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Review

Co-production in nursing and midwifery education: A systematic review of the literature

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ABSTRACT

Objectives: Co-producing aspects of nursing and midwifery education is increasingly being used in higher education to try to improve student learning and meet standards set by some professional accreditation bodies. This review aims to identify and synthesise evidence on this pedagogical approach.
Design: Systematic review.
Data sources: Searches were conducted in CINAHL, ERIC, MEDLINE, and PubMed.
Review methods: Four bibliographical databases were searched using relevant search terms between 2009 and 2019. Titles, abstracts, and full text papers were screened. Pertinent data were extracted and critical appraisal undertaken. Data were analysed using the framework approach and findings presented in a narrative summary.
Results: Twenty-three studies were included. Two overarching themes emerged. The first focused on the impact of co-production on nursing and midwifery students, service users, and carers which had five subthemes; 1) acquiring new knowledge and skills, 2) gaining confidence and awareness, 3) building better relationships, 4) feeling vulnerable, and 5) attaining a sense of pride or enjoyment. The second theme centred on factors affecting how co-production was delivered which had three subthemes; 1) human interactional approach, 2) pedagogic quality, and 3) organisational environment.
Conclusion: This review provides a comprehensive update of the literature on co-production in nursing and midwifery education. Tentative evidence exists that participatory approaches could improve learning and positively impact on nursing and midwifery students, service users, and carers. Educators should consider adopting co-production and including students, service users, carers, practice staff, and other relevant stakeholders in this pedagogical process. However, more rigorous research examining how effective co-production is in improving learning over traditional methods is warranted given the additional resources required to deliver it.

1. Introduction

Higher education is transforming as economic and political pressures require universities to expand teaching programmes and widen access to students from different backgrounds, while maintaining financial stability (Naidoo et al., 2011). Funding models vary across countries and may be driven by consumerist approaches with students pursuing qualifications based on employer needs and paying for their education. While some lament the commodification of a once purely intellectual pursuit, others deem this neoliberal trend necessary for a successful economy and society (Saunders and Ramírez, 2017). These changes are bringing a fresh emphasis on pedagogical quality and the student experience. Hence, participatory approaches to teaching and learning that actively involve students and other key stakeholders are becoming more common (Bovill et al., 2011). Although critics highlight this could reduce the autonomy and authority of educators, damage organisational relationships, and reduce learning to individualistic, short-term outcomes (McCulloch, 2009), nursing and midwifery programmes form part of this landscape and some are adapting to it.

Participatory approaches to educating students is described in the nursing, midwifery, and wider healthcare literature via a number of terms that are used interchangeably e.g., co-creation, co-production, co-

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design, involvement, and participation (Suikkala et al., 2018). This review draws on McCulloch's (2009) definition of co-production in higher education which he describes as "*student, lecturers and others who support the learning process as being engaged in a cooperative enterprise, which is focused on knowledge, its production, dissemination and application, and on the development of learners rather than merely skilled technicians*". This approach can take numerous forms. For instance, Kotzé and Du Plessis (2003) designed a student participation in teaching services framework that includes both out of class and in-class co-production activities. Bovill and Bulley (2011) produced a ladder of participation that describes the varying levels with which students can become actively engaged in designing curriculum. Building on this, Healey et al. (2014) described four stages of student engagement starting at consultation and moving onto involvement, participation, and finally partnership. Furthermore, Dollinger et al. (2018) developed a model that summarises the value of co-production in higher education.

In healthcare, previous reviews have looked at service users and carers taking part in assessing nursing students in clinical practice, identifying a number of challenges with this, and highlighting a need for better quality measures to determine learning outcomes (Gray and Donaldson, 2010; Haycock-Stuart et al., 2013). Scammell et al. (2016a, 2016b) also identified eleven studies in a systematic review on service user involvement in undergraduate nursing education. However, this focused on the extent to which service users were involved in pre-registration general nursing education. Therefore, it excluded graduate nursing education, mental health and learning disability service users and related professionals, and other potential stakeholders such as students themselves. Furthermore, a more recent scoping review only examined patient involvement in clinical not academic nursing education (Suikkala et al., 2018). Although the review comprehensively covered a 30-year time span, midwifery was not included and students as co-producers were again overlooked.

Other literature has examined what patients and carers believe nursing or midwifery education should deliver (Rudman, 1996; Forrest et al., 2000; Griffiths et al., 2012; Warren et al., 2017) or reasons why they wish to participate in it (Hickey and Chambers, 2014; McMahon-Parkes et al., 2016), while Coffey et al. (2017) evaluated a training programme that enabled them to do so. Nurse educators and practice nurses views on this approach have also been explored (Torrance et al., 2012; Hickey and Chambers, 2014; Haycock-Stuart et al., 2016; McMahon-Parkes et al., 2016), as have those of nursing students (O'Donnell and Gormley, 2013; McMahon-Parkes et al., 2016). In addition, Speed et al. (2012) reported some of the perceived barriers to service user involvement in nursing education, while other studies have looked at related aspects such as including service users in the recruitment of nursing or midwifery students to university degree programmes (Rhodes and Nyawata, 2011; Rouse and Torney, 2014; Stevens et al., 2017; Warren et al., 2017; Heaslip et al., 2018). As Roxburgh and Beattie (2018) call for nursing students to be involved in the co-production of their own learning experiences, an up-to-date review of the literature encompassing undergraduate and graduate nursing and midwifery education and stakeholders across all disciplines who take part in this is needed.

This systematic review aimed to identify and synthesise literature on co-production in nursing and midwifery education. The questions underpinning the review were; 1) What impact does co-production have on nursing or midwifery students, educators, service users, or other stakeholders? and 2) What factors affect the process of co-production approaches in nursing or midwifery education?

2. Methods

The review followed the Preferred Reporting Items for Systematic Reviews and Meta-Analysis (PRISMA) statement (Moher et al., 2009).

2.1. Search and screening

The Population, Intervention, Comparison, Outcome (PICO) framework was employed to develop the search strategy (Cullum et al., 2013) (see Appendix A). Keywords were entered into four databases; CINAHL (EBSCOHost), ERIC, MEDLINE (Ovid), and PubMed Central in April 2019. The search focused from 2009 onwards as a review of service user involvement in health professional education conducted that year included sixteen studies related to nursing (Morgan and Jones, 2009). An updated search was re-run in December 2019. Endnote (Clarivate Analytics: Philadelphia, PA) 12.0 was used to manage results.

The inclusion criteria were: 1) studies had to contain nursing or midwifery students as learners or results from these groups had to be clearly distinguishable if multiple student populations were involved, 2) some type of co-production method or intervention that had active engagement from stakeholders had to be used in an educational context, and 3) studies had to have empirical data and be published in English. Studies exploring participatory approaches such as nursing or midwifery students being co-researchers that did not have a pedagogical focus were excluded. Studies related to simulated or virtual patients, peer-to-peer learning, or those that centred exclusively on student recruitment or patient narratives were excluded. Literature reviews, theses, proceedings from conferences, and discussion articles were also excluded. Two researchers screened the titles, abstracts, and full text of articles. Those not meeting the inclusion criteria were discarded. Any disagreements were resolved through consensus discussion.

2.2. Critical appraisal

The Joanna Briggs Institute (JBI) critical appraisal tools were used to assess the quality of included studies (Porritt et al., 2014) (Appendix B). Two researchers independently applied the most appropriate checklist (s) based on a study's design. Any disagreements were resolved via a third researcher.

