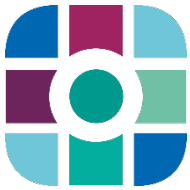
A review of the current evidence on the effectiveness of learning disability training programmes for NHS Trust staff

Anna Marriott and Naomi Harflett

April 2020

NDTi
National Development Team for Inclusion

NHS
Health Education England



National Development Team for Inclusion

First Floor
30-32 Westgate Buildings
Bath BA1 1EF
T: 01225 789135
F: 01225 338017

www.ndti.org.uk

Contents

1. Introduction

The National Development Team for Inclusion (NDTi) was commissioned in 2019 by the South Regional Health Education England Intellectual Disabilities programme to find and share best practice in training people who work in NHS Trusts to support people with learning disabilities. The aim is to support staff development to help them achieve better outcomes when working with people with learning disabilities. Further information about the project can be found here[1].

It is well established that people with learning disabilities have poorer health and die earlier than people in the general population (Alborz et al., 2005; Disability Rights Commission, 2006; Emerson and Hatton, 2014). Although genetics may play a role in this, most factors that impact on the health and wellbeing of people with intellectual disabilities are modifiable and therefore represent health inequalities. Poor access to health services, delays and problems in diagnosis and treatment are well known causes of health inequalities (Heslop et al., 2013). Many of these factors can be modified by addressing the barriers faced by people with learning disabilities, including lack of understanding of health issues, difficulties with communication problems and insufficient support to access health services.

A common theme in the deaths reviewed by the Learning Disability Mortality Review (LeDeR) Programme was the need for better training and awareness of learning disability (LeDeR, 2019). The importance of this was acknowledged by the Government when it published its response[2] to the consultation on proposals for introducing mandatory learning disability and autism training for health and social care staff. It has made a commitment that all health and social care staff will receive training on autism and learning disability and there will be funding to evaluate trial training packages, ahead of wider roll-out.

Therefore, the findings from NDTi's project to identify best practice in training people who work in NHS Trusts to support people with learning disabilities are particularly pertinent and timely. One aspect of NDTI's work was a review of published and unpublished literature to provide an evidence base about the most effective and sustainable approaches in relation to training for NHS Trust staff. This report is a detailed review of the relevant evidence we retrieved and there is also a summary report and an easy-read report available[3]. In addition to this literature search we have already conducted surveys with hospital staff. Our literature review and the findings from the surveys are being used more widely in this project to inform the contents of a Delphi Survey and the topic guides for interviews planned with hospital staff.

[1] https://www.ndti.org.uk/our-work/our-projects/peoples-health/sharing-best-practice-to-support-health-professionals/

[2] https://assets.publishing.service.gov.uk/government/uploads/system/uploads/attachment_data/file/844356/autism-and-learning-disability-training-for-staff-consultation-response.pdf

[3] https://www.ndti.org.uk/resources/publications/hee-project

The key research question for this literature review was:

What is the current evidence on the effectiveness of learning disability training programmes directed at staff working in NHS Trusts?

More specifically, we looked at:

- What are the characteristics of the training programmes in the selected studies?
- Based on Kirkpatrick's Evaluation Framework (2009), at which level are these training programmes evaluated?
- How effective are these training programmes at the levels identified by Kirkpatrick?
- How sustainable are the approaches identified?

2. Search strategy and results

Our primary search aimed to identify papers that related to learning disability training in healthcare settings. Following review of the papers retrieved by this search strategy we extended our review to include two further focused searches. Search 2 looked for papers relating to other training for NHS Trust staff and search 3 looked for evidence about the effectiveness of learning disability training in non-health settings, for example, training for the Police. We felt that widening the searches would allow us to benefit from transferable learning in related areas.

We searched for relevant evidence in the following databases:

- Web of Science (this includes Social Sciences Citation Index)
- Medline
- PsycINFO
- The Cumulative Index to Nursing and Allied Health Literature (CINAHL)
- SCIE Social Care Online
- NICE Evidence Search
- Cochrane Library

We purposively selected an iterative (as opposed to linear) strategy for the literature search, which recognises that search terms may be refined as familiarity with the existing body of evidence grows. This approach allowed for additional terms to be included in the search as new evidence was identified. The table below shows the final search terms that were used for the primary search. Searches 2 and 3 used a sub-set of these terms. The search terms were combined appropriately using Boolean operators.

