ABSTRACT

Introduction. Peer review processes are used to improve professional practice in health care although no synthesis of existing studies has yet been undertaken. These processes are included in the UK professional revalidation processes for medical practitioners and nurses and midwives but not for Allied Health professionals. Purpose: to identify, appraise and synthesize the available qualitative evidence regarding healthcare professionals' experiences and views about peer review processes and to explore the implications for healthcare professionals in the UK.

Methods: Qualitative review using meta-ethnography, reported according to eMERGe guidance. Search strategy was developed using MeSH headings. Data sources: CINAHL, Medline, Ovid Full-text [between May 2007- May 2019] were searched (one reviewer with librarian support) plus manual searching. Screening, data extraction and evaluation were undertaken independently by two reviewers. Studies were independently appraised for quality by two reviewers to identify concepts which were compared and developed into a conceptual model by the team.

Results: 13 studies (937 participants) were included. Findings explored peer review processes and three key components, namely Purpose, Process and Peers. Participants' perceptions of peer review processes were categorised by four main concepts: Value/Benefits, Reflection/Shared-learning, Anxiety about the process and How to improve "buy in".

Discussion: Evidence supports the introduction and use of peer review processes as a quality improvement tool. Further research exploring whether/how to incorporate peer review processes into the process of assessing continuing fitness to practice for Allied

Health Professionals appears appropriate. The time and resources required to implement peer review processes are considered barriers to implementation.

Key words: MeSH heading ‘peer review, health care’, meta-ethnography, peer review processes, post registration education, fitness to practice, health care professionals, qualitative.

INTRODUCTION

Peer review processes are one of the most widely used strategies to improve professional practice and defined as 'any summary of clinical performance of health care over a specified period of time'[1]. They have also been defined as:

> *"the professional assessment, against standards, of the organisation of healthcare processes and quality of work, with the objective of facilitating its improvement."*[2]

Peer review processes describe all types of formative, feedback system/s used as quality improvement tools. Peer review processes aim to improve, not judge, and their scope is agreed with the participants and tailored to reflect their needs and specific requirements[3]. The term 'peer review processes' covers the variety of terms previously used to improve quality such as "peer review", "peer accountability", "peer discussion" and "peer communication" depending on the professional group and sector in which the process is utilized[2,3,4]. Peer review processes allow health care professionals to identify and highlight practice variations, by comparing and contrasting their views, and then reflect on their practice against acceptable standards[5]. Peer review processes are effective formative processes since they encourage "two-way" learning from participants6.

Clinical peer review processes were introduced in the 1990s in the United State as a means of defining minimum standard of care requirements for hospitals and medical staff for quality assurance purposes[7]. This practice has formed part of annual appraisal processes for nurses in the United States from late 1990s onward[8]. Peer review processes have been increasingly used in the UK as a quality improvement tool from the

mid 2000s[9]. The General Medical Council (GMC) UK has incorporated feedback from colleagues as part of the revalidation process for medical practitioner since 2014[10]. The Nursing and Midwifery Council (NMC) UK incorporated peer discussion as part of their new revalidation process for Nurses and Midwifes in 2015[11]. Currently, Allied Health Professionals (AHPs) registered with Health and Care Professions Council (HCPC) in the United Kingdom (UK) are not required to complete peer review processes as part of their bi-annually renewal process.

BACKGROUND

Feedback is an important quality improvement tool in health care. The Institute of Medicine (IOM) report, “Improving Diagnosis in Health Care,” highlighted the value of open discussion and feedback on performance via identifying and learning from errors and near misses in clinical practice[12]. Feedback may be both formative and summative[13] and interactive feedback is an considered indispensable part of professional development and overall improvement by informing participants on past performances so that future performance can be improved[7].

Qualitative research enables the development of concepts which help to gain an in-depth understanding of the experience, perceptions and behavior of individuals[14].
Qualitative evidence synthesis, the synthesizing of multiple qualitative primary research studies, is increasingly gaining acceptance as a valid and rigorous way to distil qualitative evidence to inform health and social care decision making and practice[15]. The amount of existing research now available for peer review processes as quality improvement tools means it is now possible and appropriate to carry out a synthesis of available evidence to inform health care professionals.

THE REVIEW

Aims

To identify, appraise and synthesize the available qualitative evidence regarding healthcare professionals' experiences and views about peer review processes and to explore to explore the implications for healthcare professionals.

Focus of the meta-ethnography

The objective of this review was to explore whether peer review processes could be quality improvement tools in healthcare setting and their potential role in future AHP revalidation processes in the UK.

