sponsor insurance or indemnity (non NHS Sponsors only) [Lancaster University Sponsor Indemnity]		01 August 2022
IRAS Application Form [IRAS_Form_05122022]		05 December 2022
Letter from sponsor [Lancaster University Sponsorship Letter]		22 November 2022
Non-validated questionnaire [Demographic Questionnaire]	3	30 September 2022
Organisation Information Document [OID]		20 January 2023
Other [Participant Debrief Sheet]	3	30 September 2022
Participant consent form [Consent Form]	3	28 November 2022
Participant information sheet (PIS) [PIS]	4	28 November 2022
Research protocol or project proposal [Research Protocol Psychological Safety, Compassion Satisfaction, Compassion Fatigue, and Intention to Leave in Inpatient Mental Health Teams]	2	30 September 2022
Schedule of Events or SoECAT [Schedule of Events]	1	10 January 2023
Summary CV for Chief Investigator (CI) [Dr James Kelly CV]		14 October 2022
Summary CV for student [Aimee Hogan - Academic CV]		29 November 2022
Validated questionnaire [Team Psychological Safety Measure (Edmondson, 1999)]		
Validated questionnaire [Professional Quality of Life Scale (ProQOL) Compassion Satisfaction and Compassion Fatigue Measure (Stamm, 2009)]		

Appendices

Appendix 4-1: Research Protocol

Research Protocol

Psychological Safety, Compassion Satisfaction, Compassion Fatigue, and Intention to Leave in Inpatient Mental Health Teams

Name of applicant: Aimee Hogan

Name of research supervisor: Dr. James Kelly

Names of field supervisors: [redacted] and [redacted]

Version number: 2

IRAS ID: 306540

Introduction

Compassion has been highlighted as a concept that is central to modern healthcare in the UK. The NHS long term plan states that developing and embedding compassionate cultures and supporting compassionate leadership are vital for a successful NHS workforce (NHS, 2019). Gilbert (2009) describes compassion as a complex social and psychological process, that can be defined as "a basic kindness, with a deep awareness of the suffering of oneself and of other living things, coupled with the wish and effort to relieve it" (Gilbert, 2009, p.xiii). When considering the literature relating to compassion in healthcare, 'compassion satisfaction' and 'compassion fatigue' are two often discussed concepts.

Compassion satisfaction (CS) describes the positive aspects of helping others, the pleasure a person feels from doing their job, and being able to do it well (Stamm, 2010). Whereas compassion fatigue (CF) describes a type of stress that can occur as a result of helping individuals who have experienced trauma, rather than exposure to the trauma itself (Figley, 1995). The effects of compassion fatigue

are thought to reduce clinicians' ability to effectively help the clients they support (Figley, 1999). In mental health staff specifically, Turgoose and Maddox (2017) found that CF has a negative effect on the wellbeing of staff. The Francis report (2013) highlighted lack of compassion as one of the major factors in catastrophic failures of care in an UK NHS hospital Trust, as CF can make it more difficult for professionals to hold compassion and empathy in their work (Yang & Kim, 2012), it could be surmised that CF can lead to poor service user care.

The literature has indicated a link between CF and CS, with clinicians able to experience both simultaneously (Stamm, 2002). Slocum-Gori et al.'s (2011) study of palliative care staff found a significant negative correlation between CF and CS, and Turgoose and Maddox's (2017) narrative review demonstrated that multiple studies had found that higher levels of CS were associated with lower levels of CF. These findings suggest that experiencing increased CS may negate the negative effects of CF.

Many factors affecting CF and CS have been highlighted in the literature, including personal factors, such as experiencing workplace trauma (Singh et al., 2020), internal factors, such as clinicians' personality traits (Somoray et al., 2017), and work-related factors, such as workplace belonging (Somoray et al., 2017). Feeling supported by managers and colleagues, workplace belonging, and feeling that your team are working well together are all workplace factors that have been associated with higher levels of CS (Bell et al., 2019; Mangoulia et al., 2015; Somoray et al., 2017). These findings suggest that CS and CF may be affected by workplace team dynamics and relationships. One such measure of team dynamics is the concept of psychological safety.