2.3. Data extraction and analysis

Relevant data from each study were extracted (Table 1) and the framework approach employed for analysis. The five phases of the framework approach (Fig. 1), that of familiarisation, identification, indexing, mapping, and charting (Ritchie and Spencer, 2002), were followed to gain a rich understanding of co-production in nursing and midwifery education. N-Vivo QSR 10 was utilised for iterative rounds of analysis by the primary author until clear themes and subthemes emerged. Samples of coding were checked by members of the research team to enhance qualitative rigour and reduce researcher bias.

3. Results

3.1. Characteristics of included studies

Twenty-three studies were included as outlined in the PRISMA diagram (Fig. 2). The quality of included studies was mixed, with 7 rated low quality, 15 rated medium, and one rated high quality. They were published from 2009 to 2019 and took place across a number of different countries (Table 1). Thirteen were from the United Kingdom of which ten were based in England and three in Scotland. One was from New Zealand, Australia, Belgium, Norway, Taiwan, and the USA. Four studies were the same international collaboration involving six countries which were Australia, Finland, Iceland, Ireland, Norway, and the Netherlands (Horgan et al., 2018; Happell et al., 2019a, 2019b, 2019c).

In many cases, those involved in co-production were undergraduate nursing students although several studies combined nursing students, with faculty, and service users (Table 1). In addition, two centred on service users and carers (Atwal, 2018; Felton et al., 2018) and one focused solely on carers (McIntosh, 2018). Only one study included

Table 1
Characteristics of included studies.

No	Author, year, country	Research aims, theory, setting & quality	Methods	Population	Co-production approach	Findings
1	Atwal (2018), UK (England)	Aim: explore the views and experiences of service users and academic staff co-teaching an interprofessional module. Theory: Arnstein's (1969) ladder of citizen participation. Setting: university. Quality: low.	Ethics: not reported. Design: not reported. Data collection: email questionnaire to service users and two unstructured interprofessional community forums. Analysis: thematic analysis.	Learners were 1st year undergraduate nursing students (approx. n = 300).	Process: Service users and carers (n = 11) planned and/or delivered the teaching sessions collaboratively with academic staff. Content: not reported. Delivery: face-to-face seminars. Duration: 10 weekly seminars of approximately 30 students over six weeks.	Service users were motivated to be a co-collaborator, found aspects of the role challenging and perceived positive contributions to student learning and benefits of co-teaching. Organisational issues such as room scheduling, timetables and pay, the short timeframe within which co-production was introduced and lack of consultation and training for it were problematic, although some faculty valued its benefit for student learning.
2	Chan and Schaffrath (2017), USA	Aim: identify teaching strategies for integrative healthcare (IHC – natural products and mind and body practices) that could be included in nursing curriculum. Theory: none reported. Setting: community-based teaching hospital (orthopaedic surgical and general surgical unit). Quality: medium.	Ethics: approval granted. Design: participatory action research. Data collection: reflective journaling, emails, group meetings. Analysis: van Manen's phenomenological (thematic) approach to uncovering themes.	1st year nursing students as co-researchers and learners (Group 1: n = 8 and Group 2: n = 10) and a nurse mentor (IHC practitioner). 17 female and 1 male. All under 21 years of age.	Process: two learning sessions and two hospital-based sessions along with several meetings. Content: training in IHC e.g., foot reflexology, breathing for sleep, lavender aromatherapy which were undertaken with supervision in practice with patients. Delivery: mainly in person, with online discussions. Duration: over 2 semesters, 15-min IHC interventions.	Some students valued IHC knowledge to supplement their general nursing practice and the process seemed to enable them to develop a better 'presence' as a nurse. Students felt their competency in delivering IHC improved with support from the nurse mentor and patients and they could tailor their practice when needed.
3	Debyser et al. (2011), Belgium	Aim: examine the conditions for client feedback for student's learning and performance and the impact of a practical model on this process. Theory: conceptual framework. Setting: inpatient psychiatric unit. Quality: medium.	Ethics: approval granted. Design: qualitative explorative research design. Data collection: observation and semi-structured interviews (n = 16). Analysis: qualitative analysis.	Psychiatric inpatient clients (n = 7), nurses (n = 2) and teachers (n = 2) as assessors and psychiatric nursing students (n = 4) as learners.	Process: Clients participated in assessment of a nursing student. Clients coached by nurse. Feedback questions used in formal feedback meetings. Debriefing of client and student facilitated by a nurse. Content: not reported. Delivery: in person. Duration not reported.	Participants seemed to like the flexibility of the participatory framework as clear guidelines for working together were needed. Client feedback was meaningful in a safe environment supported by nursing staff. Client feedback appeared to support student learning. Some students and teachers had initial doubts and anxieties about the interaction and whether it would add value.
4	Duers (2017), UK (Scotland)	Aim: create and evaluate a feedback tool with student nurses for peer review/self-assessment. Theory: Vygotsky's (1934) theory of the Zone of Proximal Development (ZPD). Blumer's (1969) theory of Symbolic Interactionism. Setting: university. Quality: High.	Ethics: approval granted. Design: qualitative in nature. Data collection: focus groups (n = 4), a video recorded practical task and individual interviews (n = 6). Analysis: theme driven.	Student nurses (n = 25) at various stages in their 3-year BSc Nursing programme were co-researchers.	Process: nursing students created a peer review/self-assessment feedback form. Content: questions proposed on human qualities such as kindness and compassion, skills such as organisation and communication, strengths and weaknesses, and areas for improvement. Delivery: not applicable. Duration: 2 h.	Nursing students wanted a feedback form that evaluated qualities like compassion and kindness, along with knowledge and skills. They valued peer review and felt it could improve confidence, self-esteem and their ability to be a good nurse. Students recognised being a peer-review required skills such as good communication and diplomacy.
5	Felton et al. (2018), UK (England)	Aim: evaluate a service user and carer co-facilitated approach to teaching nursing students. Theory: none reported. Setting: university. Quality: medium.	Ethics: approval granted. Design: qualitative evaluation. Data collection: questionnaire with open ended questions (n = 198). Analysis: thematic analysis.	Learners were 14 groups of 1st year nursing students (adult, child, mental health and learning disability). Average group size n = 25.	Process: service users (n = 10) helped design curricula and along with carers (n = 4) co-facilitated small seminar group activities with a lecturer. Content: person centred nursing care module exploring patients' lived	Some students found the co-facilitated approach engaging, enabling a deeper understanding of person-centred care. It also helped them link theory to practice and identify strategies to involve service users in nursing

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Table 1 (*continued*)