Rationale for using meta-ethnography

Meta-ethnography synthesis is an interpretive form of synthesis which was first proposed by Noblit & Hare[16] and which has subsequently become an established approach for evidence synthesis[17]. It consists of seven key steps: Getting started; Deciding what is relevant; Reading the studies; Determining how studies are related; Translating studies into each other; Synthesizing translations and Presenting the synthesis[16]. These steps would take the researcher from formulating a research idea to expressing findings with the aim to helping to develop narrative by reducing, comparing and synthesizing textual reports of research findings[16]. The approach can be used to produce a conceptual synthesis of studies and reciprocal and refutational synthesis can be used to integrate the participants' definitions of peer review processes, and their perceptions of the process, interpretively in a similar way to previous research[18]. This meta-ethnography is reported as per eMERGe guidelines[17].

METHODS

Search strategy:

The initial research idea was developed into the final research question. Population, Phenomena of Interest and Context (PICo) (Table 1) was used to clearly define the research questions, develop the inclusion and exclusion criteria and devise appropriate search terms.

Table 1: Review Population, Phenomena of Interest and Context (PICo)

Research questions	What are the participants' perceptions on peer review processes as quality improvement tools in healthcare settings? What are the implications of these perceptions in the wider healthcare setting and how may these perceptions impact on the future allied health professions development?
Population	Healthcare professionals (including medical, nursing and allied health profession staff) participants in face to face peer challenge/review processes
Phenomena of interest	Perceptions of peer review processes as a quality improvement tool
Context	Quality improvement, performance, patients safety

Search Process:

Inclusion criteria: Full text publications for qualitative research exploring peer review processes and its synonyms were included in the review. Searches were carried out on 29th May 2019 for research published between May 2007- May 2019 to identify and include recent research relevant to recent practice and in acknowledgment that peer challenge has been continuously evolving over time[7]. Searches were limited to English language publications since there were no resources to support translation costs; it is accepted that this approach means any non-English language papers will not have been captured and their content not included in this review.

Exclusion criteria: Data from quantitative studies, unpublished data, studies in non-healthcare settings, any peer review processes not involving a face-to-face component (i.e. do not receive comments immediately in a direct way)[20] or not contributing to quality improvements (i.e. improvement in clinical practice or outcomes) or where the study participants were not involved in a peer review process were excluded from this review.

Databases: Search terms were developed from the PICo for the review (ST) with the advice and support of a health care librarian. CINAHL, Medline and Ovid Full-text databases were searched (ST) for identifying articles using Medicine's Medical Subject Headings (MeSH) and additional manual searches (ST) were carried out by reviewing the reference lists of relevant articles to ensure completeness of the search[21].

Selecting primary study: All studies meeting the inclusion criteria were screened and evaluated by two reviewers (ST & AB) independently using the coherent JBI Critical Appraisal Checklist for Qualitative Research tool[22,23]. This tool allows theoretical and interpretive validity to be evaluated[24].

Data abstraction: Two reviewers (ST & AB) carried out data extraction independently using a standardised combined quality assessment and data abstraction form. They conferred and agreed findings. A third reviewer (CML) was available to discuss if consensus could not be reached but this was not needed.

Synthesis: The evidence was synthesized following the seven stage process outlined by Noblit & Hare[16]. Syntheses were led by ST and discussed throughout by the team. Key findings were extracted from included studies and grouped into key concepts before being translated into a second order of interpretation using both "reciprocal" and "refutational" translations[16].

A conceptual model was developed to demonstrate the inter-relationships of the key concepts investigated by this review (**Error! Reference source not found.**) which demonstrates the inter-relationships of the key concepts: the green boxes represent key components that define the peer review processes (blue box). The yellow box represents participants' perceptions of the peer review process which was sub-divided into four key themes for analysis. The orange arrow in between the blue and yellow boxes indicates that the peer review process itself could affect participant's perceptions. The amount of information retrieved was considerable and it is believed that data saturation for themes were achieved.