Table 1: Search terms used for the primary search

Population Search terms related to learning disabilities (combined with OR)	**Intervention** Search terms related to training models (combined with OR)	**Setting** Search terms related to the setting (combined with OR)	**Outcomes** Search terms related to outcomes (combined with OR)
Learning disabilit*	Training	NHS Trust*	Knowledge
Intellectual disabilit*	Education*	Mental Health Trust*	Skills
Intellectual impair*	Teach*	Hospital*	Attitudes

Population Search terms related to learning disabilities (combined with OR)	**Intervention** Search terms related to training models (combined with OR)	**Setting** Search terms related to the setting (combined with OR)	**Outcomes** Search terms related to outcomes (combined with OR)
Intellectual development disorder*	Learning disabilit* awareness	Ambulance service*	Compliance
Learning difficult*	Program*	Community Health Trust*	Evaluat*
Mental* disab*	E-learning		Effective*
Mental* retard*	On-line training		Reasonable adjustments
Mental* handicap*	Train the trainer		
Mental* impair*	Guidance		
Developmental delay	Workshop		
Developmental disabilit*	Course		
Special needs			

Criteria for inclusion/exclusion:

- The search identified international literature but was be limited to journals and articles published in English.
- Studies published from 2009 onwards.
- Studies which involved training for staff but did not measure the effect on outcomes were excluded[3].
- The review considered literature and reports that utilised both quantitative and qualitative research designs and analysis as well as systematic reviews.
- Grey literature that has not been peer-reviewed was considered where a description of methods was provided.
- Editorials, newspaper and magazine articles, or other opinion pieces were excluded.

[4] One article (Marshall-Tate, 2016) refers to preliminary findings only of an evaluation that had not been fully analysed at the time of writing. It has been included due to the insights it provides on development of the education.

The titles and abstract of all hits from the primary search were read. Articles that met the inclusion criteria were retrieved and read in full and further assessed for eligibility. This search identified 11 articles that met our inclusion criteria. We also identified eight articles that were about learning disability awareness training or education for students and two that identified training needs.

In addition to searching databases for peer reviewed articles, a call for information was issued to organisations known to be working in this area in November 2019. This sought to identify grey literature or unpublished reports that would not be identified in the formal search. Three of these reports are included in this review.

The relevant research studies identified (24) were read, reviewed, and brief details of the studies and their findings were mapped in an evidence grid (See Appendix 1). Factors such as the content, mode of delivery, length, and impact of the training were extracted for each programme and compared with one another.

Article selection from searches 2 and 3 was focused on identifying studies that were deemed to have specific useful transferable learning or could expand upon findings from the articles identified through the primary search. Nine articles identified through searches 2 and 3 were retrieved and read in full. These articles have not been included in the evidence grid, as they are not directly relevant to our research question. However, relevant learning from them has been incorporated into our discussion of what this literature search has told us about the most effective learning disability training for staff working in NHS trusts.

As our focus was on the effectiveness of training programmes, we did not search for papers that simply described the content of a training package. Rather, we were interested in studies that measure the effect of the training on outcomes, such as staff knowledge or attitudes or better outcomes for patients. We used Kirkpatrick's Four-Level Training Evaluation Model to help us explore the impact of the training models identified. This considers learning at four levels:

Level 1: Reaction

This is a measure of how participants found the training. It considers if people found it enjoyable, engaging and a good use of their time. This is often measured by asking participants to fill out feedback forms after the training.

Level 2: Learning

This level considers if the training increased the knowledge, skills and confidence of the participants. This information might be gathered by assessing people's knowledge before and after the training or a control group might be used.

Level 3: Behaviour

This is an analysis of the extent to which participants are applying what they learned and if the training has led to a change of behaviour. This cannot usually be explored until several months after the training. Data might be collected through interviews, observations or surveys. In relation to our review this might mean evidence of staff using reasonable adjustments.

Level 4: Results

This level reflects the degree to which the desired goals of the training were achieved. It is a measure of the overall success of the training programme. The factors that need to be assessed to measure effectiveness at this level will relate to the aims of the training. In relation to our review this would entail evidence of better outcomes for people with learning disabilities receiving care and treatment from an NHS trust.

In addition to this, we also considered the impact of the training programme on any experts by experience who were involved in designing or delivering it. There could be positive outcomes for the individual, such as increased confidence and skills or more practical benefits, such as paid employment.

The levels at which the training was evaluated in each study was noted and recorded. As part of the evidence review, notes on the quality, validity and robustness of the research were made to inform the strength of the contribution that each article could make to the evidence base.

3. Quality and limitations of the evidence

Overall, the searches found relatively few studies that focused on learning disability training delivered in a health care setting. Within the 14 studies that did, there were a number of limitations in relation to methodology, sample size and content of the article. Systematic reviews of dementia/cognitive impairment training have had similar concerns about the quality of the evidence retrieved. These concerns included lack of control groups, power calculations, a paucity of delayed testing and no evidence about patient outcomes (Scerri et al, 2016; Abley et al., 2019).