No	Author, year, country	Research aims, theory, setting & quality	Methods	Population	Co-production approach	Findings
					experiences using group discussion and role play. Delivery: in person. Duration: not reported.	care delivery, while improving their communication skills.
6	Happell et al. (2019a), Australia, Finland, Iceland, Ireland, Norway and The Netherlands	Aim: evaluate the impact of 'Experts by Experience' (EBE) nursing education. Theory: none reported. Setting: university. Quality: low.	Ethics: approval granted. Design: pre and post-test design. Data collection: Mental Health Nurse Education Survey, the Health Care version of the Opening Minds Scale, and Consumer Participation Questionnaire. Analysis: descriptive statistics and t-tests.	Learners were undergraduate nursing students (n = 194) from Australia, Ireland and Finland. Further breakdown of location not provided. 83% female. Majority were aged 18–29.	Process: co-produced a mental health nursing module with mental health service users (EBE) and nursing academics. Content: Students reflect on thoughts and feelings towards people labelled with mental illness, diagnostic categories, and recovery concepts. Also engage in dialogue with an EBE educator. Delivery: not reported. Duration: not reported.	EBE can positively influence nursing students' attitudes to mental illness, consumer participation, and mental health nursing. The findings across three countries suggests co-creating mental health nursing education in this way has international relevance and importance.
7	Happell et al. (2019c), Australia, Finland, Iceland, Ireland, and The Netherlands	Aim: elicit students' views on the delivery of a co-produced (by an 'Expert by Experience') undergraduate mental health nursing learning module. Theory: none reported. Setting: university. Quality: medium.	Ethics: approval granted. Design: qualitative exploratory. Data collection: focus groups (n = 8). Analysis: thematic analysis by nurse academics and 'Experts by Experience' (EBE).	Learners were nursing students (n = 51) (general and mental health). Australia (n = 6), Ireland (n = 25), Norway (n = 2), Finland (n = 10), The Netherlands (n = 5), and Iceland (3).	Process: learning module was co-produced by EBE and mental health nurse academics. Content: not reported. Delivery: not reported. Duration: not reported.	Nursing students felt widening access to the curriculum to nursing students from other disciplines e.g., adult and having more EBE led sessions was important as well as moving the module to the beginning of the programme and including the content in the assessment. Students also suggested adding more diversity of EBE stories and providing a better balance between positive and negative experiences of mental illness and health services.
8	Happell et al. (2019b), Australia, Finland, Iceland, Ireland, Norway and The Netherlands	Aim: explore nursing students' experiences of 'Experts by Experience' (EBE)-led mental health nursing education. Theory: none reported. Setting: university. Quality: medium.	Ethics: approval granted. Design: qualitative exploratory. Data collection: focus groups (n = 8). Analysis: thematic analysis by nurse academics and an EBE group.	Learners were undergraduate mental health nursing students (n = 51). Australia (n = 6), Ireland (n = 25), Norway (n = 2), Finland (n = 10), The Netherlands (n = 5), and Iceland (n = 3).	Process: mental health nursing unit of study that was co-produced by an Expert by Experience (EBE) and nurse educators. Content: not reported. Delivery: not reported. Duration: not reported.	Student felt they had a better understanding of people with mental health illness, both their needs and goals, after being taught by EBEs. Nursing students reported understanding the whole person, not just the disease, and appreciating recovery outside a purely biomedical model.
9	Haraldseid et al. (2016), Norway	Aim: to explore and describe the actual process of student involvement when developing technological learning material for clinical skills training in a Norwegian nursing faculty. Theory: none reported. Setting: university. Quality: medium.	Ethics: approval granted. Design: explorative qualitative study. Data collection: focus group interviews, field notes and student notes. Analysis: content analysis.	Co-producers and learners were undergraduate nursing students enrolled (n = 165) in the clinical skills course. 19 students across four focus groups. 11 students in two practical training sessions.	Process: creating technological learning material with students for clinical skills training. Content: separate publication cited. Delivery: Portable SimPad tablets. Duration: nine different supervised training sessions wherein a teacher-led group of 10–12 students practiced the 13 different scenarios.	Students became advocates for their own learning needs through the process. Five learning needs were identified; 1) clarification of learning expectations, 2) help to recognize the bigger picture, 3) stimulation of interaction, 4) creation of structure, and 5) receiving context specific content.
10	Horgan et al. (2018), Ireland, Norway, Australia, Finland, The Netherlands and Iceland	Aim: to ascertain views on service user involvement in mental health nursing education. Theory: none used and this was discussed. Setting: university. Quality: medium.	Ethics: approval granted. Design: qualitative descriptive design. Data collection: eight focus group interviews were conducted (n = 50). Analysis: thematic analysis.	Mental health service users were co-producers (n = 50) from Finland n = 7, Australia n = 9, The Netherlands n = 5, Norway n = 8, Ireland n = 14, and Iceland n = 7.	Process: involved service users in the entire research process (design, data collection, and data analysis) so that it was co-produced. Participants in this study were not part of the research team. Content: not reported. Delivery: not reported. Duration: not reported.	Lay experts seemed to enhance students' understanding of mental health recovery as they heard first hand human experiences. Communication and self-reflection appeared to allow students to explore their own thoughts and feelings about mental

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Table 1 (*continued*)

No	Author, year, country	Research aims, theory, setting & quality	Methods	Population	Co-production approach	Findings
						distress and compare it to those from service users. These interactions may have helped address stigma and elicited better attitudes from nursing students during mental health placements.
11	Kuti and Houghton (2019), UK (England)	Aim: evaluate nursing students' views on Patient as a Coach Team (PaCT) programme. Theory: none reported. Setting: university. Quality: Low.	Ethics: not required. Design: not reported. Data collection: survey. Analysis: thematic analysis.	Learners were adult nursing students and nursing associates took part in 10 Patient as a Coach Team sessions. n = 321 completed questionnaire.	Process: service users led a workshop discussing lived experiences and students complete a reflective worksheet. Content: based on 6C's – care, compassion, competence, courage, commitment and communication. Delivery: in person. Duration: 2 PaCT sessions per academic year over 3 years.	Nursing students strongly agreed (79%) discussions were relevant, the inclusion of the service user was helpful (84%) and the session assisted learning (77%). The PaCT enables students to appreciate the patient perspective and motivated them to improve nursing practice.
12	Liang et al. (2019), Taiwan	Aim: develop, implement and evaluate resilience enhancement (RE) education with nursing students during clinical practicum. Theory: none reported. Setting: hospital placements (wards, critical care, operating room). Quality: medium.	Ethics: approval granted. Design: participatory action research. Data collection: observation, reflective diaries of clinical practice events, group discussion and interviews. Analysis: content analysis.	Senior nursing students (n = 28) consisting of four 7-member groups were co-researchers and learners. All female, aged 22 to 24. Twelve were interviewed at the end of the project.	Process: peer led discussions on RE and clinical centre training with regular feedback. Content: four topics — self-confidence, coping strategies, academic and psychological competency, and positive thinking. Delivery: in person. Duration: six workshops at one-week intervals.	Students were facilitated to identify stressors and how to deal with adversity and felt better equipped after the process to handle difficult situations in practice. The RE project improved confidence and interpersonal skills with students reporting better communication as a result of their involvement. Support from peers was welcomed and nursing students learned how to adapt to challenges in practice.
13	Maplethorpe et al. (2014), UK (England)	Aim: not clearly described – hypothesis that if service users facilitated clinical supervision in the classroom it could be valuable learning resource. Theory: none reported. Setting: university. Quality: medium.	Ethics: approval granted. Design: not reported. Data collection: three focus groups (one of 7 service users and two with 13/50 nursing students). Analysis: not described.	Learners were students enrolled in a Diploma/ BSc Mental Health Nursing (n = 50). People who had used mental health services (n = 7) were co-teachers or 'supervisors'.	Process: mental health service users facilitated clinical supervision in the classroom, debriefed by nurse educator. Content: 4-day preparation course for service users. Delivery: in person. Duration: ten clinical supervision groups in total for a period of 1 h, 'supervisors' worked in pairs on two or three to deliver clinical supervision.	Service users (supervisors) felt they helped nursing students reflect on practice and facilitated a deeper understanding of mental health services. Students appreciated opportunities to discuss their caring role but some had concerns about discussing emotionally sensitive subjects with service users and tailored their conversations accordingly.
14	McIntosh (2018), UK (Scotland)	Aim: explore perceptions family carers about being involved in nursing education. Theory: none reported. Setting: university (mental health nursing programme). Quality: medium.	Ethics: approval granted. Design: Interpretive Phenomenology (IPA). Data collection: individual interviews. Analysis: IPA analytical process.	Family carers (n = 5) as co-educators. All female.	Process: Carers involved in student recruitment, teaching and learning activities, module and programme development and student assessment. Content: not specified. Delivery: in person. Duration: all participants contributed to the programme from 1 to 7 years.	Family carers got involved as they wanted to improve mental health nursing education and encourage partnership approaches. Carers felt their unique perspectives could improve the recruitment of students to nursing programmes and enhance teaching as their stories could help students the challenges carers faced with health services and caring for people with different conditions.
15	Munoz et al. (2017), UK (Scotland)	Aim: examine how nursing students conceptualise dignity and their opinions on how to teach it at all levels of education. Theory: none reported.	Ethics: approval granted. Design: participatory research approach. Data collection: observational notes and student discussions at	Students across three years of an undergraduate nursing programme (n = 35) as co-producers across three workshops.	Process: Three workshops with students (n = 12–16) from each of the three cohorts. Content: Workshop 1 = serious game, Workshop 2	Students wished to improve their understandings of dignity as well as recognize and apply it in practice. Some wanted experiences

