Disability, sexual and reproductive health: a scoping review of healthcare professionals' views on their confidence and competence in care provision

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ABSTRACT

Background The sexual and reproductive needs of people with disabilities are often unmet. Healthcare professionals play an important role in meeting these needs.

Objective To explore the views of healthcare professionals on their confidence and competence in providing sexual and reproductive healthcare to people with disabilities.

Methodology Two databases were searched yielding 14 studies included in the review. Studies detailing healthcare professionals' experiences working in the subject area were included alongside results and evaluations of staff training/workshops within the area. Search results were screened for eligibility by the first and second authors and any discrepancies were resolved by the third author. All subsequent stages were carried out by the first author and reviewed by the second and third authors.

Results The study's findings indicate that there is a lack of training, guidelines, patient contact, time, teamwork and collaboration between staff, and a lack of awareness/access to resources within this area. Evaluations of training programmes/workshops showed an increase in knowledge, comfort and skills surrounding the subject. Continuous training would be beneficial to ensure these are maintained at a high level.

Conclusions Overall healthcare professionals felt they lack confidence and competence in providing sexual and reproductive healthcare to people with disabilities. Further research in this area is recommended to assess this in more depth. Development of guidelines, multidisciplinary training programmes and further resources for both staff and patients are recommended.

Key messages

- The sexual and reproductive health needs of people with disabilities are often unmet.
- Staff did not feel confident and competent in providing sexual and reproductive healthcare to people with disabilities.
- Training programmes and workshops within the area showed an increase in knowledge, comfort and skills surrounding the subject.

BACKGROUND

The World Health Organization (WHO) estimates that over 1 billion people globally live with disabilities.[1] A person is considered to have a disability if they have a "physical or mental impairment and the impairment has substantial and long-term adverse effect on their ability to carry out normal day-to-day activities".[2]

Sexual and reproductive health (SRH) is a vital part of a person's overall health, quality of life and well-being,[3] and requires a "positive and respectful approach to sexuality and sexual relationships".[4]

People with disabilities (PwD) are entitled to sexual and reproductive healthcare (SRHC) and have the same rights as people without disabilities.[5] Despite this, PwD have often been overlooked in this healthcare sector, due to the assumption that they are asexual.[6 7] Studies have reported that young PwD and young people without a disability are equally likely to be sexually active[8] and more likely to become infected with sexually

transmitted infections (STIs),[9] highlighting their need for SRHC and education. However, these needs are largely unmet. For example, women with learning disabilities (WwLD) are less likely to receive suitable information on contraception.[10] PwD struggle to receive basic knowledge on the subject, leaving them in the dark about their SRH.[9]

Healthcare professionals (HCPs) play a fundamental role in SRH and education, often serving as the first port of call for PwD. Research suggests that HCPs feel unprepared in addressing the SRH concerns of patients or think that it is not their responsibility.[11] Ensuring HCPs have adequate training that allows them to feel comfortable in addressing the SRH concerns of PwD is paramount for patient satisfaction and meeting their needs.

Review question

This scoping review aimed to explore the views of HCPs on their confidence and competence in providing SRHC to PwD. This was done by examining the experiences of HCPs in working with PwD regarding their SRH. Results of staff training programmes and workshops were analysed to assess if they had an impact on staff confidence and competence.

METHODS

This scoping review was carried out using the Joanna Briggs Institute (JBI) approach for scoping reviews.[12] This approach was used to integrate mixed methods to facilitate data synthesis. The review is reported in line with the PRISMA reporting guidelines for scoping reviews (Appendix 1)[13] . Registration of the study protocol with PROSPERO was not completed as the website advised that a student dissertation should not be submitted (online supplemental table S1). Contact with PROSPERO was made after dissertation completion; however, it was advised that retrospective submission of the study protocol was also not permitted.

Search strategy

In January 2020, multiple search terms were used to search for relevant papers on two electronic databases: Pubmed and Scopus. Using more than one database was done to make the search more comprehensive. Search terms utilised were related to the topics of disability, HCPs and SRH (online supplemental table S2). A language filter was applied for papers available in 'English' (the first language of all three authors); this was applied due to time constraints and no additional resources were available for translation of studies. The reference lists of all fully assessed studies and papers which cited these studies were screened for additional studies.

Study eligibility

The title and abstract of all articles returned by the search strategies were screened by two authors (LEC and ZEC) for relevance and duplicates. Sources for which full text was not available were excluded; hard copies were not requested due to time constraints. All remaining articles were read in full, and inclusion and exclusion criteria were applied (online supplemental table S3). As an example, papers concerning the experiences of PwD surrounding their SRH were excluded. Disagreement about inclusion verdict was resolved by the third author (JB). The following stages were carried out by the first author (LEC) and reviewed by the second and third authors (ZEC and JB).

Assessing methodological quality

The Mixed Methods Appraisal Tool[14] (MMAT) was used to assess data methodological quality. Due to the nature of this tool, grading of papers is not advised by the developers as some papers could still be deemed low quality despite meeting all the criteria.

Data extraction

Data from included papers were extracted independently and stored in an Excel file. The extracted data included information regarding author(s), publication date, country, methodology and population characteristics (table 1).

Data transformation

Both qualitative and quantitative data were retrieved, and these data were integrated to facilitate data synthesis. Quantitative data (including quantitative data from mixed-method studies) were 'qualitised' which involved the transformation of quantitative results into textual information.[14]

Data synthesis

Following the transformation of quantitative data into 'qualitised' data, the data were integrated. Next, the data were assembled into categories with similar meaning in the form of themes.

RESULTS

Study inclusion

Database searching yielded 1073 papers, with an additional 28 papers found via other sources. Following electronic and manual duplicate removal, 987 papers remained. Following title and abstract screening, 27 papers were identified; however, five papers did not have full texts available and were excluded. The remaining 22 papers were assessed for eligibility; 14 of these were included within the review. This process is shown using the PRISMA Flow Diagram[15] (figure 1). Of these included studies, six papers were qualitative conducting semi-structured individual or group interviews, four reported quantitative results of surveys, three reported quantitative results from surveys and qualitative results from interviews, and the final study was a cross-sectional study.

Table 1 Study characteristics

Authors, year	Country	Methodology	Population
Baker & Shears, 2010[29]	UK	Quantitative descriptive Evaluation of 1-day workshop	Health and social care professionals working with patients with an ABI (n=24)
Castell & Stenfert Kroese, 2016[20]	UK	Qualitative Semi-structured interviews	Midwives working with WwLD (n=9)
Dyer *et al*, 2014[25]	UK	Mixed methods 30-min DVD Multiple time point questionnaires	Nursing students (n=138)
Fronek *et al*, 2010[26]	Australia	Mixed methods 2-year follow-up to a randomised controlled trial of a 1-day training programme	Staff from an interdisciplinary rehabilitation team working with patients with spinal cord injuries (n=37)
Higgins *et al*, 2012[27]	Ireland	Mixed methods Evaluation of 1-day interdisciplinary sexuality education programme	Allied health, nursing and care staff working with PwPD Completed evaluations (n=29) Participated in interviews (n=12)
Höglund & Larrson, 2019[24]	Sweden	Qualitative Focus group interviews	Nurse-midwives providing contraceptive counselling to WwID (n=19)
Kazukauskas & Lam, 2009[19]	USA	Quantitative descriptive Questionnaires	Certified rehabilitation counsellors (n=199)
Lee *et al*, 2015[16]	Philippines	Qualitative Semi-structured interviews and focus group discussions	Staff recruited from facilities and organisations providing SRHC to WwD Interviews participants (n=14) Focus groups participants (n=18)
Molloy & Herold, 1985[17]	Canada	Quantitative descriptive Questionnaires	Physicians, nurses and therapists providing sexual counselling to PwPD (n=226)
Murphy *et al*, 2015[23]	USA	Quantitative descriptive Surveys	Paediatric genetic counsellors providing sexual education to PwID (n=38)
Ride & Newton, 2018[18]	Australia	Qualitative Semi-structured interviews	Staff working within SRH services and disability-focused organisations working with PwPD (n=9)
Simpson *et al*, 2006[28]	New Zealand	Quantitative non-randomised study 6-month follow-up questionnaire of workshop	Rehabilitation and disability staff Workshop volunteers (n=33) Control group volunteers (n=13)
Smith *et al*, 2004[21]	Zambia	Qualitative Semi-structured interviews	Public sector reproductive health service providers working with PwID (n=25)
Thompson *et al*, 2014[22]	Australia	Qualitative Semi-structured interviews	Clinicians providing SRH to PwID (n=23)

ABI, Acquired Brain Injury; PwID, people with intellectual disabilities; PwPD, people with physical disabilities; SRH, sexual and reproductive health; SRHC, sexual and reproductive health care; WwD, women with disabilities; WwID, women with intellectual disabilities; WwLD, women with learning disabilities.