The definition of psychological safety (PS) is "a shared belief that the team is safe for interpersonal risk taking" (Edmondson, 1999, p.354). This shared belief translates to members of the team feeling that they have the confidence to speak up and share ideas and opinions, without risking rejection or embarrassment, and arises from a team that has mutual trust and support (Kahn, 1990; Kessel et al., 2012). As previous studies have found that feeling a sense of belonging in a team and support from colleagues can both have an effect on CS and CF, it could be hypothesised that the concept of PS

may be associated with CF and CS. This is currently very little research into PS specifically in mental health teams and as such is an unexplored avenue of research.

Finally, staff retention is an ongoing concern in the NHS, in 2019 the Royal College of Nursing reported a 10.6% decrease in the mental health nursing workforce since 2009, with a 25.9% decrease being found in inpatient and acute mental health care specifically (Savage, 2019). In addition to this, the Department of Health and Social Care shared that a total of 23,686 mental health staff left the NHS between June 2017 and May 2018 (Campbell, 2018). Kelly et al.'s (2015) study of acute (physical) care nurses found that intention to leave was a predictor of both CF and CS, with intention to leave being positively associated with CF and negatively associated with CS. This suggests that higher levels of CF and lower levels of CS may be predictors of staffs' intention to leave their current job. Issues with retention in NHS staff can translate into stretched services and poor care for service users, and so it is of vital importance to understand the factors that may be contributing to this.

Although CF and CS have been widely explored in various healthcare settings over the past two decades, there remains a scarcity of research into CF and CS specifically in mental health inpatient settings, despite this group of staff being in frequent contact with service users who have experienced trauma. This may be reflective of a seeming lack of focus in research on inpatient mental health settings in general, when compared with community mental health settings.

As there is currently a paucity in the research into CF and CS specifically in inpatient mental health settings and to date, no research exploring PS's effect on CF and CS, this study aims to explore whether PS is associated with CF and CS, and whether CF and CS are predictors of intention to leave.

Hypotheses

Hypothesis one

Intention to leave has been found to be positively associated with CF, and previous studies have found that higher levels of CS may negate the negative effects of CF. Hence it is hypothesised that

higher levels of compassion fatigue will predict intention to leave, with compassion satisfaction moderating this relationship.

Hypothesis two

In previous studies feeling supported by ones' colleagues and being part of a cohesive team was found to increase CS and/or protect staff from developing CF. As such it is hypothesised that higher levels of PS will be associated with higher levels of CS and lower levels of CF.

Method

Participants

Participants will be inpatient mental health staff from a number of NHS trusts in the UK. Staff from multiple job roles will be represented in this study including psychiatrists, junior doctors, nurses, nursing assistants/support workers, psychologists, psychological therapists, and occupational therapists.

The inclusion criteria are that participants have to work in an inpatient mental health setting at the time the study is conducted and must have been working in such a setting for at least three months at the time of partaking in the study. The exclusion criterion is anyone who does not regularly work in an inpatient mental health setting, where regularly is defined as at least once per week. This means that bank or agency members of staff are not automatically excluded from the study, but ensures that all participants have sufficient current experience of working in an inpatient setting. For the purpose of this study a NHS inpatient mental health setting includes acute wards, psychiatric intensive care units , and rehabilitation units.

Participants will be selected using opportunity sampling. My research supervisor and I will contact both local NHS Trusts and Trusts in which we have contacts with professionals working in inpatient mental health services. Participants from a range of disciplines will be encouraged to take part in the study. However, it is not feasible to utilise stratified sampling in order to gain a representative sample of each staff discipline. This is because the staffing mix in inpatient mental health settings

varies, and currently there are no fixed staffing levels for UK mental health inpatient wards (NHS, 2015).

The number of participants required for this study is 179. This is based on a power calculation for a two-tailed logistic regression, completed using the software G*Power (Faul et al., 2007). Recent studies that have utilised the ProQOL-5 have reported response rates of between 27.7% and 41.0% (Chachula, 2021; Geoffrion et al., 2019; Somoray et al., 2017). Taking this into consideration, I will aim to distribute the questionnaires to 500-600 possible participants.