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Table 1 (*continued*)

No	Author, year, country	Research aims, theory, setting & quality	Methods	Population	Co-production approach	Findings
		Setting: university. Quality: medium.	workshops. Analysis: thematic analysis.		= voting technique to develop timeline of dignity education, Workshop 3 = storyboards of timeline with posters. Delivery: in person. Duration: not reported.	providing such care and tools to help reflect them reflect on it. Students conceptualised dignity in a number of ways associating it with memory, embodied practice, and as a personal experience.
16	Rhodes (2013), UK (England)	Aim: investigate the impact of service user involvement on student learning and professional practice. Theory: none reported. Setting: university and health service. Quality: low.	Ethics: approval granted. Design: single case study. Data collection: two interviews, one on completion of degree and 12-month follow up. Analysis: interpretative approach using "The Listening Guide".	Nursing student (n = 1) who completed a 3-year pre-registration children's nursing programme that included service user involvement.	Process: not described. Content: not reported. Delivery: not described. Duration: not reported.	The nursing student reported service users enabled her to learn more about their real-life experiences and become more self-aware. This facilitated the development of coping strategies that could be used in practice and emphasised the importance of professional relationships and boundaries.
17	Schneebeli et al. (2010), New Zealand	Aim: not clearly stated but a service user was involved in undergraduate nursing education. Theory: none reported. Setting: university. Quality: low.	Ethics: not required. Design: not reported – evaluation of implementation of service user involvement. Data collection: survey with open ended questions. Analysis: thematic analysis.	Learners were nursing students who completed the survey (n = 30/78).	Process: variety of activities run by a nurse educator and a service user such as lectures, tutorials, a group project and role play. Content: recovery philosophy, theoretical and clinical capabilities on mental health service provision. Delivery: in person. Duration: 8-week mental health course in 2nd year of a 3-year Bachelor of Nursing programme.	Students commented that involving a service user helped to normalise their lived experiences of mental health services and highlighted the importance of individualised care. Nursing students requested more service user involvement in the curriculum to help dissolve myths about people with mental health issues and learn more about interventions they could offer as future nurses.
18	Sidebotham et al. (2017), Australia	Aim: is a Participatory Curriculum Development (PCD — 10 phase model) approach effective in developing professional curriculum. Theory: not reported. Setting: university. Quality: medium.	Ethics: approval granted. Design: descriptive exploratory approach. Data collection: interviews with stakeholders who took part in the PCD process. Analysis: thematic.	Interviewees (n = 8) included Midwifery Industry Partner (n = 2); Midwifery Student (n = 1); University Curriculum Advisor (n = 2); Midwifery Academics (n = 2); Maternity Services Consumer Advocate (n = 1)	Process: steering group set up to oversee the PCD project which included wide representation and active involvement from each of the sub-groups of stakeholders. Content: shared values, philosophy, vision and goals, process outcomes. Delivery: in person. Duration: not reported.	Some participants felt the PCD process had benefits for all stakeholders including educators, students, practitioners and service users, with a perception that the curriculum was truly shared. The operational PCD model used appeared to work well to guide the development of a contemporary midwifery programme and facilitate collaboration between multiple stakeholders.
19	Smith et al. (2016), UK (England)	Aim: explore students' perceptions of the usefulness, impact and benefits/challenges of learning disability (LD) service users teaching in nursing education. Theory: none reported. Setting: university. Quality: low.	Ethics: not required. Design: not reported. Data collection: online survey with open ended questions. Analysis: descriptive statistics and framework method for qualitative analysis.	Learners were 1st year adult, child, learning disability and mental health nursing students. 144 completed survey out of 254 who attended the co-taught session.	Process: LD service users and carers developed and delivered a teaching session. Rehearsal with feedback from nurse lecturer. Content: experiences of accessing and receiving health and social care. Delivery: in person. Duration: two 45-min teaching sessions.	92% students agreed it was a useful learning experience. 87% agreed it improved their understanding of what it was like to have a learning disability. 75% agreed they felt more comfortable interacting with someone with a LD after the session. Nursing students learned to be non-judgemental, to listen more and communication well due to the session.
20	Speers and Lathlean (2015), UK (England)	Aim: examine how mental health nursing students and service users experience client feedback about student's interpersonal	Ethics: approval granted. Design: Participatory Action Research (PAR). Data collection: semi-structured individual or	Group 1 of mentors (n = 6), service users (n = 4) and a lecturer (lead researcher) designed initial system. Group 2 of	Process: group worked together to create student feedback system and modifying it based on real-world experiences of it.	Results indicate service users had positive experiences of feedback system, whereas mental health nursing student

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Table 1 (*continued*)

No	Author, year, country	Research aims, theory, setting & quality	Methods	Population	Co-production approach	Findings
		competence. Theory: none reported. Setting: mental health nursing student practice placement. Quality: medium.	group interviews with students, service users and mentors. Analysis: some type of qualitative coding.	students (n = 9), mentors (n = 6) and service users (n = 10) tested the feedback system.	Content: not reported but centred on mental health nursing students' interpersonal skills. Delivery: in person, feedback was verbal and written. Duration: group met for 2 h every 3 months for two years (five PAR cycles).	experiences were mixed. Students who had stronger self-efficacy were more willing and able to ask for feedback than less confident students. Service user feedback appeared to enable students to learn new knowledge or skills. Some cultural changes are needed to ensure mental health nursing students are able to engage with this type of feedback.
21	Stacey and Pearson (2018), UK (England)	Aim: explore student learning through reflection on feedback from service users with experience of mental distress. Theory: theory of threshold concepts. Setting: university (simulated scenarios). Quality: medium.	Ethics: ethical issues discussed. Design: not reported. Data collection: 15 student reflective assignments on feedback arising from the service user, lecturer and themselves. Analysis: deductive content analysis.	Learners were final year mental health nursing students on a Graduate Entry Pre-Registration programme.	Process: co-produced interpersonal skills assessment. Content: students conducted initial interview in a simulated scenario with a person with experience of mental distress which was filmed and observed by a mental health practitioner. The service user also gave verbal and written feedback to the student. Delivery: in person. Duration: 30 min interaction with service user and 15 min feedback.	It appeared students learned new knowledge/ skills by gaining feedback from a service user with experience of mental distress. Some students were anxious about this approach as they were used to traditional forms of feedback and lacked confidence in their abilities at times.
22	Stickley et al. (2009), UK (England)	Aim: explore the involvement of service users in curricula design and teaching delivery and examine this affects the perceptions of mental health nursing students and service users. Theory: none reported. Setting: university. Quality: low.	Ethics: approval granted. Design: participatory action research. Data collection: nine focus groups with students (4 before, 5 after teaching), questionnaires after each teaching session, research diaries also used. Analysis: some type of qualitative analysis.	Steering group was half academic and half mental health service users (n = 16). Nursing students n = 50 in focus groups.	Process: participation of service users in curricula design and teaching delivery (four work streams). Four teaching sessions with approximately 60 students. Content: not reported. Delivery: in person. Duration: 3-year project.	Students like teaching being delivered by service user and valued their first-hand experience as it could improve empathy and communication skills. However, some had concerns that they may introduce their own agenda into the curriculum. Service user trainers were keen to improve nursing education and make a positive impact although some expressed nervousness about teaching.
23	Stickley et al. (2010), UK (England)	Aim: desirability and efficacy of the involvement of service-users in mental health nursing student assessment. Theory: none reported. Setting: mental health nursing student practice placement. Quality: medium.	Ethics: approval granted. Design: participatory action research. Data collection: focus groups and interviews with students, qualified nurses and inpatients. Analysis: content analysis.	Stage 1 – group of lecturers (n = 3), clinical psychologist (n = 1) and service-user consultancy (n = 2). Stage 2 – 2nd and 3rd year nursing students (n = 15) and service-users (n = 16). Students who declined were interviewed (n = 8).	Process: stage 1 – group developed and piloted a feedback assessment tool. Stage 2 – assessment process between nursing students and service user assessors. Content: assessment tool included attitude, communication skills, personal awareness, knowledge and development. Delivery: in person. Duration: not reported.	Both nursing students and service-users thought the assessment feedback would be beneficial, improving therapeutic relationships and care. However, some students were concerned about increases in workload and felt vulnerable about receiving negative feedback. Assessment models involving service users should be tailored to the needs of students and more research on how these are implemented and evaluated are needed.