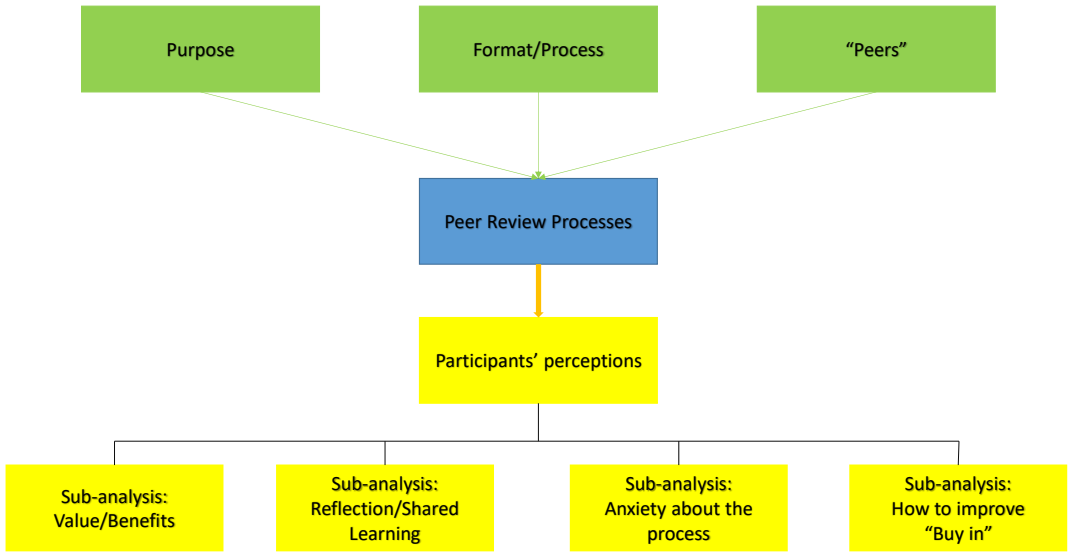

Figure 1: Conceptual Model of Synthesizing All Key Findings of Peer Review Processes

FINDINGS

Figure 2 presents the results from the search strategy. A significant number of articles were excluded following the screening of title and abstract stage because “peer review” was a common term included in the article titles to indicate the studies were peer reviewed as part of the publication process, rather than research exploring peer challenge. The main reasons for excluding full text articles were as follows: not a primary study (i.e. commentary/opinion), non-qualitative studies, not a full paper (abstract or poster only), participants were not clinical staff and papers which focused on the services being peer review/challenge rather than the peer review process itself.

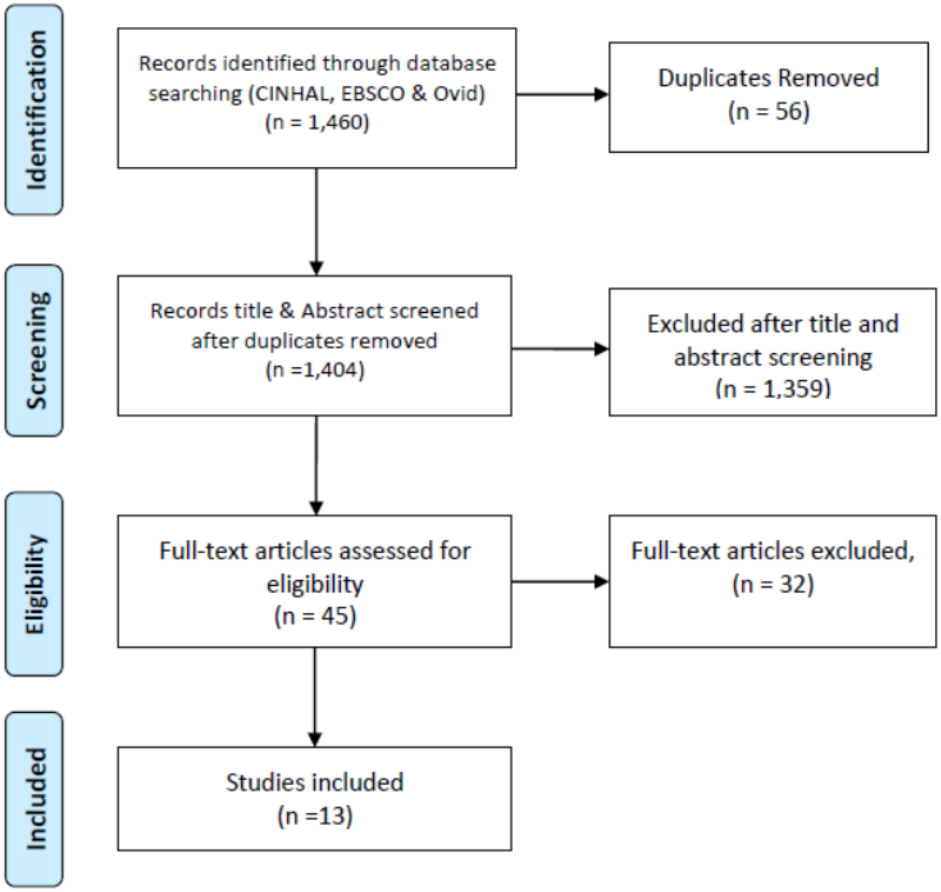

Figure 2: PRISMA Diagram of Literature Search

The key features of the studies included in this synthesis are summarised in Table 2. Thirteen studies, including a total of 937 participants, were included in the review. Three studies included participants from a medical background, two studies included participants from a nursing background, two other studies included participants from an AHP background and five studies had participants from a mixed professional background.