Methodological quality

Methodological quality assessment was carried out using the MMAT (online supplemental table S4).[14] All studies reporting solely qualitative data (n=6) performed well, adhering to all the criteria. Studies reporting quantitative results from surveys (n=4) were variable in their adherence to the criteria, with a similar pattern of criteria not being met. For example, the non-response bias of all studies was high, and the low response rate meant results were not representative of the target population. The cross-sectional study did not have complete outcome data due to a high drop-off rate between follow-up evaluations, and intergroup discussion could not be ruled out, but all other criteria were met. All mixed-methods studies (n=3) included qualitative components and performed well in this area. Results in other areas of these studies were more variable in their accordance with the tool.

Integrated finding 1: experiences of HCPS

Of the included studies, nine discussed experiences of HCPs working with PwD with regards to SRH. These studies reported findings from semi-structured interviews or descriptive surveys. Several themes arose, mainly surrounding weaknesses within this area (table 2). The included studies reported findings with regards to different categories of disabilities: people with physical disabilities (PwPD) (n=3), people with intellectual disabilities (PwID) (n=3), women with learning disabilities (WwLD) (n=1), women with intellectual disabilities (WwID) (n=1) and women with disabilities (WwD) in general (n=1).

Training

A major theme discussed was that staff felt unprepared due to a lack of or inadequate training surrounding the SRH of PwD. Staff often quoted lack of knowledge

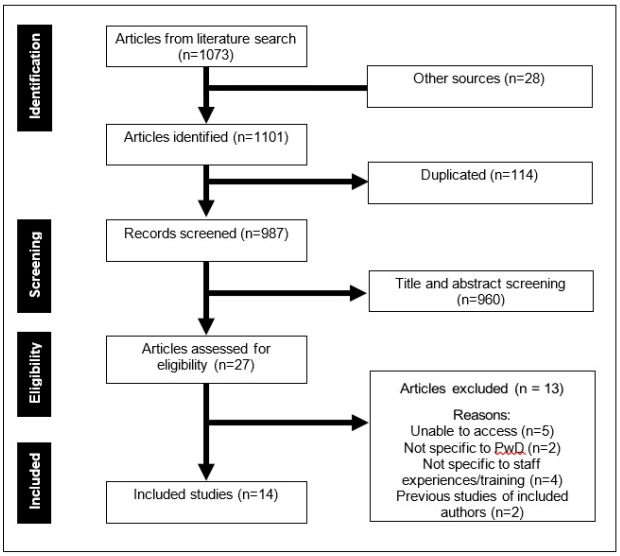

Figure 1 Adapted from the PRISMA Flow Diagram[15]: details number of results at each stage of the study selection process following literature searching. PwD, people with disabilities.

of issues PwD face regarding their SRH.[16–18] One study tested staff on their knowledge of such issues with regards to PwPD and found that staff 'generally lacked knowledge'.[17] A similar study found that rehabilitation staff had 'average' knowledge on the subject and 'average' understanding of patient issues.[19] A lack of communication skills in approaching the subject was also cited[17] such as in a paper in which midwives discussed working with WwLD.[20] A study of midwives in Zambia found they had a lack of confidence regarding aiding WwD during birth, often referring women to university hospitals.[21] A common notion was that staff had not received specific training on the subject in either their studies or professional training.[16 17 19 20 22 23] This resulted in staff feeling incapable of addressing the SRH concerns of their patients.[16–18 20–22] On a positive note, staff were eager to receive training to develop their knowledge and skills in this area, agreeing that more programmes and resources should be made available.[17 18 20 23]

Guidelines

Staff also discussed the lack of policy or guidelines about providing SRHC to PwD. Staff were either unaware of any guidelines or stated that there were none.[16 17 20 22 24] Any available guidelines focused on what staff were not allowed to do, which was viewed as unhelpful.[22] This absence led to staff adapting their care from patient to patient, leaving them uncomfortable and fearing they were doing something wrong.[22] This also led some staff to view addressing SRH as optional rather than a requirement of care.[22 24]

Patient contact

Another theme was a lack of experience of working with PwD. Midwives in Sweden noted that few WwID attended the clinic for contraceptive counselling, resulting in a lack of confidence discussing the subject.[24] In the Philippines, poor attitudes towards PwD led to them being hidden by family members. This meant that PwD were not taken to hospital, especially regarding their SRH, leaving staff inexperienced in providing care to these patients.[16]

Time

Staff also reported a lack of time for discussing SRH in addition to the other medical needs of the patient and quoted time as a barrier to providing quality care.[20 22 23] Staff felt they needed more time to discuss issues with WwLD or PwID due to a lack of knowledge or understanding.[20 22] This sometimes led to staff actively giving their patients more consultation time by giving work to fellow staff members to provide better care.[20]

Teamwork

Staff also felt that there is a lack of collaboration and teamwork within this area.[20 22 24] There also seems to

Table 2 Theme coverage by nine included studies

Sources	Themes					
Authors, year	Training	Guidelines	Patient contact	Time	Teamwork	Awareness/access to resources
Castell & Stenfert Kroese, 2016[20]	✓	✓		✓	✓	✓
Höglund & Larrson, 2019[24]		✓	✓		✓	
Kazukauskas & Lam, 2009[19]	✓					
Lee *et al*, 2015[16]	✓	✓	✓			✓
Molloy & Herold, 1985[17]	✓	✓				
Murphy *et al*, 2015[23]	✓			✓		
Ride & Newton, 2018[18]	✓					
Smith *et al*, 2004[21]	✓					
Thompson *et al*, 2014[22]	✓	✓		✓	✓	✓

Table 3 Descriptions of training programmes/workshops

Authors, year	Description
Baker & Shears, 2010[29]	1-day health and social care professional education workshop series for staff working with patients with ABI. Staff filled out an evaluation form in which they graded aspects of the workshop.
Dyer *et al*, 2014[25]	Two cohorts of nursing students watched a DVD about common sexual issues and concerns of PwD. Multiple time point questionnaires designed to measure levels of self-perceived knowledge, confidence, comfort and willingness to discuss sexual issues with patients, with additional open-ended questions.
Fronek *et al*, 2010[26]	2-year follow-up to a randomised controlled trial that aimed to measure participant knowledge, comfort, approach and attitudes following a 1-day training programme for the interdisciplinary rehabilitation team working with patients with spinal cord injuries.
Higgins *et al*, 2012[27]	1-day education programme for staff working with PwPD. Pre- and post-course questionnaires were carried out to measure staff levels of knowledge, comfort and skills. 12 semi-structured interviews were also carried out 2–3 weeks following the programme.
Simpson *et al*, 2006[28]	Cross-sectional study regarding 2-day workshop aiming to improve the management of patients with neurological disabilities. Staff levels of knowledge, comfort, skills and attitudes were measured before and after the workshop and then 6 months later.

ABI, Acquired Brain Injury; PwD, people with disabilities; PwPD, people with physical disabilities.

be a lack of collaboration between different service providers such as community and hospital teams, which can lead to issues such as limited information sharing.[20 22] This lack of teamwork and collaboration has resulted in staff feeling alone and unsupported, leading them to consider that a multidisciplinary approach to providing care was of utmost importance.[20 24]

Awareness/access to resources for PwD

The final theme discussed was a lack of awareness or access to additional services for PwD. One key area lacking is services catering specifically to WwLD, which prevented staff from meeting patient needs.[20] In addition, the lack of trained sign language interpreters was noted, hindering the care of patients with hearing difficulties. Overall, lack of awareness or access to currently available resources for providing SRHC to PwD was widely experienced by HCPs.[16 20 22]

Integrated finding 2: training programme/workshop results

Results and evaluations of training programmes were integrated (table 3). Of the five relevant papers, four documented the change in HCPs care following training by measuring differences in knowledge, comfort, approach/skills and attitudes. Some papers also asked staff to complete a survey to evaluate the training and others carried out semi-structured interviews.