Design

This will be a cross-sectional study, with a within-subjects design. This type of design is appropriate as the study aims to investigate staffs' current experience of PS, CF, and CS at one point in time. The outcome measures will be intention to leave current job role, CF, CS, and PS. Demographic data will also be collected from participants including, age, gender, job role, and years in role. Data will be collected using demographic questions and pre-existing questionnaires in the form of an online survey.

Materials

Psychological Safety

PS will be measured using the Team Psychological Safety Scale (Edmondson, 1999). This measure has been extensively evaluated and has been found to have strong content, construct, and criterion validity (Newman et al., 2017). It was also found to have high internal consistency reliability, with the scale being reliable across diverse population samples (Edmondson, 1999; Newman et al., 2017). The Team Psychological Safety Scale was originally created from a sample of employees working at an office furniture manufacturer (Edmondson, 1999) however, it has since been utilised across a range of organisations, including healthcare settings (Grailey et al., 2021).

Compassion Satisfaction and Compassion Fatigue

The Professional Quality of Life Measure [ProQOL-21] (Heritage et al., 2018) will be used to assess

the concepts of CS and CF. This is the most frequently used measure for compassion in research into the helping professions. The ProQOL-21 has been found to be a highly valid and reliable measure of CS and CF (Heritage et al., 2018).

In Maddox and Turgoose's (2017) review of CF in mental health professionals, 23 of the 32 papers included utilised the ProQOL. These papers covered a range of mental health professionals (psychologists, therapists, mental health nurses, and counsellors), working in varying settings (community mental health teams, inpatient mental health teams, and counselling services), in different countries (USA, Israel, Italy, Canada, and Australia). Rossi et al.'s (2012) study of psychologists, psychiatrists, social workers, support workers, and mental health nurses working in community or inpatient mental health settings utilised the ProQOL to measure CS and CF. Although this study was focused on an Italian population, the staffing mix and setting is similar to the current study. Studies utilising the ProQOL as a measure of CS and CF have also been completed in UK populations (Bell et al., 2019; Linley & Joseph, 2007).

Intention to leave

Intention to leave, also known as turnover intention or intention to quit in the literature, has previously been measured in various ways. Flinkman et al.'s (2010) review of nurses' intention to leave the profession found that 24 different measures/scales/instruments were used to measure intention to leave, suggesting that there is no current 'best practice' for measuring intention to leave. This review also found that there was no consistent definition for 'intention to leave' in the studies reviewed, with some nurses intending to leave their current job, some intending to leave the profession entirely, and some indicating intention to leave as a result of retiring, all of whom would give the same response on a questionnaire, though their reasons for this are different.

As this study hopes to ascertain intention to leave due to job dissatisfaction, intention to leave will be measured by asking two questions. The first will ask whether the participant intends to leave their current job within the next year due to job dissatisfaction, with this requiring a yes or no response. If a participant answers yes, they will then be asked to differentiate between leaving their

current job specifically, leaving the NHS, or leaving their profession entirely. This way of measuring intention to leave has been taken from Heinen et al.'s (2013) study of 23,159 nurses' intention to leave their profession in 10 different European countries, including the UK.

Procedure

Recruitment

Participants can be recruited to the study through several different channels. One way in which participants can be recruited is by being contacted through their work email. I plan to recruit in this way through several different Trusts across the UK, including [redacted], as this is the trust my field supervisors work in, [redacted], as myself and my field supervisors have contacts in this Trust, and then Trusts across [redacted] and possibly [redacted], as my research supervisor has contacts in these Trusts. I plan to meet with the Research and Development teams of the above Trusts to gain permission to distribute the questionnaires and for staff to take part. As only inpatient mental health staff are eligible to participate, I plan to ask ward managers, clinical leads, or service leads to distribute the link to the questionnaires to the relevant staff in their Trust/ward/service (see appendix 1 for an example of the recruitment email).