midwifery students, academics, service users, and industry partners (Sidebotham et al., 2017). In most instances, the characteristics of participants such as their gender, age, ethnicity, and socioeconomic status were not described. The majority of studies used some type of qualitative study design, with participatory action research being favoured in six cases (Chan and Schaffrath, 2017; Liang et al., 2019; Munoz et al., 2017; Speers and Lathlean, 2015; Stickley et al., 2009). Three employed a descriptive quantitative approach (Schneebeli et al., 2010; Smith et al., 2016; Kuti and Houghton, 2019) and one employed a mix of methods (Atwal, 2018). One undertook a quasi-experimental design (Happell et al., 2019c). No study demonstrated sufficient rigour to determine the efficacy of a co-produced educational intervention on student learning.

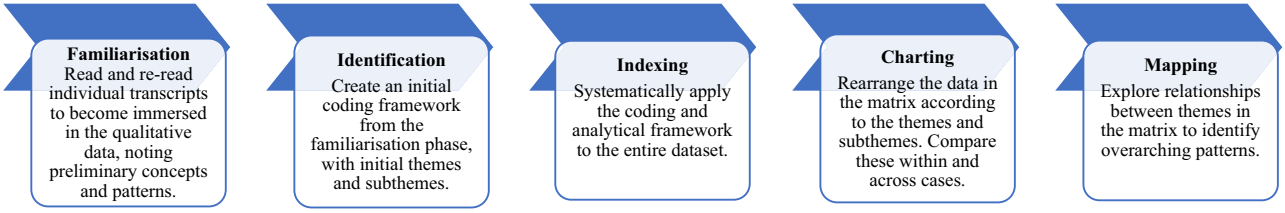

Fig. 1. The framework approach.

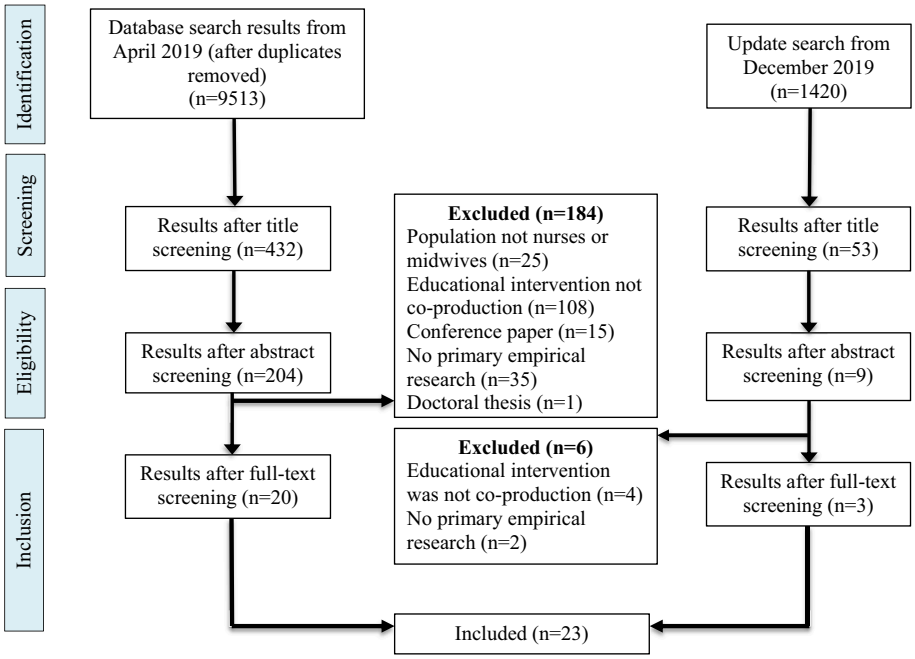

Fig. 2. PRISMA flowchart.

3.2. Description of interventions

The co-production approaches used in the included studies tended to vary and in some cases were not explained in detail. Co-designing curricula and educational resources with students, service users or carers (Atwal, 2018; Felton et al., 2018; Happell et al., 2019c, b, c; Haraldseid et al., 2016; Liang et al., 2019; Munoz et al., 2017; Sidebotham et al., 2017; Smith et al., 2016; Speers and Lathlean, 2015; Stacey and Pearson, 2018; Stickley et al., 2009), along with co-teaching with service users or carers (Atwal, 2018; Horgan et al., 2018; Kuti and Houghton, 2019; Schneebeli et al., 2010; Smith et al., 2016; Stickley et al., 2009) were some of the tactics used. Clients or carers participating in the assessment or supervision of nursing students (Debyser et al., 2011; Maplethorpe et al., 2014; Stickley et al., 2010) or co-producing and performing peer-assessment among students was also employed (Duers, 2017). Furthermore, McIntosh (2018) involved carers in the recruitment of students to a nursing degree programme along with other activities such as co-teaching. The frequency, intensity, or duration of the co-production process or co-produced educational intervention were often not described in detail. In a handful of cases, theory was used to underpin the process or its evaluation such as Arnstein (1969) ladder of citizen participation (Atwal, 2018). The theory of the zone of proximal development (Vygotsky et al., 1962) and theory of symbolic interactionism (Blumer, 1986) were employed in one study (Duers, 2017), while Stacey and Pearson (2018) applied the theory of threshold concepts (Meyer and Land, 2006). How these were operationalised in the studies was rarely described in detail.

Co-production was used mainly in university settings and delivered via face-to-face methods although one study combined online discussions with hospital based training sessions (Chan and Schaffrath, 2017). However, three studies occurred in a mental health practice placement (Stickley et al., 2010; Debyser et al., 2011; Speers and Lathlean, 2015), another across a variety of hospital placements (Liang et al., 2019), while Rhodes (2013) used both university and health service premises for co-production activities.

Two overarching themes, 1) impact of co-production, and 2) factors affecting the co-production process, emerged across the 23 studies. There were five subthemes under the impact of co-production and three subthemes under factors affecting the co-production process. Several studies noted a range of subthemes a number of times (Table 2).

3.3. Impact of co-production

Overall, co-production seemed to positively impact on nursing and midwifery students, services users, and carers as seen across five subthemes (Table 2), although none pertaining to educators emerged. Table 3 provides illustrative quotes from included studies to support each of these subthemes.

