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ABSTRACT

Introduction Empathy is a core component of high-quality care yet is expressed and received in different ways depending on the characteristics (including gender, race, socioeconomic status and disability) of both practitioners and patients. However, the evidence exploring how these characteristics or their overlap ('intersectionality') influence empathy has not been synthesised.

Methods and analysis We will systematically review and meta-analyse studies exploring the influence of healthcare practitioners and patient characteristics on empathy in healthcare. MEDLINE, EMBASE (via Scopus), Scopus, PsycINFO, CINAHL, CENTRAL Web of Science, Cochrane Database of Systematic Reviews and Database of Abstracts of Reviews of Effects will be searched from database inception to present. Reference chasing will be used to identify additional studies. Studies that report empathy levels using either (1) the patient-reported Consultation and Relational Empathy Measure or (2) the practitioner or student-reported Jefferson Scale of Empathy. This will include validated versions or translations of both scales.

Two reviewers will independently screen titles, abstracts, and full texts and extract data using Rayyan. Discrepancies will be resolved in discussion with a third author if necessary. Two independent authors will evaluate the risk of bias using the Joanna Briggs Institute tools. Continuous data will be analysed based on the mean, SD, sample size and 95% CIs. Sensitivity analyses will be used to explore the potential impact of risk of bias and use of imputed data. We will explore differences between countries, demographic characteristics, disciplines and lengths of time in practice experience, as well as differences over time (comparing more recent with older studies). We will also explore differences between patient-reported and practitioner-reported empathy.

We will report our findings following the Preferred Reporting Items for Systematic reviews and Meta-Analyses guidelines and flowchart.

Ethics and dissemination Ethical approval is not required for this review as primary data will not be collected. The review will be disseminated through peer-reviewed publication and presented at conferences.

PROSPERO registration number CRD42024604677.

STRENGTHS AND LIMITATIONS OF THIS STUDY

- ⇒ This an up-to-date systematic reviews that investigates the relationship between patient and practitioner characteristics and empathy.
- ⇒ A broad search strategy using multiple high-quality databases will be employed to ensure all relevant data is included.
- ⇒ No language restrictions will be implemented, minimising the risk of language bias and ensuring the inclusion of global research.
- ⇒ This is the first systematic review that compares patient-reported empathy with practitioner-reported empathy.
- ⇒ A potential limitation is that there is potential for variability in how demographic data is reported within included studies, limiting the ability to achieve study aims.

INTRODUCTION

Empathy is often defined as the ability to understand an individual's emotions and perspectives followed by therapeutic action.[1] Practitioner empathy is considered a core value[2] that improves both patient and practitioner outcomes.[3 4] Systematic reviews of randomised trials have shown that enhanced empathy is associated with improved patient outcomes ranging from reduced hospital readmission to lower mortality following surgery,[5] as well as improving patient satisfaction.[6] Additionally, research has highlighted that empathy can help foster more equitable and inclusive care, particularly shaping positive practitioner attitudes towards persons with disabilities.[7] Empathy also benefits practitioners; those who demonstrate high levels of empathy experience less stress and burnout.[8 9]

Contrary to what is often assumed, empathy can be taught.[10] A systematic review of 26 randomised trials found that empathy training positively impacts practitioner empathic behaviour, reframing empathy as a teachable action.[11] Targeted interventions, such as communication skills training, role-playing and reflective practices have shown to be effective in improving empathy.[12–14]

Although empathic healthcare benefits patients and practitioners, the extent to which patients report their practitioners to be empathic varies considerably. A systematic review by Howick *et al*[15] found that studies with over 50% female healthcare practitioners had 16% higher empathy scores compared with male majority studies. In another study, Black male students rated themselves as highly empathic; however, patients rated them lower than any other group.[16] A systematic review by Roberts *et al*[17] demonstrated that patients from lower socioeconomic ethnic minority backgrounds rated their clinicians as having lower empathy; this reinforces that diversity factors like gender, race and socioeconomic status can influence empathic interactions between practitioner and patients.