Table 2: Characteristics of Included Studies

Source	Country setting	Sample size (n=)	Professional Group	Method of Data collection	Aim of study	Conclusion
Aveling et al., 2012	United Kingdom	78	Medical (majority)	Semi-structured interview	To describe a specific peer review model—reciprocal peer-to-peer review (RP2PR)—to identify the features that appeared to support optimal functioning of the peer review.	RP2PR was seen as credible and legitimate by lung cancer teams and can act as a powerful stimulus to produce focused quality improvement plans and to support implementation. The findings identified how RP2PR functioned and may be optimised to provide a constructive, open space for identifying opportunities for improvement and solutions.
Bowen-Brady et al., 2019	United States	11	Nursing	Focus Group	To understand clinical nurses' perceptions of their participation in a formal, annual peer review process at a metropolitan community hospital.	Results validate the importance of implementation of a structured, formal peer review process at the organizational level. The study findings identify that the essential components of an effective peer review process include education for peer facilitators and clinical nurses; dedicated time, space, and privacy to conduct peer reviews; and leadership support.
Davys et al. 2008	United Kingdom	17	Allied Health Professionals (Occupational Therapists)	Questionnaires + semi-structured interviews	To explore the perceptions of occupational therapy staff within a higher education setting towards the use of a peer observation of practice scheme.	The findings indicated the need for further research into peer observation and how such a scheme could be formally implemented.
Lockett et al., 2015	United States	28	Nursing	Interview	To define and create a conceptual model for peer-to-peer accountability (P to PA).	P to PA is the professional responsibility of every nurse and healthcare provider and is essential for safe patient care. The conceptual definition facilitated actualization of P to PA in practice.
McKey et al., 2009	Scotland (UK)	20	Medical	Focus Group	To explore the experiences of General Practitioner (GP) reviewers who make	Acting as a peer reviewer was perceived by this group of GPs to be an important professional duty. However, the difficulties,

					educational judgements on colleagues' significant event analyses (SEAs) in an established peer feedback system	emotions and tensions they experienced when making professional judgements on aspects of colleagues' work need to be considered when developing a feasible and rigorous system of educational feedback. This is especially important if peer review is to facilitate the 'external verification' of evidence for appraisal and governance.
McMillian R., 2012	Scotland (UK)	10	Medical	Interview	To assess the feasibility, accessibility and educational impact of the peer review of GP consultations	The peer review of consultations appeared to be an acceptable and feasible educational activity, resulting in behaviour change. It may be useful as an alternative to multi-source feedback and patient questionnaires in provision of evidence of effective communication skills for annual appraisals.
Murie et al., 2009	Scotland (UK)	26	Medical	Interview	To reflect the perspectives of peer reviewers, GPs submitting materials and the GPs appraising them	The Scottish peer review pilot project provided evidence that, given adequate resources, a national system of peer review was considered feasible and acceptable by GP volunteers and appraisers, who are representative of Scottish GPs. Alternative educational models for re-certification are complementary to the process of peer review and are being developed in parallel with the Royal College of General Practice. However, the evidence in favour of peer review was sufficiently compelling to suggest that efforts to continue this work should be encouraged in order to support GP evidence for appraisals.
Pfeiffer et al., 2011	United States	493	Nursing	Survey	To measure informal registered nurse (RN)-to-RN peer review (defined as collegial communication about the quality of nursing care) at the work-unit level	Nurses needed clarification of peer review. Issues with common language in a professional environment needed to be addressed and nurses could learn collaboration from each other's cultures.

Rivas et al., 2012	United Kingdom	43	Medical (majority)	Semi-structured interview	To examine perceptions of local service change and concepts of change amongst participants in a UK nationwide randomised controlled trial of informal, structured, reciprocated, multidisciplinary peer review with feedback to promote quality improvement: the National Chronic Obstructive Pulmonary Disease Resources and Outcomes Project (NCROP)	This study highlighted the significance of generic change in evaluations of change processes. Most participants were clinicians limiting inter-professional comparisons. Some clinical staff failed to recognise changes they accomplished or their significance, perceiving change differently to others within their professional group. These findings have implications for policy and research. They should be considered when developing frameworks for assessing quality improvements and staff engagement with change.
Roberts et al., 2010	United Kingdom	100	Medical (majority)	Change diaries	To report the largest randomised trial of peer review ever conducted in the UK chronic condition care (chronic obstructive pulmonary disease (COPD))	Peer review in this format was a positive experience for most participants but is ineffective in some situations. Its longer term benefits and cost effectiveness require further study. The generic findings of this study have potential implications for the application of peer review throughout the NHS.
Roberts et al., 2012	United Kingdom	82	Medical (majority)	Change diaries	To evaluate whether targeted mutual peer review of respiratory units brings about improvements in services for COPD over 3 years.	The findings demonstrated significant change in service provision over 3 years in both control and intervention sites with great variability in both groups. The combined quantitative and qualitative findings indicate that targeted mutual peer review is associated with improved quality of care, improvements in service delivery and with changes within departments that promote/are precursors to quality improvement. The generic findings of this study have potential implications for the application of peer review throughout the NHS.
Rolland et al., 2010	New Zealand	7	Allied Health Professionals (Physiotherapists)	Semi-structured interview	To describe the experience of participating in peer review.	When peer review has competing purposes it is neither an effective professional development tool nor an accurate measure of competence. Resource and interpersonal