Another way in which participants can be recruited is online, I have added this option to ensure that I am able to obtain enough participants. I plan to utilise Twitter and Facebook groups, aimed at professionals who may work in inpatient mental health. For example, groups for psychiatry and junior doctors, groups for qualified and aspiring psychologists, nursing groups, and groups for other allied health professionals. Participants will be able to take part in the study by clicking on a link which will take them to the questionnaire (see appendix 2 for an example of the online recruitment poster).

Taking part in the study

Participants will access the study via a link, which will take them to an online Qualtrics questionnaire. Participants will first be required to read through a participant information sheet (see

appendix 3), which will outline the purpose of the study and what will be expected of the participant if they decide to take part. They will then be prompted to read the consent form (see appendix 4) and will be informed that by proceeding with the study, they are giving their informed consent.

The participants will then be required to complete a demographic data questionnaire (see appendix 5), then the PS measure (see appendix 6), then the CS and CF measure (see appendix 7), and finally, the questions relating to intention to leave. The questionnaire should take approximately 10-15 minutes to complete. Following their participation in the study, participants will be able to read a debriefing sheet (see appendix 8) and will be thanked for their participation.

Proposed Analysis

All of the data will be analysed using IBM SPSS Statistics software. When cleaning the data before analysis, it is not expected that there will be any missing data, as the online questionnaire will not allow participants to continue with the survey if all of the questions are not answered. Data will be checked for outliers or obvious response bias, such as participants giving the same answer to every question, such data may be removed from the analysis if its inclusion were to impact the research. Descriptive statistics will be performed and data will be checked for normality of distribution. If the data is normally distributed and meets the assumptions required to perform the intended parametric tests, the following inferential statistics will be completed.

To investigate hypothesis one binary logistic regression will be utilised to predict intention to leave based on CF and CS scores. Intention to leave is the dependent variable and will be dichotomous in nature. CF and CS scores will be the independent variables, or covariates.

To investigate hypothesis two a one-way MANOVA will be conducted where CF and CS are the dependent variables and psychological safety is the independent variable. Post-hoc tests (e.g. Tukey's test) will be applied to determine the difference of mean CS and CF values.

To investigate the demographic data separate MANOVAs will be conducted with CF, CS, and psychological safety as dependent variables and gender, job role, years in profession, and years in

current role as independent variables. Post-hoc tests (e.g. Tukey's test) will be applied to determine the difference of means for CS, CF, and PS.

Practical Issues

There should be no costs incurred during the study, as data collection will take place online and the study will also be distributed online, via email or social media. Throughout the duration of the study, participant data and the subsequent analyses of this will be stored securely in a password protected file space on the University server. I will be responsible for all data but my thesis supervisor as the chief investigator for the study will also be able to access the data throughout the study. Once the study has been completed all research data will be shared securely with the Research Coordinator of the Doctorate in Clinical Psychology via OneDrive, the data will then be saved on a password protected file space on the University server for long-term storage.

Participants will not be required to share any obvious identifiers (such as their name, email address, or birthdate), but the data will be pseudonymised and some of the demographic data could potentially identify people (e.g. job role, age, years in role) hence, the data would be classed as personal data. As such, all processing of participants' data will adhere to all laws related to the UK General Data Protection Regulation [UK-GDPR] (Information Commissioner's Office, 2018) and the Data Protection Act [DPA] (2018).

Ethical Concerns

I do not expect there to be any major ethical concerns arising from taking part in this study. Completing the questionnaires may draw participants' attention to difficult or upsetting feelings that they have towards their work. If this is the case, advice has been included in the participant information sheet and debrief sheet that suggests speaking with their manager, contacting their Occupation Health Department or speaking to their GP or local IAPT service if they feel that the impact of their work is affecting their own mental or emotional wellbeing. Participants can also contact the researchers or the Doctorate of Clinical Psychology Programme Director if they have any

concerns.