As the diversity of the population, workforce and patients grows, understanding patient and practitioner characteristics that influence empathy becomes increasingly important. Data collected by the UK Office for National Statistics (2011 and 2021)[18 19] demonstrate a shift in ethnicity demographics. The number of individuals identifying as 'Asian, Asian British, Asian Welsh', 'Black, Black British, Black Welsh, Caribbean or African', 'Mixed or Multiple', 'White' and 'Other ethnic group' increased by 1.8%, 0.7%, 0.7% and 1.1%, respectively.[19] Meanwhile, the 2023 NHS Workforce Race Equality Standard reports that Black and minority ethnic (BME) staff constitute over a quarter of the total workforce (26.4%), a significant increase from 2017, where BME staff equated to 16.3%.[20 21] In contrast, those identifying as 'White' decreased by 4.3%.[21]

These changes in population diversity require healthcare services to adapt in order to accommodate the needs of patients, ensuring consistency in empathic and equitable care, which is crucial for reducing health inequalities.[10 22] Despite the need to understand the impact of patient and practitioner characteristics on empathy, there has not been a comprehensive synthesis of studies that can identify this impact.

Aim

To synthesise studies that investigate the impact of patient and healthcare practitioner characteristics on both patient-reported empathy levels using the validated Consultation and Relational Empathy (CARE) Measure and practitioner-reported empathy levels using the Jefferson Scale of Empathy (JSE) Measure.

METHODS AND ANALYSIS

Eligibility criteria

Table 1 summarises the eligibility criteria. Any observational study where patients have completed either the CARE Measure or the JSE surveys (or both) to assess empathy following consultations with healthcare students or practitioners will be included. The CARE Measure is a widely used and validated tool completed by patients to assess perceived empathy during healthcare consultation.[23 24] As a tool, it has high inter-rater reliability and internal consistency while being used to score the empathy of healthcare students and practitioners across healthcare.[23 24] The JSE is a widely used validated practitioner-reported empathy measure that has been shown to have high inter-rater reliability and internal consistency.[25 26] Clinical studies that use other measures of empathy will not be included, and only primary studies will be used.

Information sources

We will use medical subject headings and text words relevant to the CARE and JSE Measures (including their unabbreviated names), MEDLINE, EMBASE (via Scopus), Scopus, PsycINFO, CINAHL, CENTRAL, Web of Science, and Cochrane Central Database of Systematic Reviews from database to present. Forwards and backwards citation chasing of included studies will also be performed. We will include published and non-published studies, both print and electronic, for comprehensive coverage.

Table 1 Eligibility criteria

	Inclusion criteria	Exclusion criteria
Population	Any (adults, children)	
Intervention	Consultation and Relational Empathy (CARE) Measure or Jefferson Scale of Empathy (JSE) Measure survey results. This will include validated translations and versions including: ► The JSE student (JSE-S)[26] ► JSE Health Professions (JSE-HP)[25] ► JSE-Health Professions students (JSE-HPS)[25] ► The CARE five-question version[34] ► The CARE Pictures 10-question version[34]	Other empathy measures or non-validated versions of the CARE or JSE Measures
Outcomes	Quantitative estimate of CARE or JSE scores	
Language	Any	None
Date of publication	Any	None
Type of study	Observational	Randomised trial, qualitative study

Search strategy

We will adapt a search strategy used in a related review (online supplemental file 1).[15] The draft Medline strategy will be as follows:

1. "consultation and relational empathy".mp.
2. (CARE adj3 (measure* or question* or index* or score* or scale* or criteri* or rating)).mp.
3. (jefferson* adj3 empath*).mp.
4. JSE*.mp.
5. 1 or 2 or 3 or 4.
6. exp Empathy/ or empath*.mp.
7. 5 and 6.