						relationships need to be acknowledged if peer review is used to assess practitioner competence.
Slavova-Azmanova et al., 2015	Australia	22	Medical (majority)	Semi-structured interview	To develop a peer-review model for the assessment and quality improvement of cancer multidisciplinary teams (MDTs) and to qualitatively assess its feasibility and acceptability in Australia.	Peer review of cancer MDTs was feasible and acceptable. They described valuable lessons learnt and recognised that further development of the proposed peer-review model and national benchmarking of MDTs against established outcome measures is required if this process is to be widely implemented.

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Definition of peer review processes

The key concepts (categories, findings and supporting studies) are summarised in Supplementary File 1.**Error! Reference source not found.**. Three key components that defined peer review processes were identified: purpose, process and the definition of peers.

Purpose

Participants viewed the purpose of peer review processes as being to improve practice and facilitate personal and professional development through the giving and receiving of feedback in an honest and transparent manner. Pfeiffer et al.8 described it as being "*the collegial communication about the quality"* while Murie et al.[25] described it as "*the evaluation of one element of an individual's performance using a valid instrument"*. Lockett et al.[26] also suggested that the process encouraged participants to hold themselves and others responsible for upholding acceptable standards of care. Bowen-Brady et al.[27] summed it up as "It's professional, not personal; for personal growth and development".

Process

Most of the peer review processes reported in the included studies involved a combination of a face-to-face components as well as a review of documentation[9,28-32]. This was expected since studies only involving documentation were excluded from the review. Some studies indicated that the process involved direct observation or reviewing videos of peers carrying out a clinical intervention prior to a face to face discussion[32-34]. Others described the process as involving an observation of daily business (for example multi-disciplinary team (MDT) meeting or

case review panel) in conjunction with review of the written policies and procedures available[9,28,29,31]. Some participants commented it as a complex and subjective process[8,32].

Definition of Peers

There was a lack of clarity regarding who should be the "peers" involved in peer review processes and a wide variety of peers was identified in the review. One study indicated that, even though it was defined as "*…among RN*", participants were still unclear about who should be involved in the process[8]. Some defined peers as working in similar roles and settings[9] or someone with the same rank[27] while Davys and colleagues[33] just simply stated "*two colleagues*…" One study did not explicitly define peers in the paper but intimated that peers could be the participants' "*senior*", supervisor or line manager in the same profession[34].

Participants' Perceptions of Peer Review Processes as Quality Improvement Tools

Perceptions were summarised into four key concept areas: Value/Benefits; Reflection/Shared-learning; Anxiety about the process and How to improve "buy in".

Value/Benefits

Most participants believed that peer review processes were an acceptable and constructive quality improvement tool. Some suggested that peer review processes are a "*change promoter*" which mobilised collective actions in relation to quality which would not have otherwise happened[9,26,28,29,31,32]. Some participants felt that the process brought together people "*who would not normally meet in their*

professional roles" to develop relations, mutual understanding and strategies for service improvement[31]. Some participants considered that the process has raised the profile of their topics and the external validation facilitated their negotiations locally to gain senior "*buy in*" [28]. Other participants found improved linkage with both internal and external stakeholders another benefit of the process[29].

However, one study found that a small minority of participants criticised peer review processes as a bureaucratic exercise which would be burdensome in the current busy health system[32]. Furthermore, some other participants were unsure about the extent to which recommendations would be implemented due to the lack of time, resources and other competing priorities as well as ongoing infrastructure changes "… some clinicians felt a loss of confidence that a recommendation was made by this peer review…"[32]. The lack of "buy in" from participants could significantly reduce the perceived value of the process as a quality improvement tool.

Most participants thought the recommendations were beneficial, adequate and appropriate. Some reported that the process had improved their service through the implementation of recommendations[32]. Some participants found being evaluated by a team with "*fresh eye*" encouraged them to explore alternative approaches to existing issues[31] and some participants would like to expand the scope of the peer review process[27]. Conversely, a few participants expressed their displeasure when feedback ventured into clinical territories[30]. It is important that the scope of the peer review process is mutually agreed prior to the review and is adhered to during the process.

Reflection/Shared-learning

Participants felt that the peer review process encouraged them to reflect on their own service/performance which they may not have done previously. Some participants attributed this to the preparatory work which encouraged them to reflect on their current practice "…*You get to see not only what you do badly but also what you do well...*" in both formal and informal meetings before submission of documentation9[5]. Others suggested that they reflected on their existing service following the peers' feedback and/or recommendations[30,33].