Timescale

The project will be sent for ethical review by the University's FHM REC in June 2022 and HRA in November 2022. Data collection can begin as soon as ethical approval is obtained with a plan for data collection to be ongoing throughout November and December 2022. If the required number of participants has not been met by this point, the data collection could be extended until the end of January 2023. The study will be completed by March 2023 and feedback will be sent to managers in the Trusts that took part, which can then be disseminated to staff.

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Appendix 4-2: Example Recruitment Email

Example Recruitment Email

Study Advert:

I would like to invite you to complete a short (10-15 minutes) survey exploring NHS inpatient mental health staff's experiences of working as part of a team, and of the positive and negative aspects of their job.

This survey is open to any clinical member of staff, from any profession, currently and regularly working in an NHS inpatient mental health setting.

The survey forms part of my doctoral research study. Working in an inpatient mental health setting can be both stressful and rewarding. This study aims to understand the relationship between feeling safe within a work team and the positive and negative emotional aspects of working in a caring profession.

The research has been approved by the Faculty of Health and Medicine Research Ethics Committee at Lancaster University and by the NHS Health Research Authority. Lancaster University will perform the role as sponsor for this research.

If you have any questions don't hesitate to contact me by email: a.hogan@lancaster.ac.uk

All contributions would be very much appreciated!

You can find more information in the poster attached, please click on the link below if you would like to take part.
https://lancasteruni.eu.qualtrics.com/jfe/form/SV_bJYMfO0JwZM9khM

Appendix 4-3: Recruitment Poster

Psychological Safety and Compassion in Inpatient Mental Health Teams

Health & Medicine | Lancaster University

V3 30/09/2022
IRAS ID: 306540

Lancaster University
Doctorate of Clinical Psychology
Aimee Hogan (Trainee Clinical Psychologist)
a.hogan@lancaster.ac.uk

About this study

The mental heath workforce has significantly decreased in recent years, with workplace stressors being highlighted as one of the reasons for this.

The purpose of this study is to explore NHS inpatient mental health staff's experiences of the positive and negative aspects of their work and of working as part of a team.

Can I take part?

To take part in this study you must be **currently** and **regularly** working in an **NHS inpatient mental health setting** and this should be where your work is based.

Bank and agency staff are also welcome to take part as long as you meet the eligibility requirements.

What do I have to do?

If you decide to take part, you will be asked to complete a questionnaire that covers, demographic information (such as gender and job role), compassion satisfaction, compassion fatigue, and psychological safety. All of the questions are in the form of tick box answers and it should take you no longer than **10-15 minutes to complete.**

How do I take part?

Online by visiting the following link:
https://lancasteruni.eu.qualtrics.com/jfe/form/SV_bJYMfO0JwZM9khM

You can complete this questionnaire on a smartphone or computer.

We really appreciate your participation. Thank you!

Appendix 4-4: Participant Information Sheet

Participant Information Sheet

Psychological Safety, Compassion Satisfaction, and Compassion Fatigue in Inpatient Mental Health Teams

My name is Aimee Hogan, I'm a trainee clinical psychologist, and I am conducting this research. I am a student on the Doctorate of Clinical Psychology programme at Lancaster University, Lancaster, United Kingdom.

What is the study about?

The purpose of this study is to explore NHS inpatient mental health staff's experiences of some of the positive and negative aspects of their work and of working as part of a team. The concepts being investigated in this study are compassion satisfaction, compassion fatigue, and psychological safety, as well as other work-related items.

Psychological safety can be thought of as how safe people feel within their work team, in terms of sharing their thoughts, feelings, and opinions. Compassion satisfaction is the positive effects and pleasure people can derive from helping others in their care, and compassion fatigue is a type of stress that can develop due to being in contact with people who have experienced trauma.

Why have I been approached?

You have been approached because the study requires information from people who currently and regularly work in a clinical role in an NHS inpatient mental health setting. This includes acute inpatient wards, rehabilitation wards, and psychiatric intensive care units (PICUs). Staff from all clinical professions are welcome to take part, this includes psychiatrists, junior doctors, nurses, health care assistants and support workers, practitioner psychologists, assistant psychologists, psychological therapists, and occupational therapists, although this list is not exhaustive.