3.3.1. Acquiring knowledge and skills

Many studies reported nursing students gaining new knowledge or skills from receiving co-produced educational interventions. Skills such as empathy, reflection, critical thinking, and communication among others were noted, while knowledge around person centred or holistic care, patient experience, and translating theory into practice were acquired (Stickley et al., 2009; Schneebeli et al., 2010; Debyser et al.,

Table 2
Summary of identified themes and subthemes.

No	Themes	Theme 1: Impact of co-production					Theme 2: Factors affecting the co-production process		
	Study	Subtheme 1.1: Acquiring knowledge and skills	Subtheme 1.2: Gaining confidence and awareness	Subtheme 1.3: Building better relationships	Subtheme 1.4: Feeling vulnerable	Subtheme 1.5: Attaining a sense of pride and achievement	Subtheme 2.1: Human interaction approach	Subtheme 2.2: Pedagogic quality	Subtheme 2.3: Organisational environment
1	Atwal (2018)	O	X			X	O	O	O
2	Chan and Schaffrath (2017)	O					X		
3	Debyser et al. (2011)	X	X			O	O		O
4	Duers (2017)	O	O					O	
5	Felton et al. (2018)	O	X						
6	Happell et al. (2019a)	O							
7	Happell et al. (2019c)	O			X			O	O
8	Happell et al. (2019b)	O							
9	Haraldseid et al. (2016)	O					X	O	
10	Horgan et al. (2018)	O							X
11	Kuti and Houghton (2019)	O	X	X				O	
12	Liang et al. (2019)	O	O						
13	Maplethorpe et al. (2014)	O	X		O	X		O	
14	McIntosh (2018)	O	X		O	O		O	
15	Munoz et al. (2017)	O						O	
16	Rhodes (2013)	O		X					
17	Schneebeli et al. (2010)	O						O	
18	Sidebotham et al. (2017)		O	X		X	O		O
19	Smith et al. (2016)	O	O	X	X			X	X
20	Speers and Lathlean (2015)	O	O	O	O	O	O		
21	Stacey and Pearson (2018)	O	O		O			O	
22	Stickley et al. (2009)	O		X		X	O	O	
23	Stickley et al. (2010)	X	O	X		X	X		O
	Total number of studies including subtheme	22 (Major)	13 (Major)	7 (Minor)	6 (Minor)	8 (Minor)	8 (Minor)	12 (Major)	7 (Minor)

Legend: Major = more than 50% (≥12 studies) have included subtheme, Minor = less than 50% (<12 studies) have included subtheme, O = Subtheme noted two or more times, X = Subtheme noted once.

2011; Rhodes, 2013; Maplethorpe et al., 2014; Speers and Lathlean, 2015; Haraldseid et al., 2016; McIntosh, 2018; Smith et al., 2016; Duers, 2017; Atwal, 2018; Felton et al., 2018; Horgan et al., 2018; McIntosh, 2018; Happell et al., 2019c, b, c; Kuti and Houghton, 2019). Nursing students who actively participated in developing a co-produced educational intervention also seemed to learn certain knowledge and skills such as risk management, simulation technology, and integrative healthcare (Stickley et al., 2010, Haraldseid et al., 2016, Chan and Schaffrath, 2017, Duers, 2017, Munoz et al., 2017, Stacey and Pearson, 2018, Liang et al., 2019).

3.3.2. *Gaining confidence and awareness*

Learners in some studies reported becoming more self-aware and gaining confidence in their nursing abilities. This seemed to stem from listening to service users or other students, or getting specific feedback from them which stimulated reflection and appeared to lead to greater self-efficacy (Stickley et al., 2010, Debyser et al., 2011, Speers and Lathlean, 2015, Smith et al., 2016, Duers, 2017, Felton et al., 2018, Stacey and Pearson, 2018, Kuti and Houghton, 2019, Liang et al., 2019). A few studies found that certain service users or carers became more confident when delivering teaching (Speers and Lathlean, 2015; Atwal, 2018), while others became more self-aware when reflecting on and telling their personal stories to students (Maplethorpe et al., 2014, Speers and Lathlean, 2015, Sidebotham et al., 2017, Atwal, 2018, McIntosh, 2018).

3.3.3. *Building better relationships*

A few studies noted that the nurse or midwifery-client relationship appeared to improve as a result of co-producing an aspect of education, as service users, students, and educators had time to work together more

Table 3
Illustrative quotes from included studies supporting Theme 1: Impact of co-production.

Subtheme 1: Acquiring knowledge and skills
"I felt I became more critical of the methods used at the hospital… It [being taught by the EBE] got you to think more about why things are done as they are done (Iceland) She [EBE] really empowered me to want to be more and educate myself more around clients and how they actually feel within the services rather just being concerned by the medical model or the nursing model." (Happell et al., 2019c, Six countries, Expert-By-Experience designing and delivering teaching)
"Before the session if I had come across a service user with a learning disability, I would approach their family or friend with them, now I will approach them and give them the chance to answer me back if they can." (Smith et al., 2016, UK, Learning disability service users and carers developed and delivered a teaching session)
Subtheme 2: Gaining confidence and awareness
"Definitely it was a good experience to see how other people perceive you and to see if you come up with the same as the other people. You can identify your strengths and weaknesses and if someone else identifies your strengths it reinforces that and it boosts your confidence up a good bit…because I was peer reviewed and I had my strengths the same as on the peer review and it is a good confidence boost. It does show there are things that you are doing well — so carry on doing." (Lucy). (Duers, 2017, UK, Student nurses created a peer review/self-assessment feedback form)
"It was interesting to observe different teaching styles. I enjoyed all of [the seminars] and felt my confidence growing in sharing my stories and experiences. I was encouraged by how the students responded to me, listening attentively and sharing their own feelings and responses." (Atwal, 2018, UK, Service users and carers co-teaching an interprofessional module)
Subtheme 3: Building better relationships
"You realize that… is actually a person as well… and incorporate that into your nursing care. . .. my relationships with patients and their families seem to have been a lot stronger." (Rhodes, 2013, UK, Impact of service user involvement on student learning and professional practice)
"I think that how nurses are with me is really important….some aren't approachable and this really matters. I think this feedback thing is a good idea because it helps give nurses insight and just doing the feedback helps you to build a better relationship.…It used to feel like 'nurses against clients' but things like this make it feel more level" (Speers and Lathlean, 2015, UK, Service users/nurse mentor designing student feedback)
Subtheme 4: Feeling vulnerable
"Inside I was panicking that I had drawn the conversation towards a sensitive subject and how I was going to support her. On the outside I tried to appear calm as I was aware that anything other than a confident, compassionate ability to respond to her distress might reinforce any negative feelings citation." (Stacey and Pearson, 2018, UK, Mental health nursing students co-produced interpersonal skills assessment)
"…so for me, it is a positive thing, but it is draining."; "…you are re-visiting the negative all the time – but that is the message you need to get over to the students.", "Horrendous, mobiles should be off and away … Oh I got cross at that"; "…chatting up the back, that is really upsetting" (McIntosh, 2018, UK, Carers involved in nursing education, Participant quote)
Subtheme 5: Attaining a sense of pride or enjoyment
"I felt very nervous beforehand, but the session went very well.' 'Now I'm excited about doing more. It gave me a great feeling of satisfaction and pride.' 'I feel it was worthwhile, enjoyable both for myself and the students, I am happy to be a facilitator – I enjoy the teaching.'" (Stickley et al., 2009, UK, Mental health services users in design and deliver of teaching)
"The greatest benefit I've got was hope because the students were really very dedicated and very compassionate." (Maplethorpe et al., 2014, Service users facilitated clinical supervision in the classroom)

collaboratively (Stickley et al., 2010, Rhodes, 2013, Speers and Lathlean, 2015, Smith et al., 2016, Sidebotham et al., 2017, Kuti and Houghton, 2019).