Participants felt that the process had promoted shared learning and experience-sharing since it was viewed as a two way process where teaching and learning occurred for both parties involved[27-29,32-34]. Several programmes involved reciprocal review processes[9,28,29,31,32] which enabled peers to share their learning making a validating and reassuring experience that left them thinking that they were "*not alone*" in the experiencing the challenges of modern healthcare[31]. Furthermore, the process led to important changes in cultural behaviour leading to the adoption of new ideas and additional changes[31].

Anxiety about the Process

Participants often felt stressed and anxious about their performance during the peer review process. Some participants simply felt stressed and anxious about being observed while others felt pressured into putting on a "*good show*" - this effect was particularly pertinent if participants were challenged by their supervisors, being subjectively scored or the peer review process was part of a summative process[33,34]. Some suggested this might be related to participants' worries that they could be

"*seen in a poor light by colleagues or exposed in what could be an embarrassing way*"[33] which could negatively impact on their individual/organisational professional standings and affect their future prospects.

It was interesting to find that stress and anxiety did not only affect the participants being reviewed but also the peer reviewers. They were worried if they spoke up during the process that they could be deemed as "*rocking the boat*" and upsetting their friends[26,34,35]. Other peer reviewers feared about peer-retribution which could disrupt the existing working relationships[8,26]. Some reviewers were struggling with the distinction between making a "professional judgement" and being "judgemental" in the process[25] while others found it difficult to be objective with their friends[34]. Lockett and colleagues[26] explicitly discussed that the "*punitive and blame culture*" was being seen as a major barrier to speaking up.

How to improve "buy-in"

This was a category of concepts which captured the measures which may improve the participants' "buy in" to the peer review process (some of these are directly related to some of the issues that had been discussed in previous sections). The majority of participants suggested that peer review was a time-consuming process and without additional resources this may limit its value and benefits[9,26,32,35]. Concerns were raised by some participants that they might not be able to implement the process and recommendations due to the time and resource implications[27,32]. Some participants indicated that having protected time enhanced their experience of the peer review process[31]. Aveling and colleagues[9] shared their experience about

317 gaining approval from the participants' Chief Executive which legitimised the time
318 spent on participation.
319
320 It was important to consider resource implications and minimise the logistic burden
321 before a peer review process is implemented in the busy clinical setting with
322 completing priorities. Bowen-Brady et al.[27] indicated that participants without
323 preparations were most likely to be individuals with a poor attitude toward peer
324 review. Some participants suggested that focusing on improving patient safety and
325 quality could be a strong motivator for participation[26].
326
327 To maximise the benefit of feedback from peer review processes, feedback should
328 be adjusted to ensure they are being received constructively and
329 implemented[9,30,32,33,35]. Some participants suggested the importance of getting into
330 the "mind-set" for formative feedback[35]. Furthermore, other researchers
331 recommended that explicitly indicating the formative nature of the peer review
332 process and participants' professional responsibilities at the beginning of the
333 process could create a safe environment and help to reduce the stress and anxiety
334 experienced by participants[9].
335
336 Some participants indicated that they would like to have some degree of control over
337 the peer review process such as the purpose of the process, who their peers are
338 and what will happen to the information gathered[26,28,29,31-33].
339

Finally, Aveling et al.[9] recommended the use of independent facilitation during the process as it could ensure inclusion of all voices, maintenance of focus on the issue at hand and good timekeeping.

DISCUSSION

This meta-ethnography synthesis has found that peer review processes are intended to improve practice, facilitate personal and professional development and that most participants in this review believed that peer review processes are an acceptable and constructive quality improvement tool as well as being a change promoter. These findings are comparable to the findings of peer review processes undertaken in other settings, namely, education, the public sector and third sector organisations[3,36,37] which supports its use to improve practice.

The review findings generally support peer review processes to be of benefit as a formative, rather than summative, improvement tool although some negative elements were also recognised. External stakeholders (such as commissioners or regulatory bodies) may need to require peer review processes as part of the regular activity of health care professionals to enable them to realise its benefits and adopt it as a quality improvement tool in their own practice. Although the review concluded there are clear benefits for health care professionals to incorporate peer review processes as quality improvement tools in their practice, it may be difficult for them to implement this process given the additional time and resources required and the current funding pressures in the health service in the UK[38]. Peer review and/or peer discussion is, or is going to be, an integral part of the revalidation and renewal processes for doctors, nurses and pharmacists in the UK[10,11,39]. The largest regulatory body for allied health care professions in the UK, the Health & Care Professions Council, is currently reviewing its process of

assessing its registrants' continuing fitness to practise and a peer review process is being considered as one of the requirements for its future revalidation process[40]. The findings of this review would support the consideration of peer review processes in HCPC revalidation for professionals in the future and further research to explore this option. This review also discovered that there are important interconnected factors associated with the peer review process and the participants' perceptions about the process as a quality improvement tool. Regulatory bodies should clearly define the purpose and format of peer review processes if it is used for/becomes part of the revalidation for health care professionals; experience in the education setting discussed similar concerns from participants on the purposes of peer review processes and how they may affect their willingness to participate to the process[41].