To take part in this study you must be **currently** and **regularly** working in a **clinical role** in an **NHS inpatient mental health setting** and this should be where your work is based. For example, care coordinators may often visit inpatient mental health settings, but would be excluded from this study as it is not their usual work setting. **Regularly** is defined as **at least once per week**, this means that bank or agency members of staff are welcome to participate, but must have sufficient **current** experience of working as part of an inpatient mental health team. People working in an inpatient setting for **less than three months** are excluded from this study.

Do I have to take part?
No. It's completely up to you to decide whether or not you take part, if you do not wish to take part you can simply close this survey now.

What will I be asked to do if I take part?
If you decide you would like to take part, you would be asked to read the consent form and confirm that you give your consent to take part. You will then be asked to complete a questionnaire that covers demographic information (such as gender and job role), compassion satisfaction, compassion fatigue, psychological safety, and intention to leave. All of the questions are in the form of tick box answers and it should take you no longer than 10-15 minutes to complete.

Will my data be Identifiable?
The data collected for this study will be stored securely and only the researchers conducting this study will have access to this data. You will not be asked to give your name or email address and your data will only be identifiable via a participant code. This means that your data will be confidential.

- The data files will be stored securely in a password protected file space on Lancaster University's server. Only the researcher and the research supervisor will have access to this data.
- You will not be asked to give your name or email address and your data will only be identifiable via a participant identifier code. All your personal data will be confidential and your responses will be anonymous in the final research paper.

Lancaster University will be the data controller for any personal information collected as part of this study. Under the GDPR you have certain rights when personal data is collected about you. You have the right to access any personal data held about you, to object to the processing of your personal information, to rectify personal data if it is inaccurate, the right to have data about you erased and, depending on the circumstances, the right to data portability. Please be aware that many of these rights are not absolute and only apply in certain circumstances. If you would like to know more about your rights in relation to your personal data, please speak to the researchers of this study.

For further information about how Lancaster University processes personal data for research purposes and your data rights please visit the webpage:
www.lancaster.ac.uk/research/data-protection

What will happen to the results?
The results will be summarised and reported in a thesis and may be submitted for publication in an academic or professional journal. The results will be disseminated in aggregate form and as such will be completely anonymous. The participants in this study will be from different services across multiple different NHS Trusts and so it will not be possible for individual respondents to be identified.

If you have taken part in the study via a link sent to your work email, I plan to disseminate the results to your management, who can then distribute these to you. Just to confirm, your managers will not be able to identify your responses from the results.

Are there any risks?

There are no risks anticipated with participating in this study. However, if you experience any distress following participation you are encouraged to inform the researcher and contact the resources provided at the end of this sheet.

Are there any benefits to taking part?

Although you may find participating interesting, there are no direct benefits in taking part. It is hoped that once completed, this research will add to the body of literature exploring UK inpatient mental health settings, which is currently an underrepresented area in the research.

Who has reviewed the project?

This study has been reviewed and approved by the Faculty of Health and Medicine Research Ethics Committee at Lancaster University and by the NHS Health Research Authority. Lancaster University is the sponsor for this study.

IRAS ID: 306540

Where can I obtain further information about the study if I need it?

If you have any questions about the study, please contact the main researcher:

Student Researcher
Aimee Hogan
Trainee Clinical Psychologist
a.hogan@lancaster.ac.uk

Research Supervisor
Dr James Kelly
Clinical Psychologist and Lecturer in Clinical Psychology
j.a.kelly@lancaster.ac.uk

Complaints

If you wish to make a complaint or raise concerns about any aspect of this study and do not want to speak to the researcher, you can contact:

Professor Bill Sellwood
Email: b.sellwood@lancaster.ac.uk
Doctorate of Clinical Psychology Programme Director
Faculty of Health and Medicine
Lancaster University
Lancaster
LA1 4AT

If you wish to speak to someone outside of the Clinical Psychology Doctorate Programme, you may also contact:

Dr Laura Machin Tel: +44 (0)1524 594973
Chair of FHM REC Email: l.machin@lancaster.ac.uk
Faculty of Health and Medicine
(Lancaster Medical School)
Lancaster University
Lancaster
LA1 4YG

Resources in the event of distress

Should you feel distressed either as a result of taking part, or in the future, you can contact the researchers, speak to your supervisor or line manager, or contact your Trust's Occupational Health Service for advice. If you feel that the impact of your work is affecting your own mental health or emotional wellbeing you can contact your GP or local Improving Access to Psychological Therapies (IAPT) service.