Knowledge

Studies measured the change in staff knowledge levels through tests or by asking staff to rate their own levels of knowledge. Following training, tested and self-perceived levels of knowledge significantly increased in those who had taken part in the programme.[25–28] This was in direct comparison to control groups, where there was no significant increase in tested or perceived knowledge.[26 28] However, knowledge levels tended to decrease at follow-ups at different time points such as 3 months, 6 months and 2 years later.[25 26 28] Despite this decrease, staff who participated in training had significantly higher levels of knowledge at follow-up than control groups.[26 28] Additionally, one study trained control groups between two follow-up stages and found that their knowledge levels were similar to the originally trained group, with both groups having significant increases in knowledge compared with their pre-training levels.[26]

Comfort

In addition, staff comfort levels were measured by answering questions or by rating their comfort levels in carrying out specific tasks. Following training, all studies reported a significant increase in comfort levels[25–28] compared with control groups.[26 28] There was also a tendency for participant comfort levels to increase again at follow-up measurements.[25 26 28] Participants described feeling more comfortable listening to patients, answering patient questions and referring patients to other colleagues following training.[26 27]

Approach/skills

Studies measured staff self-perceived skill levels or 'approach' carrying out different roles surrounding the subject. Following training, staff self-perceived skill levels significantly increased.[26–28] However, levels at follow-up measurements had significantly decreased but were significantly higher than control levels.[28] Staff reported taking part in a wider variety of roles following training[28] and described instances where they thought about the sexual needs of patients such as when considering catheterisation.[27]

Attitudes

Staff attitudes were also 'measured', but results were inconsistent. One study found that both participant and control groups had generally liberal views at the pre-training point and did not change at both post-workshop and follow-up measurements.[28] Another study found that participants became more open-minded towards the SRH of PwD, which then

decreased at two follow-up measurements. In the control group, attitude levels did not change until after they had received training between follow-ups.[26] Staff in the latter study also described having a more open attitude towards sexuality and now viewed it with the same importance as other specialities such as urology.

Training evaluations

In some studies, staff evaluated the training programme/workshop. Staff generally had favourable reviews with most rating them as 'good' or 'excellent' in quality.[26 29] Staff reported being more aware of sexual issues for PwD[28 29] and that this helped them to be more considerate of a patient's sexual needs.[27 29] Staff enjoyed the multidisciplinary approach to training as it helped build relationships between members and provide opportunities for further discussion.[26] However, staff mentioned the need for continuous training as their knowledge levels decreased in the months afterwards and due to high rates of staff turnover.[26]

DISCUSSION

To our knowledge, this is the first scoping review to identify and synthesise evidence on HCPs views on their confidence and competence in providing SRHC to PwD or to review staff training in this area. The low number of papers reporting this issue is in stark contrast to studies discussing the attitudes of staff, students and society towards the sexuality of PwD, for example.[7 30–33] This lack of research highlights a major knowledge gap of practice in this area, and so further research would be beneficial.

Studies have shown that training in this field is either not provided or insufficient, resulting in staff having a lack of knowledge and skills and feeling incapable of providing care.[16–22] It has also been shown that HCPs in non-SRH settings do not regularly engage in discussions surrounding SRH with patients regardless of whether they have a disability. Reasons included lack of training, lack of awareness about sexual issues, and concern about their knowledge and abilities.[34] This highlights that training surrounding sexuality issues, in general, is lacking, but particularly regarding the SRH of PwD. Additionally, staff reported being unaware or unable to access further services and resources for PwD.[16 20 22] This could be built into training to provide staff with tailored information regarding these resources. Improving training and ensuring staff are equally prepared is vital in optimising the quality of care provided to patients leading to improved health outcomes.

Staff regularly had to interpret how best to provide care due to a lack of guidelines surrounding the topic.[16 17 20 22 24] This interpretation of how best to provide care means that patients may receive variable quality of care. Providing adequate guidelines for staff would give them certainty in how to provide care and improve staff confidence[35] and has been shown to improve care consistency and health outcomes.[36] Guidelines that improve efficiency allow funds to be diverted to other services; improving care in this sector would be of overall benefit to healthcare systems.[35 36] Development of evidence-based, patient-centred guidelines for staff surrounding the SRH of PwD would, therefore, be vital in improving staff confidence and competence in this area.

Staff regularly quoted lack of time as a barrier to discussing SRH with PwD,[20 23] which is commonly experienced by HCPs in many sectors.[37] However, a lack of time caused particular difficulty when working with WwLD or PwID who tended to require longer consultations to ensure their understanding.[20] Lack of time could be a barrier in providing staff training and may impede its full impact. Scheduling longer consultation times for PwID was highlighted as a facilitator for improving health information exchange between staff and patients, and therefore improving healthcare quality.[38]

Staff reportedly felt unsupported regarding care provision and that teamwork, collaboration and information sharing between staff was limited.[20 22 24] Patients interact with a variety of different HCPs and so effective communication between staff is key to ensure patient information is kept updated, misinterpretation of information is avoided, and adequate care is provided.[39] Effective communication has also been shown to improve staff confidence and competence, and is key to improving care quality.[39 40] Furthermore, staff agreed that a multidisciplinary approach to care was needed and was a well-liked attribute of training programmes.[20 24 26] Developing programmes which promote effective communication and teamwork within this area would be of great value.

Staff knowledge levels following training tended to increase immediately afterwards but slightly decreased at follow-up measurements.[25–28] This result was expected due to the nature of programmes not providing continuous teaching resources. Studies have shown the necessity of providing resources to aid knowledge retention, as observed by the 'forgetting curve' hypothesis.[41] This highlights the need for continuous training and further resources to ensure staff knowledge is maintained at a high level, otherwise training may have limited sustained impact.

Staff comfort levels tended to slightly increase at follow-up measurements.[25 26 28] This is described by the Dunning–Kruger effect[42] where experience increases comfort and confidence in carrying out tasks. Lack of experience in working with PwD both in general and regarding their SRH resulted in staff having little confidence in providing care.[16 24] Training can be enhanced through opportunities to apply their knowledge and skills. Increasing exposure to working with PwD by encouraging patient

engagement and making services fully accessible would have a positive effect on staff confidence.

Staff self-perceived skill levels tended to significantly increase following training but decreased at follow-up measurements.[27 28] This could again be explained by the Dunning–Kruger effect whereby a sharp increase in confidence occurs when a little experience is gained, which then sharply decreases and gradually increases at a steady rate.[42] This significant increase in staff self-perceived skill levels could mimic their sharp increase in confidence following training which mellowed in subsequent months. Providing staff with training and continuous experience in this sector is therefore important in increasing and maintaining staff skill levels in this field.

In terms of attitudes, reported effects varied. Some studies found no change in staff attitudes whereas others did.[26 28] Although not as apparent as staff knowledge, attitudes of staff towards issues such as sexuality can have a great impact on the quality of care they provide. Staff who are more open-minded towards the SRH of PwD may be more likely to address these issues and more engaged in furthering their skills. Training programmes which address and promote positive attitudes with regard to this issue in addition to improving staff knowledge and skills may be beneficial. This would aid in improving staff competence in this area of healthcare and the quality of care provided by staff.

Limitations

This scoping review is limited by the low number of studies included. This could be a result of the small number of databases searched, given the time and resource constraints of a student project, but could also reflect the limited data on this subject at an international level. Results were filtered to include only English language articles, and hard copies of studies without full text available online were not requested; these factors could have contributed to the low number of studies included. Another limitation of this review was the use of the MMAT, which recommended against grading paper quality. The risk of biases was high in all studies given the study design and potential selection bias. Study participants often volunteered to do so, and therefore it may be the case that they held more positive views of the subject or were more interested in receiving training. The lack of a formalised evaluation tool to assess the impact of training limits the comparability across studies. Consequently, caution is needed when generalising these views to all HCPs.

CONCLUSIONS

Overall, from the limited number of studies in this subject area, HCPs feel they lack confidence and competence in providing SRHC to PwD. This is due to several factors including a lack of knowledge and training, lack of guidelines, lack of awareness or access to resources for PwD, lack of experience in working with PwD, lack of time to provide appropriate care, and a lack of teamwork and collaboration between staff members. All these areas should be addressed to improve staff confidence and competence so as to increase care quality within this sector. In particular, adequate guidelines should be developed, and continuous staff training is recommended due to high staff turnover and to ensure staff knowledge and skills remain up to date.

Further research in this area should aim to assess care provision within this sector in different healthcare boards. Training programmes should then be developed and evaluated. They should aim to improve staff knowledge, comfort, skills and attitudes, with an emphasis on teamwork to improve staff confidence and competence within this area.

Ensuring staff are confident and competent in providing such care is key to improving services, increasing patient engagement, and promoting SRH outcomes overall. Good quality SRHC is a basic human right and PwD should not be excluded from this.

Contributors LEC planned and carried out this review as part of her student dissertation project assignment. She took part in all stages from planning to submission. ZEC helped to plan this review, screened the results returned by the search strategy and reviewed the rest of the work carried out by LEC. ZEC is the guarantor. JB resolved discrepancies during the screening of results returned by the search strategy. She also reviewed the work carried out by LEC.

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Competing interests None declared.