The education, public and third sectors' experiences of peer review processes suggests the fifteen different professions classified as allied health professions in the UK are likely to face different challenges if peer review is being implemented as part of their revalidation process, due to their unique working environments[3,36,37]. Some clinicians may be the sole member of their profession within a wider multi-disciplinary team. For example: a dietitian who works in a specialised stroke rehabilitation hospital may not have access to another dietitian in the same hospital; a physiotherapist who works in private practice may not work with others in their daily practice; a Speech and Language therapist (SLT) in the community may be the only SLT working in the service. Whether any peer review processes are profession specific or widened to multi-disciplinary teams would need to be agreed. Also, the acceptability of peer review processes in different settings would

need to be explored, for example, patients of a psychologist may deem it unacceptable to have someone to observe their therapy sessions. It is important that the proposed process/processes provide sufficient flexibility to accommodate the different challenges experienced by different professions in varying settings and further research is needed to inform these processes.

The enablers identified in this review, such as minimising the logistical burden with additional resources to support the process, getting participants into the formative "mind-set" and giving participants some degree of control over the process, could be used as key principles during the development of peer review processes for healthcare professionals. These could facilitate peer review processes to achieve their maximum benefits through reflection/shared learning and minimising the participants' anxiety and stress during the process.

Given all the issues identified in this review, it may be beneficial for the regulatory bodies such as the HCPC to consult their registrants, involve them in the decision and development of peer review processes and consider running a pilot programme with volunteers if they decide to implement this as registration and revalidation requirements in the future. This would allow any proposed processes to be explored, assessed and, if necessary, refined prior to full implementation.

Limitations

The individual studies included in this review showed wide variation in their aims and approaches which may have impacted on the findings of this review. The review aimed

to be as comprehensive as possible but may not have captured all data pertinent to the question. With regard to the syntheses, it is also possible that other reviewers might have constructed different concepts from the findings. However, the team frequently discussed data and all stages of the meta-ethnography and the team came from differing professional backgrounds to provide a broad perspective to support the review. ST is dual trained as a paramedic and registered nurse who had been practicing in various clinical and management roles for over 15 years. AB is a pharmacist with 13 years' experience between academia and clinical practice. CML 3 is a physiotherapist with 25 years qualitative research experience.

It is recognised that research around peer review processes is not yet available for all health care professions, some professions have not yet explored its use or published findings. The extent to which the findings of this review are generalisable across all health care professions and care settings cannot be assumed. However, the wide variety of studies included in the review does appear to support the development of peer review processes in professions yet to implement them. It is also recognized findings from studies implementing peer review processes where participants were involved as part of a wider team may not be generalizable to those involved as individual clinicians in a health care setting who may have different views about the process.

CONCLUSION

There is evidence to support the consideration of peer review processes as quality improvement tools to benefit healthcare professions and professionals. The review identifies that not all health care professions have reported the use of peer review processes to date. The review supports the consideration of peer challenge across the professions and the subsequent evaluation of its use and outcome. The review highlights approaches and issues to consider if/when peer review processes are incorporated into the process of assessing allied health professions continuing fitness to practise and how it could be implemented in different AHP groups. It is hoped the review helps regulatory bodies and teams as they decide whether/when to research and implement peer review processes and how to support staff during the process to optimise its role in improving care.

Conflict of Interest statement

Public Health England and South Western Ambulance Service NHS Foundation Trust joint funded the research project module for ST as partial fulfilment of an MSc Paramedic Science undertaken at the Department of Allied Health Professions and Midwifery, School of Health and Social Work, University of Hertfordshire

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567 Supplementary File 1. Key Concepts, Findings and Supporting Studies