If you are experiencing workplace stress, the following website contains some useful links, tips, and factsheets about experiencing stress within the NHS and what you can do about this. https://www.nhsemployers.org/articles/supporting-our-nhs-people-experiencing-stress

Thank you for taking the time to read this information sheet.

Appendix 4-5: Consent Form

Consent Form

Study Title: Psychological Safety, Compassion Satisfaction, and Compassion Fatigue in Inpatient Mental Health Teams

We are asking if you would like to take part in a research project investigating NHS inpatient mental health staffs' experiences of some of the positive and negative aspects of their work and of working as part of a team. Before you consent to participating in the study we ask that you read the participant information sheet. If you have any questions or queries before signing the consent form please speak to the principal investigator, Aimee Hogan.

By proceeding to the survey you confirm that:

- You have read the participant information sheet dated and understand what is expected of you within this study.
- You have had the opportunity to ask questions and had these answered satisfactorily.
- You understand that any responses/information you give will remain confidential, as you will be assigned a unique participant identifier rather than giving any personal information.
- You are aware that your data will be stored safely in a secure cloud storage system on Lancaster University's server.
- Your participation is voluntary.
- You understand that you can withdraw your participation up to **two weeks** after completing the online questionnaires. In order to do so, you must be able to provide your unique participant identifier, as it will not be possible to remove your data without this.
- You consent for the information you provide to be discussed with my supervisor at Lancaster University.
- You consent that the data will be pooled with other participants' data and published.

- You consent to Lancaster University keeping the anonymised data for a period of 10 years after the study has finished.
- By clicking on this link, you consent to **taking part in the current study.**

Appendix 4-6: Demographic Questionnaire

Demographic Questionnaire

Please complete the following questions before moving onto the next part of the survey.

1. What is your age in years? _____

2. What is your gender?

Male

Female

Non-binary

Prefer to self-describe _____

Prefer not to answer

3. What is your ethnic group? Please choose one option that best describes your ethnic group.

Asian or Asian British

- Indian
- Pakistani
- Bangladeshi
- Chinese
- Any other Asian background

Black, Black British, Caribbean or African

- Caribbean
- African
- Any other Black, Black British, or Caribbean background

Mixed or multiple ethnic groups

- White and Black Caribbean
- White and Black African
- White and Asian
- Any other Mixed or multiple ethnic background

White

- English, Welsh, Scottish, Northern Irish or British
- Irish

- Gypsy or Irish Traveller
- Roma
- Any other White background

Other ethnic group

- Arab
- Any other ethnic group

4. What is your current job role? _____

5. How many years have you worked in your profession? _____

6. How many years have you worked in your current job? _____

Appendix 4-7: Team Psychological Safety Scale (Edmondson, 1999)

Team Psychological Safety Measure
(Edmondson, 1999)

All scores measured on a 7-point Likert scale from (1) "very inaccurate" to (7) "very accurate".

1. If you make a mistake on this team, it is often held against you.
2. Members of this team are able to bring up problems and tough issues.
3. People on this team sometimes reject others for being different.
4. It is safe to take a risk on this team.
5. It is difficult to ask other members of this team for help.
6. No one on this team would deliberately act in a way that undermines my efforts.
7. Working with members of this team, my unique skills and talents are valued and utilised.