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Systematic review

*Fields that have an **asterisk (*)** next to them means that they **must be answered.** **Word limits** are provided for each section. You will be unable to submit the form if the word limits are exceeded for any section. Registrant means the person filling out the form*.

1. * Review title.

Give the title of the review in English

Disability, sexual and reproductive health: A mixed methods systematic review of Healthcare professionals views on their confidence and competence in care provision

2. Original language title.

For reviews in languages other than English, give the title in the original language. This will be displayed with the English language title.

3. * Anticipated or actual start date.

Give the date the systematic review started or is expected to start.

08/01/2020

4. * Anticipated completion date.

Give the date by which the review is expected to be completed.

01/05/2020

5. * Stage of review at time of this submission.

Tick the boxes to show which review tasks have been started and which have been completed.
Update this field each time any amendments are made to a published record.

Reviews that have started data extraction (at the time of initial submission) are not eligible for inclusion in PROSPERO.
If there is later evidence that incorrect status and/or completion date has been supplied, the published PROSPERO record will be marked as retracted.

This field uses answers to initial screening questions. It cannot be edited until after registration.

The review has not yet started: No

Review stage	Started	Completed
Preliminary searches	Yes	Yes
Piloting of the study selection process	Yes	Yes
Formal screening of search results against eligibility criteria	Yes	Yes
Data extraction	No	No
Risk of bias (quality) assessment	No	No

Review stage	Started	Completed
Data analysis	No	No

Provide any other relevant information about the stage of the review here.

6. * Named contact.

The named contact is the guarantor for the accuracy of the information in the register record. This may be any member of the review team.

Lucy Craig

Email salutation (e.g. "Dr Smith" or "Joanne") for correspondence:
Miss Craig

7. * Named contact email.

Give the electronic email address of the named contact.

lucyc1999@gmail.com

8. Named contact address

PLEASE NOTE this information will be published in the PROSPERO record so please do not enter private information, i.e. personal home address

Give the full institutional/organisational postal address for the named contact.

University of Edinburgh, Scotland, UK

9. Named contact phone number.

Give the telephone number for the named contact, including international dialling code.

07920776693

10. * Organisational affiliation of the review.

Full title of the organisational affiliations for this review and website address if available. This field may be completed as 'None' if the review is not affiliated to any organisation.

University of Edinburgh

Organisation web address:
s1711285@ed.ac.uk

11. * Review team members and their organisational affiliations.

Give the personal details and the organisational affiliations of each member of the review team. Affiliation refers to groups or organisations to which review team members belong.
NOTE: email and country now MUST be entered for each person, unless you are amending a published record.

Miss Lucy Craig. University of Edinburgh

Dr Zhong Eric Chen. Chalmers Sexual Health Clinic

Mrs Joanne Barrie. Central Sexual Health

12. * Funding sources/sponsors.

Details of the individuals, organizations, groups, companies or other legal entities who have funded or sponsored the review.

No funding

Grant number(s)
State the funder, grant or award number and the date of award

13. * Conflicts of interest.

List actual or perceived conflicts of interest (financial or academic).

None

14. Collaborators.

Give the name and affiliation of any individuals or organisations who are working on the review but who are not listed as review team members. **NOTE: email and country must be completed for each person, unless you are amending a published record.**

15. * Review question.

State the review question(s) clearly and precisely. It may be appropriate to break very broad questions down into a series of related more specific questions. Questions may be framed or refined using PI(E)COS or similar where relevant.

To explore the views of healthcare professionals on their confidence and competency in providing sexual and reproductive healthcare to people with disabilities.

16. * Searches.

State the sources that will be searched (e.g. Medline). Give the search dates, and any restrictions (e.g. language or publication date). Do NOT enter the full search strategy (it may be provided as a link or attachment below.)

Database searching was carried out on PubMed and Scopus in January 2020, the search was restricted to English language papers only.

17. URL to search strategy.

Upload a file with your search strategy, or an example of a search strategy for a specific database, (including the keywords) in pdf or word format. In doing so you are consenting to the file being made publicly accessible.

Or provide a URL or link to the strategy. Do NOT provide links to your search **results**.

https://www.crd.york.ac.uk/PROSPEROFILES/197736_STRATEGY_20210103.pdf

Yes I give permission for this file to be made publicly available

18. * Condition or domain being studied.

Give a short description of the disease, condition or healthcare domain being studied in your systematic review.

Sexual and reproductive health of people with disabilities

19. * Participants/population.

Specify the participants or populations being studied in the review. The preferred format includes details of both inclusion and exclusion criteria.

Healthcare professional providing sexual and reproductive care to people with disabilities

20. * Intervention(s), exposure(s).

Give full and clear descriptions or definitions of the interventions or the exposures to be reviewed. The preferred format includes details of both inclusion and exclusion criteria.

Inclusion criteria:
Peer reviewed papers reporting primary data on the experiences of healthcare professionals surrounding sexual and reproductive healthcare for people with disabilities, or results of staff training programmes/workshops surrounding the subject.

Exclusion criteria:
Studies not published or translated into English
Articles without full text available
Papers which only discussed staff attitudes on the subject due to previous systematic reviews, except in the context of training programmes

21. * Comparator(s)/control.

Where relevant, give details of the alternatives against which the intervention/exposure will be compared (e.g. another intervention or a non-exposed control group). The preferred format includes details of both inclusion and exclusion criteria.

not applicable

22. * Types of study to be included.

Give details of the study designs (e.g. RCT) that are eligible for inclusion in the review. The preferred format includes both inclusion and exclusion criteria. If there are no restrictions on the types of study, this should be stated.

There was no restrictions on the types of study to be included within the review. However, inclusion and exclusion regarding the data within studies were as followed:

Inclusion criteria:
Peer-reviewed papers reporting primary data on the experiences of healthcare
professionals surrounding sexual and reproductive healthcare for people with disabilities,
or results of staff training programmes/workshops surrounding the subject.

Exclusion criteria:
Studies not published or translated into English.
Articles without full text available.
Paper which only discussed staff attitudes on the subject due to previous systematic.
reviews, except in the context of training programmes.

23. Context.

Give summary details of the setting or other relevant characteristics, which help define the inclusion or exclusion criteria.

24. * Main outcome(s).

Give the pre-specified main (most important) outcomes of the review, including details of how the outcome is defined and measured and when these measurement are made, if these are part of the review inclusion criteria.

The review aims to explore the views of healthcare professionals confidence and competency in providing sexual and reproductive healthcare to people with disabilities. This will give us an insight of current practices within this field and understand what is working and what can be improved upon in order to improve health outcomes.

* Measures of effect
not applicable

25. * Additional outcome(s).

List the pre-specified additional outcomes of the review, with a similar level of detail to that required for main outcomes. Where there are no additional outcomes please state ‘None’ or ‘Not applicable’ as appropriate to the review

not applicable

* Measures of effect

not applicable

26. * Data extraction (selection and coding).

Describe how studies will be selected for inclusion. State what data will be extracted or obtained. State how this will be done and recorded.

Studies will be imported into an Microsoft Excel file for storage, electronic and manual removal of duplicates and selection with regards to the inclusion and exclusion criteria. This will be carried out by the first author and second authors and disagreements about inclusion verdict will be resolved by the third author.
Data to be extracted will include author(s), publication date, country of publication, methodology, population characteristics and key findings. This will be carried out by the first author and reviewed by the second and third authors.

27. * Risk of bias (quality) assessment.

State which characteristics of the studies will be assessed and/or any formal risk of bias/quality assessment tools that will be used.

Quality assessment of studies will be carried out using Mixed Methods Appraisal Tool. This will be carried out by the first author and reviewed by the second and third authors.

28. * Strategy for data synthesis.

Describe the methods you plan to use to synthesise data. This **must not be generic text** but should be **specific to your review** and describe how the proposed approach will be applied to your data.
If meta-analysis is planned, describe the models to be used, methods to explore statistical heterogeneity, and software package to be used.

Prior to data synthesis, quantitative data will be transformed into 'qualitised' data to facilitate data synthesis. Data will then be synthesized into the two integrated findings of 'experiences of healthcare professionals' and 'results from training programmes/workshops'. Data within these findings will be organised into themes.

29. * Analysis of subgroups or subsets.

State any planned investigation of ‘subgroups’. Be clear and specific about which type of study or participant will be included in each group or covariate investigated. State the planned analytic approach.

Prior to data extraction, it has been decided to analyse studies in two integrated findings as the study aims and designs were different.

30. * Type and method of review.

Select the type of review, review method and health area from the lists below.