3.3.4. Feeling vulnerable

Nursing students were sometimes described as feeling uncomfortable or demoralised when taking part in co-producing learning or assessment activities. This was reported more often in the mental health field due to students concerns of negatively impacting service users or hearing difficult life stories, which sometimes prevented them from engaging fully (Maplethorpe et al., 2014, Smith et al., 2016, Speers and Lathlean, 2015, Stacey and Pearson, 2018, Happell et al., 2019c). Service users also reported feeling annoyed when students disengaged from learning as they felt this devalued their contribution. In one instance, a carer reported feeling tired after divulging difficult personal experiences to nursing students (McIntosh, 2018).

3.3.5. Attaining a sense of pride or enjoyment

Some service users and carers seemed to enjoy the process of co-producing higher education, as they felt their expertise was appreciated and took pride in working within teaching teams and contributing to learning among nursing and midwifery students (Stickley et al., 2009, 2010, Debyser et al., 2011, Maplethorpe et al., 2014, Speers and Lathlean, 2015, Sidebotham et al., 2017, Atwal, 2018, McIntosh, 2018).

3.4. Factors affecting the co-production process

Three major subthemes emerged in relation to the process of co-producing nursing and midwifery education; 1) human interactional approach, 2) pedagogic quality, and 3) organisational environment. Table 4 provides illustrative quotes from included studies to support each of these subthemes.

3.4.1. Human interactional approach

The level of confidence and comfort different stakeholders experienced when undertaking co-production activities seemed to affect their delivery. In some cases, service users were confident in their ability to take part in participatory approaches to teaching and learning or this developed over time with support from nursing faculty (Stickley et al., 2009, Maplethorpe et al., 2014, Speers and Lathlean, 2015, Atwal, 2018). Furthermore, Duers (2017) noted that nursing students identified confidence as a necessary characteristic to be involved in self-assessment. Other studies highlighted that certain nursing students and service users were not self-assured and anxious about their capacity to engage in co-producing nursing education (Stickley et al., 2009, Speers and Lathlean, 2015). In addition, service users expressed discomfort about assessing nursing students and providing critical feedback as it could affect their confidence, while recognising this may help them learn (Stickley et al., 2010).

Clear roles and responsibilities for those that took part in co-producing nursing or midwifery education appeared helpful, as service users, carers, practice staff, and students had a better idea of how and when to contribute to teaching or assessment (Debyser et al., 2011, Sidebotham et al., 2017, Atwal, 2018). Haraldseid et al. (2016) reported some felt this helped tailor the educational resources to meet student's needs. Where an individual's role or tasks were not clear or conflicted with existing ones such as those of nurse educators, it seemed to cause some problems as service users and carers felt excluded (Atwal, 2018).

A number of studies stressed the importance of developing positive working relationships between everyone involved in co-producing nursing or midwifery education. This was done in a number of ways such as roundtable planning sessions, reflective accounts, and debriefing meetings to improve people's understanding of the different perspectives and contributions of service users, nursing and midwifery students, and teaching staff, and ensure these were valued and included (Stickley et al., 2010, Debyser et al., 2011, Speers and Lathlean, 2015, Chan and Schaffrath, 2017, Sidebotham et al., 2017, Atwal, 2018).

3.4.2. Pedagogic quality

A number of studies reported that curriculum design was important when co-producing nursing education, as some students or practice staff felt it could have been done in a more coherent way, while others were happy it was well designed. A distinct, logical structure with clear learning outcomes and guidelines to follow were suggested as useful elements of curricula (Haraldseid et al., 2016, Duers, 2017, Happell et al., 2019c, Stacey and Pearson, 2018). In Kuti and Houghton (2019) nursing students requested longer sessions, while in Munoz et al. (2017) they suggested patient narratives around dignity be added to curricula prior to clinical placement enabling them to prepare for and make the

Table 4
Illustrative quotes from included studies supporting Theme 2: Factors affecting the co-production process.

Subtheme 1: Human interaction approach
"Because I have done some training before, I don't feel as nervous as perhaps others will feel. When I first did it I was extremely anxious but I do feel a little nervous because there are going to be a lot of students and I'm not used to big groups…", "I probably wouldn't like to tell someone what they were doing wrong. I wouldn't want to hurt them." (Stickley et al., 2009, UK, Mental health services users involved in the design and deliver of teaching)
"We are no doubt appreciated by the majority of lecturers, yet I wonder if there are some who resented us being in the classroom, as it has always been their solo domain." (Atwal, 2018, UK, Service users and carers co-teaching an interprofessional module)
"I think the relationship was the main thing that encouraged me to contribute … It's very satisfying as a consumer representative in maternity care to be approached by a university to get consumer input … to have the education provider value the perspectives of consumer" (Sidebotham et al., 2017, Australia, Mixed group of midwifery students, practitioners, industry, and consumers developing a midwifery programme)
Subtheme 2: Pedagogic quality
"I think that when you do peer-review there should be really strict guidelines on what you are wanting, what you are commenting on rather than just say 'go and watch that." (Duers, 2017, UK, Student nurses created a self-assessment feedback form)
"I would have liked to see the staff and academic work together, link the stories to the learning, to the assessments … We're going to take away so much from what [EBE] has shared, and I thought what she did was excellent, will make us better practitioners down the road, but assessment-wise … this is not what I'm thinking (Australia)" (Happell et al., 2019c, Six countries; Expert by Experience [EBE] in design and delivery of teaching)
"To co-teach in this way required advanced communication skills. Being able to collaborate with different service users who may bring different things to the table, and negotiating the roles we filled in the classroom required me […] to react in a constantly dynamic way. I needed to draw on the teamwork skills I frequently use in practice, but have not previously used in the classroom. While the experience and skills of service users bring a new richness to the learning experience, without specific training, academic staff will have different capacities for adapting to co-production, and this may have a negative impact on the consistency of the teaching offered." (Atwal, 2018, UK, Service users and carers co-teaching an interprofessional module)
Subtheme 3: Organisational environment
"Sixteen comments were coded about practical issues related to lack of space, not enough time, and three students raised concerns about the costs involved." (Smith et al., 2016, UK, Learning disability service users and carers developed and delivered a teaching session)
"For co-teaching to work optimally, it is important that all the parties involved meet beforehand to plan the session and prepare how each will contribute. In this instance I did not have this opportunity and had to co-teach with a service user I did not know. We also did not have time scheduled to debrief after the seminar and learn as we went along. Planning and reflection on the process are essential to work together in a way that is truly collaborative." (Atwal, 2018, UK, Service users & carers co-teaching an interprofessional module, Participant quote)
"The team were very welcoming and I didn't feel that … there may be some hidden agendas and they want to push that … I felt there was a genuine feeling among the team, to seek our own input", "The other thing, in terms of enjoying it, was the leadership. I really liked the consultative and enthusiastic visionary style." (Sidebotham et al., 2017, Australia, Mixed group of midwifery students, practitioners, industry, consumer developing midwifery programme)

most of real-world experiences. Feedback from student peers and service users was also questioned in some cases as not always being appropriate or useful (Duers, 2017, Haraldseid et al., 2016, Stickley et al., 2010).