Key concepts category	Findings	Study supporting the concepts
What are peer review processes?		
The purpose and nature of peer review processes	The purpose of improving practice and facilitating personal and professional development	Davys et al., 2008; Murie et al. 2009; Aveling et al., 2012; McMillan R, 2012; Bowen-Brady et al., 2019
	It is giving and receiving feedback in an honest and transparent manner	Aveling et al., 2012; Pfeiffer et al., 2012; Lockett et al. 2015
Definition of "peers" involved in the process	The process is conducted by peers working in similar roles and settings	Rolland et al. 2010; Aveling et al., 2012
	There is a lack of clarity about who are the "peers" that should be involved in the process	Davys et al., 2008; Rolland et al., 2010; Pfeiffer et al., 2012; Lockett et al. 2015; Bowen-Brady et al., 2019
The processes of the peer review	The process generally involves a combination of face-to-face components as well as the review of documentation	Roberts et al., 2010; Roberts et al., 2012; Aveling et al., 2012; McMillan R, 2012, Rivas et al., 2012; Slavova-Azmanova et al., 2015
	Peer review processes are complex and subjective	Pfeiffer et al., 2012; Slavova-Azmanova et al., 2015
	Direct observation is one of the key activities during a peer review process	Davys et al., 2008; Rolland et al., 2010; Slavova-Azmanova et al., 2015
Participants' perceptions of peer review processes		
Peer review processes are generally accepted by participants and believes to be beneficial	It is a considered to be an acceptable, constructive and generally positive experience	Rolland et al., 2010; Aveling et al., 2012; McMillan R, 2012; Slavova-Azmanova et al., 2015; Bowen-Brady et al., 2019
	A minority of participants deemed peer review processes to be a bureaucratic exercise	Slavova-Azmanova et al., 2015
	It is seen as an effective change promoter and to mobilise collective action in relation to quality that would not otherwise have happened	Aveling et al., 2012; Roberts et al. 2010; Roberts et al. 2012; Rivas et al. 2012; Lockett et al. 2015; Slavova-Azmanova et al., 2015
	Most participants thought the recommendations were beneficial, adequate and appropriate	Davys et al. 2008; McMillan R, 2012; Slavova-Azmanova et al., 2015; Bowen-Brady et al., 2019
Peer review processes are an opportunity of shared learning and improve team working	There was an increased self-awareness of their own service against standards	Davys et al. 2008; Roberts et al. 2012; McMillan R., 2012; Lockett et al., 2015

	The process was viewed as a two way process where teaching and learning occurred for both parties	Davys et al., 2008; Roberts et al., 2010; Rolland et al., 2010; Roberts et al., 2012; Slavova-Azmanova et al. 2015; Bowen-Brady et al., 2019
Participants felt anxious about the process	Participants felt stressed and anxious about being observed and being challenged	Davys et al., 2008; Rolland et al., 2010; Lockett et al., 2015; Bowen-Brady et al., 2019
	Peer review processes were found to be of greater value when used for formative rather than summative purposes	Davys et al. 2008; McKay et al., 2009; Rolland et al., 2010
	Some participants feared about peer-retribution	Pfeiffer et al., 2012; Lockett et al., 2015
	Some participants worried about upsetting their friends	McKay et al., 2009; Rolland et al., 2010; Lockett et al., 2015
	Subjective scoring/ grading or making a decision whether it is “satisfactory” or “unsatisfactory” may distract from positive recommendations	McKay et al. 2009; Murie et al. 2009; Slavova-Azmanova et al., 2015
	Peer review processes may not be reflecting the whole picture	Rolland et al. 2010; Slavova-Azmanova et al., 2015
	Participants want to put on a good show & being observed affects a performance	Rolland et al. 2010; Davys et al. 2008
	Create a safe environment for both reviewer and reviewees by respect and professionalism.	Aveling et al., 2012; Pfeiffer et al., 2012
	Make the process clear and inform participants of their professional responsibilities - including anonymity	McKay et al. 2009; Rolland et al. 2010; Pfeiffer et al., 2012; Slavova-Azmanova et al. 2015
Improve “buy in” from participants	The process was deemed to be time-consuming with the completing priorities in clinical settings	McKay et al. 2009; Aveling et al., 2012; Lockett et al. 2015; Slavova-Azmanova et al., 2015; Bowen-Brady et al., 2019
	A minority of participants did not foresee/perceive any changes resulting from the practice	Roberts et al. 2012; Slavova-Azmanova et al., 2015
	It can be challenging to get cooperation from more peripheral members	Aveling et al., 2012; Slavova-Azmanova et al., 2015
	It is important to minimise logistic burden	Aveling et al., 2012; McMillan R, 2012; Slavova-Azmanova et al. 2015
	Independent facilitation was important in ensuring inclusion of all voices, maintaining focus on the issue at hand and good timekeeping.	Aveling et al., 2012, Bowen-Brady et al., 2019

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Lessons for Practice

- The time and resources required to successfully implement peer review processes are considered barriers to implementation.
- Evidence from this meta-ethnography supports the consideration of peer review processes as quality improvement tools in health care settings and as part of continuing education and fitness for practice assessments for health care professionals.
- Peer review processes are part of the process of assessing continuing fitness to practice for medical practitioners, nurses and midwives in the for UK but not for Allied Health Professionals: research exploring whether/how to incorporate peer review processes in continuing education and fitness for practice assessments for AHPs is needed.