This search strategy will be adapted for other databases. We will also refine the strategy following the Peer Review of Electronic Search Strategies process.[27]

A search of PROSPERO found no ongoing or completed systematic reviews with the same objectives or focus on exploring the role of diversity in patient perceptions of practitioner empathy.

Study records: data management

Search results will be imported and managed using EndNote.[28] Results will then be exported to Rayyan for de-duplication and title, abstract and full-text screening.

Study records: selection process

Two independent reviewers will screen titles and abstracts using Rayyan, an online platform which supports the screening of literature for many types of reviews.[29] Following this, full texts of research meeting the inclusion criteria will be screened again for eligibility. Data will be extracted from research meeting the inclusion criteria using a standardised collection process. Discrepancies will be resolved through discussion or by consulting a third reviewer. Rationales for excluding studies will be recorded.

Study records: data collection process

A standardised form will be used to extract data from each included study, and data will be extracted independently by two reviewers.

Data items: general

- ► Administrative information:
  - – Author contact details
  - – Publication type
  - – Publication year
  - – Study funding sources
- ► Study characteristics:
  - – Aim
  - – Design
  - – Start and end dates
  - – Ethical approval
- ► Geographic information and setting:
  - – Country and specific location
- ► Outcome data:
  - – Mean CARE or JSE Measure scores (with associated SE, SD or CI)
- ► Practitioner and patient characteristics:
  - – Population description and exclusions
  - – Clinical setting
  - – Inclusion/exclusion criteria
  - – Age
  - – Sex
  - – Gender
  - – Gender reassignment
  - – Race/ethnicity
  - – Disability
  - – Pregnancy status
  - – Marital status
  - – Religion or belief system
  - – Sexual orientation
  - – Primary language
  - – Nationality
  - – Residency status
  - – Income
  - – Education
  - – Living arrangements
  - – Deprivation matrix
  - – Criminal record
  - – Caring responsibilities will be extracted
  - – (For practitioners only): role, field of practice, qualification status, years of experience, or year of study
  - – (For patients only): comorbidities, mental health status and previous hospitalisation
- ► Other:
  - – How participants were recruited
  - – Informed consent
  - – Withdrawals
  - – Consultation length
  - – Waiting time
  - – Possible conflicts of interest

Missing data from these variables will be addressed by attempting to contact the author or making informed assumptions. Any contact with authors and assumptions made will be documented.

Outcomes and prioritisation

Primary outcomes

We have three primary outcomes.

1. Mean empathy (CARE and JSE) scores
2. Mean empathy (CARE and JSE) scores by healthcare student and practitioner characteristics
3. Mean empathy (CARE and JSE) scores by patient characteristics

Secondary outcomes

We will explore the influence of and interactions between patient demographic characteristics and healthcare practitioners/students. If there are sufficient studies that report both CARE and JSE scores for the same practitioners, we will explore differences between patient-reported empathy (using CARE) and practitioner-reported empathy (using the JSE).

Effect measures

The primary outcome will be the pooled mean CARE and JSE scores. Results from studies reporting associations between patient and practitioner characteristics and either CARE or JSE scores will be extracted and discussed narratively in the review.

Study risk of bias assessment

Two reviewers will assess the risk of bias after the initial inclusion screening and before data extraction and synthesis. We will use the appropriate Joanna Briggs Institute Risk of Bias tool,[30] dependent on the study design. Judgements regarding the risk of bias for each of the questions outlined in the checklist will be based on the content of the study. From this, studies will either be included or excluded from the review. If the outcome is unclear, the study investigators will be contacted for further information. As per the criteria for judging the risk of bias, this will be performed by two reviewers independently. Where alignment in judgement does not occur, a third reviewer will be consulted until consensus is reached. Graphical representation of potential bias will be generated using robvis, an online application designed for visualising risk-of-bias assessments performed as part of systematic reviews.[31]

Synthesis methods

Criteria

If feasible, quantitative synthesis will be performed if the included studies are sufficiently homogeneous in terms of participants, comparisons and outcomes. Studies which report CARE or JSE Measure scores or provide sufficient data to calculate these scores will be included. Meta-analysis will be conducted if at least three studies provide comparable data. Where data is not sufficient or suitable for meta-analysis, we will provide a narrative summary.