Type of review

Cost effectiveness	No
Diagnostic	No
Epidemiologic	No
Individual patient data (IPD) meta-analysis	No
Intervention	No
Meta-analysis	No
Methodology	No

Narrative synthesis	No
Network meta-analysis	No
Pre-clinical	No
Prevention	No
Prognostic	No
Prospective meta-analysis (PMA)	No
Review of reviews	No
Service delivery	No
Synthesis of qualitative studies	No
Systematic review	Yes
Other	No

Health area of the review

Alcohol/substance misuse/abuse	No
Blood and immune system	No
Cancer	No
Cardiovascular	No
Care of the elderly	No
Child health	No
Complementary therapies	No
COVID-19	No
Crime and justice	No
Dental	No
Digestive system	No
Ear, nose and throat	No
Education	Yes
Endocrine and metabolic disorders	No
Eye disorders	No

General interest	No
Genetics	No
Health inequalities/health equity	Yes
Infections and infestations	No
International development	No
Mental health and behavioural conditions	No
Musculoskeletal	No
Neurological	No
Nursing	No
Obstetrics and gynaecology	Yes
Oral health	No
Palliative care	No
Perioperative care	No
Physiotherapy	No
Pregnancy and childbirth	Yes
Public health (including social determinants of health)	Yes
Rehabilitation	No
Respiratory disorders	No
Service delivery	No
Skin disorders	No
Social care	No
Surgery	No
Tropical Medicine	No
Urological	Yes
Wounds, injuries and accidents	No
Violence and abuse	No

31. Language.

Select each language individually to add it to the list below, use the bin icon to remove any added in error.

English

There is not an English language summary

32. * Country.

Select the country in which the review is being carried out. For multi-national collaborations select all the countries involved.

Scotland

33. Other registration details.

Name any other organisation where the systematic review title or protocol is registered (e.g. Campbell, or The Joanna Briggs Institute) together with any unique identification number assigned by them.
If extracted data will be stored and made available through a repository such as the Systematic Review Data Repository (SRDR), details and a link should be included here. If none, leave blank.

34. Reference and/or URL for published protocol.

If the protocol for this review is published provide details (authors, title and journal details, preferably in Vancouver format)

No I do not make this file publicly available until the review is complete

35. Dissemination plans.

Do you intend to publish the review on completion?

Yes

36. Keywords.

Give words or phrases that best describe the review. Separate keywords with a semicolon or new line. Keywords help PROSPERO users find your review (keywords do not appear in the public record but are included in searches). Be as specific and precise as possible. Avoid acronyms and abbreviations unless these are in wide use.

37. Details of any existing review of the same topic by the same authors.

If you are registering an update of an existing review give details of the earlier versions and include a full bibliographic reference, if available.

38. * Current review status.

Update review status when the review is completed and when it is published.
New registrations must be ongoing so this field is not editable for initial submission.

Review_Ongoing

39. Any additional information.

Provide any other information relevant to the registration of this review.

40. Details of final report/publication(s) or preprints if available.

Leave empty until publication details are available OR you have a link to a preprint (NOTE: this field is not editable for initial submission).
List authors, title and journal details preferably in Vancouver format.

Table S2. Search strategy

Search terms
((((blood borne virus) Or sexual)) AND (((Staff) OR health care professional) AND ((((((((((retard) OR infirm) OR cripple) OR special needs) OR handicap) OR impairment) OR impaired) OR disabilities) OR disabled) OR disability)))

Table S3. Inclusion and exclusion criteria

Inclusion Criteria
Peer-reviewed papers reporting primary data on the experiences of healthcare professionals surrounding sexual and reproductive healthcare for people with disabilities, or results of staff training programmes/workshops surrounding the subject.
Exclusion Criteria
Studies not published or translated into English Articles without full text available Paper which only discussed staff attitudes on the subject due to previous systematic reviews, except in the context of training programmes

Tables S4: Tables of methodological assessment

Category of study designs	Methodological quality criteria	Responses			
		Yes	No	Can't tell	Comments
Screening questions (for all types)	S1. Are there clear research questions?	✓			
	S2. Do the collected data allow to address the research questions?	✓			
	Further appraisal may not be feasible or appropriate when the answer is 'No' or 'Can't tell' to one or both screening questions.				
1. Qualitative	1.1. Is the qualitative approach appropriate to answer the research question?				
	1.2. Are the qualitative data collection methods adequate to address the research question?				
	1.3. Are the findings adequately derived from the data?				
	1.4. Is the interpretation of results sufficiently substantiated by data?				
	1.5. Is there coherence between qualitative data sources, collection, analysis and interpretation?				
2. Quantitative randomized controlled trials	2.1. Is randomization appropriately performed?				
	2.2. Are the groups comparable at baseline?				
	2.3. Are there complete outcome data?				
	2.4. Are outcome assessors blinded to the intervention provided?				
	2.5 Did the participants adhere to the assigned intervention?				
3. Quantitative non- randomized	3.1. Are the participants representative of the target population?				
	3.2. Are measurements appropriate regarding both the outcome and intervention (or exposure)?				
	3.3. Are there complete outcome data?				
	3.4. Are the confounders accounted for in the design and analysis?				
	3.5. During the study period, is the intervention administered (or exposure occurred) as intended?				
4. Quantitative descriptive	4.1. Is the sampling strategy relevant to address the research question?	✓			
	4.2. Is the sample representative of the target population?		✓		
	4.3. Are the measurements appropriate?		✓		Didn't assess knowledge/ skills or follow-up measurements
	4.4. Is the risk of nonresponse bias low?		✓		Voluntary participation
	4.5. Is the statistical analysis appropriate to answer the research question?		✓		
5. Mixed methods	5.1. Is there an adequate rationale for using a mixed methods design to address the research question?				
	5.2. Are the different components of the study effectively integrated to answer the research question?				
	5.3. Are the outputs of the integration of qualitative and quantitative components adequately interpreted?				
	5.4. Are divergences and inconsistencies between quantitative and qualitative results adequately addressed?				
	5.5. Do the different components of the study adhere to the quality criteria of each tradition of the methods involved?				

Baker & Shears, 2010

Category of study designs	**Methodological quality criteria**	**Responses**			
		Yes	No	Can't tell	Comments
Screening questions (for all types)	S1. Are there clear research questions?	✓			
	S2. Do the collected data allow to address the research questions?	✓			
	Further appraisal may not be feasible or appropriate when the answer is 'No' or 'Can't tell' to one or both screening questions.				
1. Qualitative	1.1. Is the qualitative approach appropriate to answer the research question?	✓			
	1.2. Are the qualitative data collection methods adequate to address the research question?	✓			
	1.3. Are the findings adequately derived from the data?	✓			
	1.4. Is the interpretation of results sufficiently substantiated by data?	✓			
	1.5. Is there coherence between qualitative data sources, collection, analysis and interpretation?	✓			
2. Quantitative randomized controlled trials	2.1. Is randomization appropriately performed?				
	2.2. Are the groups comparable at baseline?				
	2.3. Are there complete outcome data?				
	2.4. Are outcome assessors blinded to the intervention provided?				
	2.5 Did the participants adhere to the assigned intervention?				
3. Quantitative non- randomized	3.1. Are the participants representative of the target population?				
	3.2. Are measurements appropriate regarding both the outcome and intervention (or exposure)?				
	3.3. Are there complete outcome data?				
	3.4. Are the confounders accounted for in the design and analysis?				
	3.5. During the study period, is the intervention administered (or exposure occurred) as intended?				
4. Quantitative descriptive	4.1. Is the sampling strategy relevant to address the research question?				
	4.2. Is the sample representative of the target population?				
	4.3. Are the measurements appropriate?				
	4.4. Is the risk of nonresponse bias low?				
	4.5. Is the statistical analysis appropriate to answer the research question?				
5. Mixed methods	5.1. Is there an adequate rationale for using a mixed methods design to address the research question?				
	5.2. Are the different components of the study effectively integrated to answer the research question?				
	5.3. Are the outputs of the integration of qualitative and quantitative components adequately interpreted?				
	5.4. Are divergences and inconsistencies between quantitative and qualitative results adequately addressed?				
	5.5. Do the different components of the study adhere to the quality criteria of each tradition of the methods involved?				