In a number of studies, nursing students or staff thought the educational content that was developed was engaging and applicable to clinical practice, particularly when the resources were tailored to the local context (Haraldseid et al., 2016, Munoz et al., 2017). On the other hand, nursing students highlighted the content of some of the co-produced material needed refining as they found it difficult to understand (Haraldseid et al., 2016, Duers, 2017) or the resources did not match the knowledge and skills that were expected of them in clinical practice. Happell et al. (2019c) reported some nursing students would have preferred if the experiences of service users were linked directly to their assessment, while others wanted more diverse perspectives to be included particularly in relation to mental health.

How a co-produced educational session or assessment was delivered appeared to impact its success. For instance, patient storytelling seemed to be valued as emotions were used to connect with nursing students (Schneebeli, O′ Brien et al. 2010, McIntosh, 2018). Moreover, small group discussions appeared to work in some cases (Munoz et al., 2017, Kuti and Houghton, 2019) and service user facilitated clinical supervision in others (Maplethorpe et al., 2014). On the other hand, nurse educators stressed that co-teaching with service users could be challenging as they had to adapt their teaching style to ensure service users were included (Atwal, 2018). In Stickley et al. (2009), some nursing students questioned the legitimacy of being taught by service users, while in Smith et al. (2016) they felt face-to-face co-teaching was limited, not offering the flexibility of accessing digitally recorded sessions.

3.4.3. Organisational environment

A few studies noted several challenges when planning and organising co-production. Sometimes room accessibility was an issue, other times a lack of training or skills hampered people's ability to work effectively together to co-produce a resource (Atwal, 2018). How co-production was financed was an issue for some who felt service users should be reimbursed for their time or it was an expensive way to develop educational resources (Smith et al., 2016, Atwal, 2018). When there was an adequate timeframe for stakeholder groups to work together to co-produce nursing education, this was appreciated and valued (Debyser et al., 2011). However, a lack of time to undertake co-production was highlighted in a few studies as negatively impacting the final educational intervention for nursing students and staff in both academic and clinical settings (Smith et al., 2016, Atwal, 2018, Horgan et al., 2018, Happell et al., 2019c). Another issue was that some co-produced activities did not always occur at an optimal time and clashed with other priorities or workload nursing students had, particularly in relation to assessment (Stickley et al., 2010, Debyser et al., 2011, Happell et al., 2019c). A participatory approach when creating nursing or midwifery education with multiple groups seemed to go well when there was a strong partnership and all team members were equally valued and included (Debyser et al., 2011, Sidebotham et al., 2017). This appeared to be facilitated by leaders who created an open, collaborative, and inclusive culture (Sidebotham et al., 2017).

4. Discussion

4.1. Principal findings

This review provides an up-to-date synthesis of the current evidence on co-production in nursing and midwifery education. It identified a number of outcomes; namely acquiring new knowledge and skills, gaining confidence and awareness, building better relationships, and feeling vulnerable that seemed to affect some nursing and midwifery students, service users, and carers. In some cases, service users or carers appeared to gain enjoyment and a sense of pride from taking part in co-producing teaching or assessment. Key elements of the implementation process such as a human interactional approach, pedagogic quality, and the organisational environment were uncovered as building blocks needed to successfully deliver co-production in nursing and midwifery education, although numerous obstacles were also identified.

4.2. Comparison with existing literature

The review findings are supported by other research that has elucidated the benefits of service user participation in educating health professionals (Coffey et al., 2017, Grundy et al., 2017) and student groups. Ezra et al. (2008) examined postgraduate clinical teaching in ophthalmology and noted that patients learned more about their eye condition and believed they made a valuable contribution to the training. Moreover, a review by Hill et al. (2014) showed that radiology

students benefited from service user involvement as it improved their communication skills, although some found listening to cancer patients stories distressing.

Some of the mechanisms identified in this review needed to deliver a co-production process in nursing or midwifery education and the resulting teaching or assessment activity have been described elsewhere. Abboud et al. (2017) emphasised the important roles of faculty facilitator and student peers in enabling doctoral nursing students to co-construct research methods training, along with a suitable space for this type of collaborative forum. Furthermore, educational content was explored by Watson et al. (2020) who gathered students opinions on careers in nursing or care homes to inform the development of new nursing curricula. In Worswick et al. (2015) service users participated in interprofessional education in primary care which required positive working relationships and teamwork to be successful. Furthermore, O'Connor and Andrews (2016) co-designed a mobile application for learning clinical skills with nursing students, highlighting students required some familiarity with the technology and requested the design was quick and simple to use in practice, with accessible content.

4.3. Implications for practice and future research

Given the challenges of delivering co-production in nursing and midwifery education some are concerned it could become tokenistic (McCutcheon and Gormley, 2014). Hence, a number of recommendations are provided based on the review findings. Firstly, further research that applies rigorous experimental methods to determine the effect of co-produced teaching or assessment activities on student learning outcomes is needed. Detailed descriptions of the co-production process and the characteristics of all stakeholder groups involved are also required as nursing and midwifery students, service users, carers, educators, and practice staff from a range of professional groups can vary in many ways. Thus, how these differences may impact co-producing education needs further examination. Co-production would benefit from being planned in detail, with clear roles and responsibilities for each group of participants with the flexibility to adapt to feedback. Secondly, future studies should clearly delineate and differentiate between the process of co-producing a pedagogical intervention and delivering one to a group of learners, so the complexities of these two distinct activities can be better understood and their impact measured. Pedagogical theories could also be applied and refined to add depth of understanding of this participatory approach which might provide a more robust evidence base for co-production in nursing and midwifery education. Thirdly, adequate time, funding, and resources would ensure co-production activities are undertaken to a high standard and be as inclusive, collaborative, and supportive of all stakeholders as possible. These changes could ensure this approach is well developed and sustained within nursing or midwifery programmes to improve student learning, before becoming integrated into education standards and policy.

4.4. Strengths and limitations

This review has a number of strengths such as following a robust systematic search, screening, data extraction, critical appraisal, and analysis process and using best practice guidelines such as PRISMA to improve reporting. However, a number of limitations exist such as the exclusion of conference proceedings, theses, grey literature, and studies that focused purely on nursing or midwifery students or service users as co-researchers meaning some relevant studies may have been missed. The included studies were based in Western, developed countries which may introduce some cultural and socioeconomic bias with higher education being different in low- and middle-income nations. In addition, the majority of included studies were of low to medium quality, the populations, co-production process or educational interventions were often poorly described, and weak study designs tended to be used. This meant comparisons between different stakeholder groups, settings, and types of participatory approaches were not feasible and the effect of a co-produced educational intervention on student learning could not be determined, limiting the utility of the review findings. Hence, caution should be used when interpreting the results.

5. Conclusion

This review provides an update of the evidence on co-production in nursing and midwifery education, which facilitates our understanding of this emerging pedagogical approach. Tentative evidence that it could improve learning emerged as students and staff in practice appeared to acquire some new knowledge and skills. In addition, adopting participatory methods of teaching and assessment could lead to better practitioner-patient relationships by enhancing self-awareness and self-efficacy. The review could be useful for nurse and midwifery educators, students, practice staff, service users and carers, as numerous types of co-production methods and educational interventions along with their mechanisms of delivery and impact were highlighted. Further research that measures the effectiveness of these types of activities in improving nursing and midwifery education and how best to introduce them would be welcome to strengthen the evidence base for this novel approach.

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Credit authorship contribution statement

Siobhan O'Connor: Conceptualization, Investigation, Formal analysis, Data curation, Writing – original draft, Writing – review & editing. **Mengying Zhang:** Investigation, Data curation, Writing – review & editing. **Kimberly Kovach Trout:** Formal analysis, Writing – review & editing. **Anne Kristin Snibsoer:** Formal analysis, Writing – review & editing.

Declaration of competing interest

The authors declare no conflict of interest.

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