Data presentation

Where summary data is not presented, contact with the author will be attempted to collect the missing data. If data remains unavailable, data will be inferred with assumptions being reported.

Tabulation and visualisation

Data from individual studies will be tabulated in a summary table which will contain average CARE Measure scores with 95% CIs and p values (where applicable) and will be ordered from low to high risk.

Forest plots will be used to visually display the results of individual studies and meta-analyses ordered by the size of the effect estimate within subgroups. These will aid comparison across studies and visually highlight the effect size for each subgroup.

Synthesis

Where sufficiently reported, mean CARE Measure values or JSE scores will be pooled using random effects models to allow for between-study heterogeneity. Between-study heterogeneity will be quantified for all meta-analyses using the I^2 statistic with the following thresholds applied: low: 25–49%; moderate: 50–74%; high: 75% or higher. Stata[32] or R[33] will be used to perform meta-analyses.

Relationships between patient, practitioner characteristics and empathy scores will be explored. Differences between pooled mean values between subgroups will be assessed for statistical significance using meta-regression models, with separate models fitted for each characteristic of interest. This will permit the identification of predictors of empathy and provide an understanding of factors contributing to variability in empathy scores.

Qualitative summary

A qualitative summary will be used alongside meta-analysis to highlight the summary of findings, structured around the primary research outputs followed by key secondary outputs. Studies with a high risk of bias will only be reported if they contain information relevant to the secondary outputs. The qualitative summary will explore the relationship between CARE Measure score s and secondary outcomes.

Exploring heterogeneity

Subgroup and sensitivity analysis will be performed to explore heterogeneity among study results. See secondary outcomes for specific subgroups.

Subgroup and sensitivity analyses

Sensitivity analyses will be performed to assess the robustness of the findings. Studies identified as high risk of bias (unless they contain critical information for subgroup analyses) will be omitted. Analyses investigating the impact of the assumed data will also be conducted. Continuous data with different units will be converted to a standardised metric.

We will conduct a number of subgroup analyses to explore the potential impact on empathy. This will include comparing studies published within the last 10 years to those published earlier, comparison between countries, continents, type of practitioner, qualification status, years of practitioner experience or year of study, as well as practitioner and patient demographics. We will also compare differences between practitioner-reported (using JSE) and patient-reported (using CARE) empathy scores on the influence of both patient and practitioner demographic characteristics.

Publication bias assessment

Publication bias will be evaluated by visual inspection of funnel plots. Asymmetry within plots will imply publication bias.

Certainty assessment

The overall certainty of evidence will be assessed using the GRADE tool by outcome and categorised into four levels: high, moderate, low and very low. These levels will reflect our confidence that the effect estimates are close to the true effects.

Patient and public involvement

One patient partner (CH) was involved in this study and is a co-author. CH contributed to reviewing, suggested improvements to the protocol and edited the main messages of the manuscript to make sure they were understandable and relevant to non-specialist audiences.

ETHICS AND DISSEMINATION

Ethical approval is not required for this review as primary data will not be collected. The review will be disseminated through peer-reviewed publication and conference presentations.

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Contributors This systematic review was conceived by JH. CLW initially drafted the manuscript. JH, KK, CG, KM, DP and CH provided guidance and critically revised content. All authors edited and contributed to the protocol. KN supported the search strategy. JH is the guarantor.

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Competing interests None declared.

Patient and public involvement Patients and/or the public were involved in the design, conduct, reporting or dissemination plans of this research. Refer to the Methods section for further details.

Patient consent for publication Not applicable.

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