Castell & Stenfert Kroese, 2016

Category of study designs	**Methodological quality criteria**	**Responses**			
		Yes	No	Can't tell	Comments
Screening questions (for all types)	S1. Are there clear research questions?	✓			
	S2. Do the collected data allow to address the research questions?	✓			
	Further appraisal may not be feasible or appropriate when the answer is 'No' or 'Can't tell' to one or both screening questions.				
1. Qualitative	1.1. Is the qualitative approach appropriate to answer the research question?	✓			
	1.2. Are the qualitative data collection methods adequate to address the research question?	✓			
	1.3. Are the findings adequately derived from the data?	✓			
	1.4. Is the interpretation of results sufficiently substantiated by data?	✓			
	1.5. Is there coherence between qualitative data sources, collection, analysis and interpretation?	✓			
2. Quantitative randomized controlled trials	2.1. Is randomization appropriately performed?				
	2.2. Are the groups comparable at baseline?				
	2.3. Are there complete outcome data?				
	2.4. Are outcome assessors blinded to the intervention provided?				
	2.5 Did the participants adhere to the assigned intervention?				
3. Quantitative non- randomized	3.1. Are the participants representative of the target population?	✓			
	3.2. Are measurements appropriate regarding both the outcome and intervention (or exposure)?	✓			
	3.3. Are there complete outcome data?		✓		Approx. half of data missing so not included
	3.4. Are the confounders accounted for in the design and analysis?	✓			
	3.5. During the study period, is the intervention administered (or exposure occurred) as intended?	✓			
4. Quantitative descriptive	4.1. Is the sampling strategy relevant to address the research question?				
	4.2. Is the sample representative of the target population?				
	4.3. Are the measurements appropriate?				
	4.4. Is the risk of nonresponse bias low?				
	4.5. Is the statistical analysis appropriate to answer the research question?				
5. Mixed methods	5.1. Is there an adequate rationale for using a mixed methods design to address the research question?	✓			
	5.2. Are the different components of the study effectively integrated to answer the research question?	✓			
	5.3. Are the outputs of the integration of qualitative and quantitative components adequately interpreted?	✓			
	5.4. Are divergences and inconsistencies between quantitative and qualitative results adequately addressed?	✓			
	5.5. Do the different components of the study adhere to the quality criteria of each tradition of the methods involved?	✓			

Dyer *et al*. 2014

Category of study designs	**Methodological quality criteria**	**Responses**			
		Yes	No	Can't tell	Comments
Screening questions (for all types)	S1. Are there clear research questions?	✓			
	S2. Do the collected data allow to address the research questions?	✓			
	Further appraisal may not be feasible or appropriate when the answer is 'No' or 'Can't tell' to one or both screening questions.				
1. Qualitative	1.1. Is the qualitative approach appropriate to answer the research question?	✓			
	1.2. Are the qualitative data collection methods adequate to address the research question?	✓			
	1.3. Are the findings adequately derived from the data?	✓			
	1.4. Is the interpretation of results sufficiently substantiated by data?	✓			
	1.5. Is there coherence between qualitative data sources, collection, analysis and interpretation?	✓			
2. Quantitative randomized controlled trials	2.1. Is randomization appropriately performed?	✓			
	2.2. Are the groups comparable at baseline?	✓			
	2.3. Are there complete outcome data?	✓			
	2.4. Are outcome assessors blinded to the intervention provided?			✓	
	2.5 Did the participants adhere to the assigned intervention?			✓	Intergroup discussion cannot be ruled out
3. Quantitative non- randomized	3.1. Are the participants representative of the target population?				
	3.2. Are measurements appropriate regarding both the outcome and intervention (or exposure)?				
	3.3. Are there complete outcome data?				
	3.4. Are the confounders accounted for in the design and analysis?				
	3.5. During the study period, is the intervention administered (or exposure occurred) as intended?				
4. Quantitative descriptive	4.1. Is the sampling strategy relevant to address the research question?				
	4.2. Is the sample representative of the target population?				
	4.3. Are the measurements appropriate?				
	4.4. Is the risk of nonresponse bias low?				
	4.5. Is the statistical analysis appropriate to answer the research question?				
5. Mixed methods	5.1. Is there an adequate rationale for using a mixed methods design to address the research question?	✓			
	5.2. Are the different components of the study effectively integrated to answer the research question?	✓			
	5.3. Are the outputs of the integration of qualitative and quantitative components adequately interpreted?	✓			
	5.4. Are divergences and inconsistencies between quantitative and qualitative results adequately addressed?	✓			
	5.5. Do the different components of the study adhere to the quality criteria of each tradition of the methods involved?	✓			

Fronek *et al.* 2010

Category of study designs	**Methodological quality criteria**	**Responses**			
		Yes	No	Can't tell	Comments
Screening questions (for all types)	S1. Are there clear research questions?	✓			
	S2. Do the collected data allow to address the research questions?	✓			
	Further appraisal may not be feasible or appropriate when the answer is 'No' or 'Can't tell' to one or both screening questions.				
1. Qualitative	1.1. Is the qualitative approach appropriate to answer the research question?	✓			
	1.2. Are the qualitative data collection methods adequate to address the research question?	✓			
	1.3. Are the findings adequately derived from the data?	✓			
	1.4. Is the interpretation of results sufficiently substantiated by data?	✓			
	1.5. Is there coherence between qualitative data sources, collection, analysis and interpretation?	✓			
2. Quantitative randomized controlled trials	2.1. Is randomization appropriately performed?				
	2.2. Are the groups comparable at baseline?				
	2.3. Are there complete outcome data?				
	2.4. Are outcome assessors blinded to the intervention provided?				
	2.5 Did the participants adhere to the assigned intervention?				
3. Quantitative non- randomized	3.1. Are the participants representative of the target population?	✓			
	3.2. Are measurements appropriate regarding both the outcome and intervention (or exposure)?	✓			
	3.3. Are there complete outcome data?		✓		25% of data could not be matched so not included
	3.4. Are the confounders accounted for in the design and analysis?	✓			
	3.5. During the study period, is the intervention administered (or exposure occurred) as intended?	✓			
4. Quantitative descriptive	4.1. Is the sampling strategy relevant to address the research question?				
	4.2. Is the sample representative of the target population?				
	4.3. Are the measurements appropriate?				
	4.4. Is the risk of nonresponse bias low?				
	4.5. Is the statistical analysis appropriate to answer the research question?				
5. Mixed methods	5.1. Is there an adequate rationale for using a mixed methods design to address the research question?	✓			
	5.2. Are the different components of the study effectively integrated to answer the research question?	✓			
	5.3. Are the outputs of the integration of qualitative and quantitative components adequately interpreted?	✓			
	5.4. Are divergences and inconsistencies between quantitative and qualitative results adequately addressed?	✓			
	5.5. Do the different components of the study adhere to the quality criteria of each tradition of the methods involved?	✓			

Higgins *et al.* 2012

Category of study designs	**Methodological quality criteria**	**Responses**			
		Yes	No	Can't tell	Comments
Screening questions (for all types)	S1. Are there clear research questions?	✓			
	S2. Do the collected data allow to address the research questions?	✓			
	Further appraisal may not be feasible or appropriate when the answer is 'No' or 'Can't tell' to one or both screening questions.				
1. Qualitative	1.1. Is the qualitative approach appropriate to answer the research question?	✓			
	1.2. Are the qualitative data collection methods adequate to address the research question?	✓			
	1.3. Are the findings adequately derived from the data?	✓			
	1.4. Is the interpretation of results sufficiently substantiated by data?	✓			
	1.5. Is there coherence between qualitative data sources, collection, analysis and interpretation?	✓			
2. Quantitative randomized controlled trials	2.1. Is randomization appropriately performed?				
	2.2. Are the groups comparable at baseline?				
	2.3. Are there complete outcome data?				
	2.4. Are outcome assessors blinded to the intervention provided?				
	2.5 Did the participants adhere to the assigned intervention?				
3. Quantitative non- randomized	3.1. Are the participants representative of the target population?				
	3.2. Are measurements appropriate regarding both the outcome and intervention (or exposure)?				
	3.3. Are there complete outcome data?				
	3.4. Are the confounders accounted for in the design and analysis?				
	3.5. During the study period, is the intervention administered (or exposure occurred) as intended?				
4. Quantitative Descriptive	4.1. Is the sampling strategy relevant to address the research question?				
	4.2. Is the sample representative of the target population?				
	4.3. Are the measurements appropriate?				
	4.4. Is the risk of nonresponse bias low?				
	4.5. Is the statistical analysis appropriate to answer the research question?				
5. Mixed methods	5.1. Is there an adequate rationale for using a mixed methods design to address the research question?				
	5.2. Are the different components of the study effectively integrated to answer the research question?				
	5.3. Are the outputs of the integration of qualitative and quantitative components adequately interpreted?				
	5.4. Are divergences and inconsistencies between quantitative and qualitative results adequately addressed?				
	5.5. Do the different components of the study adhere to the quality criteria of each tradition of the methods involved?				