Appendix 4-8: The Professional Quality of Life Measure [ProQOL-5] (Stamm, 2009)

Professional Quality of Life Scale (ProQOL)

Compassion Satisfaction and Compassion Fatigue
(ProQOL) Version 5 (2009)

When you provide care for people you have direct contact with their lives. As you may have found, your compassion for those you care for can affect you in positive and negative ways. Below are some questions about your experiences, both positive and negative, as an inpatient staff member. Consider each of the following questions about you and your current work situation. Select the number that honestly reflects how frequently you experienced these things in the *last 30 days*.

1=Never	2=Rarely	3=Sometimes	4=Often	5=Very Often

1. I am happy.
2. I am preoccupied with more than one person I care for.
3. I get satisfaction from being able to help people.
4. I feel connected to others.
5. I jump or am startled by unexpected sounds.
6. I feel invigorated after working with those I care for.
7. I find it difficult to separate my personal life from my life as an inpatient staff member.
8. I am not as productive at work because I am losing sleep over traumatic experiences of a person I care for.
9. I think that I might have been affected by the traumatic stress of those I care for.
10. I feel trapped by my job as an inpatient staff member.
11. Because of my caring job, I have felt "on edge" about various things.
12. I like my work as an inpatient staff member.
13. I feel depressed because of the traumatic experiences of the people I care for.
14. I feel as though I am experiencing the trauma of someone I have cared for.
15. I have beliefs that sustain me.
16. I am pleased with how I am able to keep up with my work techniques and protocols.
17. I am the person I always wanted to be.
18. My work makes me feel satisfied.
19. I feel worn out because of my work as an inpatient staff member.
20. I have happy thoughts and feelings about those I care for and how I could help them.
21. I feel overwhelmed because my case load seems endless.
22. I believe I can make a difference through my work.
23. I avoid certain activities or situations because they remind me of frightening experiences of the people I care for.
24. I am proud of what I can do to help those I care for.
25. As a result of my caring, I have intrusive, frightening thoughts.
26. I feel "bogged down" by the system.
27. I have thoughts that I am a "success" as an inpatient staff member.

28. I can't recall important parts of my work with trauma victims.
29. I am a very caring person.
30. I am happy that I chose to do this work.

Appendix 4-9: Participant Debrief Sheet

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Participant Debrief Sheet

Thank you for choosing to take part in this project, your participation is greatly appreciated.

Purpose of the study

This study aims to explore NHS inpatient mental health staff's experience of compassion satisfaction, compassion fatigue, and psychological safety in their work. The purpose of the study is to understand the relationship between these concepts, and whether this has an influence over staff's intention to leave their current job, the NHS, or their profession.

Withdrawing from the study

If you no longer want to take part in this study, you can email myself or my research supervisor on the emails below, quoting your participant ID. You have up to two weeks after participating to request that your data is removed from the study. After this date, data analysis will have begun and it will not be possible to remove your data from the study.

Aimee Hogan (trainee clinical psychologist/researcher) - a.hogan@lancaster.ac.uk
Dr James Kelly (clinical psychologist/research supervisor) - j.a.kelly@lancaster.ac.uk

Results of the study

If you have taken part in the study via a link sent to your work email, I plan to disseminate the results, including a short overview of the most important findings to your management, who can then distribute these to you. This overview will contain the results of the study in aggregate form and so the results will be completely anonymous. This study includes participants from a range of different services in a range of different NHS Trusts and so it will not be possible to discern your individual responses to the survey. If you do not receive this by September 2023 or have participated in the study via a link on social media, please

contact myself or my research supervisor on the emails below.

Aimee Hogan (trainee clinical psychologist/researcher) - a.hogan@lancaster.ac.uk

Dr James Kelly (clinical psychologist/research supervisor) - j.a.kelly@lancaster.ac.uk

Questions or concerns

If you have any questions or concerns about the study, do not hesitate to contact myself or my research supervisor on the email addresses above.

If you are feeling any work-related distress as a result of your responses to the study, please speak with your manager, or contract your Trust's Occupational Health Service.

If you are experiencing workplace stress, the following website contains some useful links, tips, and factsheets about experiencing stress within the NHS and what you can do about this. https://www.nhsemployers.org/articles/supporting-our-nhs-people-experiencing-stress