Höglund & Larrson, 2019

Category of study designs	**Methodological quality criteria**	**Responses**			
		Yes	No	Can't tell	Comments
Screening questions (for all types)	S1. Are there clear research questions?	✓			
	S2. Do the collected data allow to address the research questions?	✓			
	Further appraisal may not be feasible or appropriate when the answer is 'No' or 'Can't tell' to one or both screening questions.				
1. Qualitative	1.1. Is the qualitative approach appropriate to answer the research question?				
	1.2. Are the qualitative data collection methods adequate to address the research question?				
	1.3. Are the findings adequately derived from the data?				
	1.4. Is the interpretation of results sufficiently substantiated by data?				
	1.5. Is there coherence between qualitative data sources, collection, analysis and interpretation?				
2. Quantitative randomized controlled trials	2.1. Is randomization appropriately performed?				
	2.2. Are the groups comparable at baseline?				
	2.3. Are there complete outcome data?				
	2.4. Are outcome assessors blinded to the intervention provided?				
	2.5 Did the participants adhere to the assigned intervention?				
3. Quantitative non- randomized	3.1. Are the participants representative of the target population?				
	3.2. Are measurements appropriate regarding both the outcome and intervention (or exposure)?				
	3.3. Are there complete outcome data?				
	3.4. Are the confounders accounted for in the design and analysis?				
	3.5. During the study period, is the intervention administered (or exposure occurred) as intended?				
4. Quantitative descriptive	4.1. Is the sampling strategy relevant to address the research question?	✓			
	4.2. Is the sample representative of the target population?		✓		Demographics relatively homogeneous
	4.3. Are the measurements appropriate?	✓			
	4.4. Is the risk of nonresponse bias low?		✓		
	4.5. Is the statistical analysis appropriate to answer the research question?	✓			
5. Mixed methods	5.1. Is there an adequate rationale for using a mixed methods design to address the research question?				
	5.2. Are the different components of the study effectively integrated to answer the research question?				
	5.3. Are the outputs of the integration of qualitative and quantitative components adequately interpreted?				
	5.4. Are divergences and inconsistencies between quantitative and qualitative results adequately addressed?				
	5.5. Do the different components of the study adhere to the quality criteria of each tradition of the methods involved?				

Kazukauskas & Lam, 2009

Category of study designs	**Methodological quality criteria**	**Responses**			
		Yes	No	Can't tell	Comments
Screening questions (for all types)	S1. Are there clear research questions?	✓			
	S2. Do the collected data allow to address the research questions?	✓			
	Further appraisal may not be feasible or appropriate when the answer is 'No' or 'Can't tell' to one or both screening questions.				
1. Qualitative	1.1. Is the qualitative approach appropriate to answer the research question?	✓			
	1.2. Are the qualitative data collection methods adequate to address the research question?	✓			
	1.3. Are the findings adequately derived from the data?	✓			
	1.4. Is the interpretation of results sufficiently substantiated by data?	✓			
	1.5. Is there coherence between qualitative data sources, collection, analysis and interpretation?	✓			
2. Quantitative randomized controlled trials	2.1. Is randomization appropriately performed?				
	2.2. Are the groups comparable at baseline?				
	2.3. Are there complete outcome data?				
	2.4. Are outcome assessors blinded to the intervention provided?				
	2.5 Did the participants adhere to the assigned intervention?				
3. Quantitative non- randomized	3.1. Are the participants representative of the target population?				
	3.2. Are measurements appropriate regarding both the outcome and intervention (or exposure)?				
	3.3. Are there complete outcome data?				
	3.4. Are the confounders accounted for in the design and analysis?				
	3.5. During the study period, is the intervention administered (or exposure occurred) as intended?				
4. Quantitative descriptive	4.1. Is the sampling strategy relevant to address the research question?				
	4.2. Is the sample representative of the target population?				
	4.3. Are the measurements appropriate?				
	4.4. Is the risk of nonresponse bias low?				
	4.5. Is the statistical analysis appropriate to answer the research question?				
5. Mixed methods	5.1. Is there an adequate rationale for using a mixed methods design to address the research question?				
	5.2. Are the different components of the study effectively integrated to answer the research question?				
	5.3. Are the outputs of the integration of qualitative and quantitative components adequately interpreted?				
	5.4. Are divergences and inconsistencies between quantitative and qualitative results adequately addressed?				
	5.5. Do the different components of the study adhere to the quality criteria of each tradition of the methods involved?				

Lee *et al.* 2015

Category of study designs	Methodological quality criteria	Responses			
		Yes	No	Can't tell	Comments
Screening questions (for all types)	S1. Are there clear research questions?	✓			
	S2. Do the collected data allow to address the research questions?	✓			
	Further appraisal may not be feasible or appropriate when the answer is 'No' or 'Can't tell' to one or both screening questions.				
1. Qualitative	1.1. Is the qualitative approach appropriate to answer the research question?				
	1.2. Are the qualitative data collection methods adequate to address the research question?				
	1.3. Are the findings adequately derived from the data?				
	1.4. Is the interpretation of results sufficiently substantiated by data?				
	1.5. Is there coherence between qualitative data sources, collection, analysis and interpretation?				
2. Quantitative randomized controlled trials	2.1. Is randomization appropriately performed?				
	2.2. Are the groups comparable at baseline?				
	2.3. Are there complete outcome data?				
	2.4. Are outcome assessors blinded to the intervention provided?				
	2.5 Did the participants adhere to the assigned intervention?				
3. Quantitative non- randomized	3.1. Are the participants representative of the target population?				
	3.2. Are measurements appropriate regarding both the outcome and intervention (or exposure)?				
	3.3. Are there complete outcome data?				
	3.4. Are the confounders accounted for in the design and analysis?				
	3.5. During the study period, is the intervention administered (or exposure occurred) as intended?				
4. Quantitative descriptive	4.1. Is the sampling strategy relevant to address the research question?	✓			
	4.2. Is the sample representative of the target population?		✓		Roughly 47% of sent surveys completed
	4.3. Are the measurements appropriate?	✓			
	4.4. Is the risk of nonresponse bias low?		✓		
	4.5. Is the statistical analysis appropriate to answer the research question?	✓			
5. Mixed methods	5.1. Is there an adequate rationale for using a mixed methods design to address the research question?				
	5.2. Are the different components of the study effectively integrated to answer the research question?				
	5.3. Are the outputs of the integration of qualitative and quantitative components adequately interpreted?				
	5.4. Are divergences and inconsistencies between quantitative and qualitative results adequately addressed?				
	5.5. Do the different components of the study adhere to the quality criteria of each tradition of the methods involved?				

Molloy & Herold, 1985

Category of study designs	**Methodological quality criteria**	**Responses**			
		Yes	No	Can't tell	Comments
Screening questions (for all types)	S1. Are there clear research questions?	✓			
	S2. Do the collected data allow to address the research questions?	✓			
	Further appraisal may not be feasible or appropriate when the answer is 'No' or 'Can't tell' to one or both screening questions.				
1. Qualitative	1.1. Is the qualitative approach appropriate to answer the research question?				
	1.2. Are the qualitative data collection methods adequate to address the research question?				
	1.3. Are the findings adequately derived from the data?				
	1.4. Is the interpretation of results sufficiently substantiated by data?				
	1.5. Is there coherence between qualitative data sources, collection, analysis and interpretation?				
2. Quantitative randomized controlled trials	2.1. Is randomization appropriately performed?				
	2.2. Are the groups comparable at baseline?				
	2.3. Are there complete outcome data?				
	2.4. Are outcome assessors blinded to the intervention provided?				
	2.5 Did the participants adhere to the assigned intervention?				
3. Quantitative non- randomized	3.1. Are the participants representative of the target population?				
	3.2. Are measurements appropriate regarding both the outcome and intervention (or exposure)?				
	3.3. Are there complete outcome data?				
	3.4. Are the confounders accounted for in the design and analysis?				
	3.5. During the study period, is the intervention administered (or exposure occurred) as intended?				
4. Quantitative descriptive	4.1. Is the sampling strategy relevant to address the research question?	✓			
	4.2. Is the sample representative of the target population?		✓		Roughly 16% of sent surveys completed
	4.3. Are the measurements appropriate?	✓			
	4.4. Is the risk of nonresponse bias low?		✓		
	4.5. Is the statistical analysis appropriate to answer the research question?	✓			
5. Mixed methods	5.1. Is there an adequate rationale for using a mixed methods design to address the research question?				
	5.2. Are the different components of the study effectively integrated to answer the research question?				
	5.3. Are the outputs of the integration of qualitative and quantitative components adequately interpreted?				
	5.4. Are divergences and inconsistencies between quantitative and qualitative results adequately addressed?				
	5.5. Do the different components of the study adhere to the quality criteria of each tradition of the methods involved?				

Murphy *et al.* 2015

Category of study designs	**Methodological quality criteria**	**Responses**			
		Yes	No	Can't tell	Comments
Screening questions (for all types)	S1. Are there clear research questions?	✓			
	S2. Do the collected data allow to address the research questions?	✓			
	Further appraisal may not be feasible or appropriate when the answer is 'No' or 'Can't tell' to one or both screening questions.				
1. Qualitative	1.1. Is the qualitative approach appropriate to answer the research question?	✓			
	1.2. Are the qualitative data collection methods adequate to address the research question?	✓			
	1.3. Are the findings adequately derived from the data?	✓			
	1.4. Is the interpretation of results sufficiently substantiated by data?	✓			
	1.5. Is there coherence between qualitative data sources, collection, analysis and interpretation?	✓			
2. Quantitative randomized controlled trials	2.1. Is randomization appropriately performed?				
	2.2. Are the groups comparable at baseline?				
	2.3. Are there complete outcome data?				
	2.4. Are outcome assessors blinded to the intervention provided?				
	2.5 Did the participants adhere to the assigned intervention?				
3. Quantitative non- randomized	3.1. Are the participants representative of the target population?				
	3.2. Are measurements appropriate regarding both the outcome and intervention (or exposure)?				
	3.3. Are there complete outcome data?				
	3.4. Are the confounders accounted for in the design and analysis?				
	3.5. During the study period, is the intervention administered (or exposure occurred) as intended?				
4. Quantitative descriptive	4.1. Is the sampling strategy relevant to address the research question?				
	4.2. Is the sample representative of the target population?				
	4.3. Are the measurements appropriate?				
	4.4. Is the risk of nonresponse bias low?				
	4.5. Is the statistical analysis appropriate to answer the research question?				
5. Mixed methods	5.1. Is there an adequate rationale for using a mixed methods design to address the research question?				
	5.2. Are the different components of the study effectively integrated to answer the research question?				
	5.3. Are the outputs of the integration of qualitative and quantitative components adequately interpreted?				
	5.4. Are divergences and inconsistencies between quantitative and qualitative results adequately addressed?				
	5.5. Do the different components of the study adhere to the quality criteria of each tradition of the methods involved?				

Ride & Newton, 2018

Category of study designs	**Methodological quality criteria**	**Responses**			
		Yes	No	Can't tell	Comments
Screening questions (for all types)	S1. Are there clear research questions?	✓			
	S2. Do the collected data allow to address the research questions?	✓			
	Further appraisal may not be feasible or appropriate when the answer is 'No' or 'Can't tell' to one or both screening questions.				
1. Qualitative	1.1. Is the qualitative approach appropriate to answer the research question?				
	1.2. Are the qualitative data collection methods adequate to address the research question?				
	1.3. Are the findings adequately derived from the data?				
	1.4. Is the interpretation of results sufficiently substantiated by data?				
	1.5. Is there coherence between qualitative data sources, collection, analysis and interpretation?				
2. Quantitative randomized controlled trials	2.1. Is randomization appropriately performed?				
	2.2. Are the groups comparable at baseline?				
	2.3. Are there complete outcome data?				
	2.4. Are outcome assessors blinded to the intervention provided?				
	2.5 Did the participants adhere to the assigned intervention?				
3. Quantitative non- randomized	3.1. Are the participants representative of the target population?	✓			
	3.2. Are measurements appropriate regarding both the outcome and intervention (or exposure)?	✓			
	3.3. Are there complete outcome data?		✓		54% drop-off rate between follow-ups
	3.4. Are the confounders accounted for in the design and analysis?	✓			
	3.5. During the study period, is the intervention administered (or exposure occurred) as intended?		✓		Potential intergroup discussion
4. Quantitative descriptive	4.1. Is the sampling strategy relevant to address the research question?				
	4.2. Is the sample representative of the target population?				
	4.3. Are the measurements appropriate?				
	4.4. Is the risk of nonresponse bias low?				
	4.5. Is the statistical analysis appropriate to answer the research question?				
5. Mixed methods	5.1. Is there an adequate rationale for using a mixed methods design to address the research question?				
	5.2. Are the different components of the study effectively integrated to answer the research question?				
	5.3. Are the outputs of the integration of qualitative and quantitative components adequately interpreted?				
	5.4. Are divergences and inconsistencies between quantitative and qualitative results adequately addressed?				
	5.5. Do the different components of the study adhere to the quality criteria of each tradition of the methods involved?				

Simpson *et al.* 2006

Category of study designs	**Methodological quality criteria**	**Responses**			
		Yes	No	Can't tell	Comments
Screening questions (for all types)	S1. Are there clear research questions?	✓			
	S2. Do the collected data allow to address the research questions?	✓			
	Further appraisal may not be feasible or appropriate when the answer is 'No' or 'Can't tell' to one or both screening questions.				
1. Qualitative	1.1. Is the qualitative approach appropriate to answer the research question?	✓			
	1.2. Are the qualitative data collection methods adequate to address the research question?	✓			
	1.3. Are the findings adequately derived from the data?	✓			
	1.4. Is the interpretation of results sufficiently substantiated by data?	✓			
	1.5. Is there coherence between qualitative data sources, collection, analysis and interpretation?	✓			
2. Quantitative randomized controlled trials	2.1. Is randomization appropriately performed?				
	2.2. Are the groups comparable at baseline?				
	2.3. Are there complete outcome data?				
	2.4. Are outcome assessors blinded to the intervention provided?				
	2.5 Did the participants adhere to the assigned intervention?				
3. Quantitative non- randomized	3.1. Are the participants representative of the target population?				
	3.2. Are measurements appropriate regarding both the outcome and intervention (or exposure)?				
	3.3. Are there complete outcome data?				
	3.4. Are the confounders accounted for in the design and analysis?				
	3.5. During the study period, is the intervention administered (or exposure occurred) as intended?				
4. Quantitative descriptive	4.1. Is the sampling strategy relevant to address the research question?				
	4.2. Is the sample representative of the target population?				
	4.3. Are the measurements appropriate?				
	4.4. Is the risk of nonresponse bias low?				
	4.5. Is the statistical analysis appropriate to answer the research question?				
5. Mixed methods	5.1. Is there an adequate rationale for using a mixed methods design to address the research question?				
	5.2. Are the different components of the study effectively integrated to answer the research question?				
	5.3. Are the outputs of the integration of qualitative and quantitative components adequately interpreted?				
	5.4. Are divergences and inconsistencies between quantitative and qualitative results adequately addressed?				
	5.5. Do the different components of the study adhere to the quality criteria of each tradition of the methods involved?				

Smith *et al.* 2004

Category of study designs	**Methodological quality criteria**	**Responses**			
		Yes	No	Can't tell	Comments
Screening questions (for all types)	S1. Are there clear research questions?	✓			
	S2. Do the collected data allow to address the research questions?	✓			
	Further appraisal may not be feasible or appropriate when the answer is 'No' or 'Can't tell' to one or both screening questions.				
1. Qualitative	1.1. Is the qualitative approach appropriate to answer the research question?	✓			
	1.2. Are the qualitative data collection methods adequate to address the research question?	✓			
	1.3. Are the findings adequately derived from the data?	✓			
	1.4. Is the interpretation of results sufficiently substantiated by data?	✓			
	1.5. Is there coherence between qualitative data sources, collection, analysis and interpretation?	✓			
2. Quantitative randomized controlled trials	2.1. Is randomization appropriately performed?				
	2.2. Are the groups comparable at baseline?				
	2.3. Are there complete outcome data?				
	2.4. Are outcome assessors blinded to the intervention provided?				
	2.5 Did the participants adhere to the assigned intervention?				
3. Quantitative non- randomized	3.1. Are the participants representative of the target population?				
	3.2. Are measurements appropriate regarding both the outcome and intervention (or exposure)?				
	3.3. Are there complete outcome data?				
	3.4. Are the confounders accounted for in the design and analysis?				
	3.5. During the study period, is the intervention administered (or exposure occurred) as intended?				
4. Quantitative descriptive	4.1. Is the sampling strategy relevant to address the research question?				
	4.2. Is the sample representative of the target population?				
	4.3. Are the measurements appropriate?				
	4.4. Is the risk of nonresponse bias low?				
	4.5. Is the statistical analysis appropriate to answer the research question?				
5. Mixed methods	5.1. Is there an adequate rationale for using a mixed methods design to address the research question?				
	5.2. Are the different components of the study effectively integrated to answer the research question?				
	5.3. Are the outputs of the integration of qualitative and quantitative components adequately interpreted?				
	5.4. Are divergences and inconsistencies between quantitative and qualitative results adequately addressed?				
	5.5. Do the different components of the study adhere to the quality criteria of each tradition of the methods involved?				

Thompson *et al.* 2014