Most of the studies we reviewed involved quantitative questionnaires. One study involved a post-training questionnaire only; one involved a pre-training questionnaire and a post training discussion; six involved a pre- and post- questionnaire; just four included a follow up questionnaire or survey a period of time after the training. There were no randomised controlled trials, or studies that compared two or more elements of the training. This means that while most of the studies measured the immediate change, for example in knowledge or confidence, very few measured whether the change was sustained, or the impact the training had on practice. Of the quantitative studies some had large sample sizes, but a few had small sample sizes of between 24 and 34 (Hatton, 2008; Heneage et al., 2010; Billon et al., 2016; Mengoni & Redman, 2019). Within the questionnaire-based studies, while some included standardised measures, many used bespoke questionnaires or feedback forms.

Qualitative methods were the prime method for just one study (Attoe et al., 2017); a further five studies included an element of qualitative research. One article included is a literature review. The relatively low number of studies that included qualitative methods means that for some, while they reported an increase in, for example knowledge or confidence, there is limited insight into why, or which characteristics of the training were particularly effective. While some of the studies provide comprehensive information about the content and characteristics of the training, some provide none at all, meaning that there is little to draw on to reflect on what it is that leads to the positive outcomes reported.

Using Kirkpatrick's model, most studies could demonstrate impact at the learning level and a small number measured change at the behaviour level.[5] It should be noted that for one of the studies reporting impact at the behaviour level it was unclear whether the behaviour change described was attributable to the training and for three of the studies the behaviour change described was very limited or very limited detail was provided. No studies measured change at the results level.[4] See Table 2 for details.

[5] This was also true for the articles about learning disability awareness training or education for students

Table 2: The level of effectiveness assessed in the papers reviewed

Kirkpatrick Level of Effectiveness	Number of papers reporting at this level (N=14)
1. Reaction	5
2. Learning	12
3. Behaviour	6
4. Results	0

Despite these limitations, the findings in the identified studies, plus the wider literature from searches 2 and 3, provide insight that highlight some potentially key characteristics of effective learning disability training.

4. Content

Although not all the studies included information about the training or course content, a small number provided an overview of the main subject areas covered or an outline of the course. In addition, a systematic review on the training needs identified by healthcare professionals to prepare them for working with people with learning disabilities identified the most common elements of general training or courses (Hemm et al., 2015). Another review of the recommendations from contemporary national reports on healthcare provision and the needs of people with intellectual disabilities identified a set of recommendations for medical students (Spackman et al., 2016). Across these reviews and studies, ten common areas of content for learning disability training for healthcare professionals can be summarised. See Table 3.

Table 3: Content for learning disability training for healthcare professionals

Common areas of content for learning disability training for healthcare professionals	Studies that referenced this content
General information about what a learning disability is	Heneage et al., 2010 Buchanan, 2011 Billon et al., 2016 Dagnan et al., 2018 Certitude, 2019
Health inequality experienced by people with learning disabilities (including key evidence and reports)	Buchanan, 2011 Billon et al., 2016 Certitude, 2019
Stigma, discrimination and attitudes	Read & Rushton, 2013 Spackman et al., 2016 Dagnan et al., 2018
Communication	Spackman et al., 2016 Dagnan et al., 2018
The hospital process – admission, assessment, discharge planning	Buchanan, 2011 Read & Rushton, 2013 Dagnan et al., 2018

Common areas of content for learning disability training for healthcare professionals	Studies that referenced this content
Support for people with learning disabilities both within the hospital/healthcare services (including link nurse, community teams, learning disability nurse, hospital passport) and other services outside of health	Buchanan, 2011 Dagnan et al., 2018 Certitude, 2019
Legal issues and frameworks (including consent, the Mental Capacity Act 2005, the Equality Act 2010, Deprivation of Liberty Safeguards)	Buchanan, 2011 Spackman et al., 2016 Certitude, 2019
Reasonable adjustments	Billon et al., 2016 Spackman et al., 2016 Certitude, 2019
Mental health needs of people with learning disabilities	Heneage et al., 2010 Spackman et al., 2016
Profession-specific needs (i.e. for training delivered to a specific group of professionals)	Hemm et al., 2015

Hemm et al.'s (2015) review found that there was a great deal of overlap in needs identified by different professional groups, indicating that a core training package is feasible. They suggest that 'profession-specific' areas that are specific to the job role of different professional groups, could be an 'add-on' to the main package.

5. Findings

The effectiveness of different characteristics of the training and courses is explored below. Overall, across the body of research, there is evidence to show that undertaking learning disability awareness training had a positive impact on learning and confidence. The research shows that it led to:

- an **increase in knowledge** (Hatton, 2008; Heneage et al., 2010; Buchanan, 2011; Read & Rushton, 2013; Harwood & Hassiotis, 2014; Watkins & Colgate, 2016; Piper & Alazzi; 2017; Mengoni & Redman, 2019)
- an **increase in confidence** (Hatton, 2008; Heneage et al., 2010; O'Boyle-Duggan, 2010; O'Boyle-Duggan et al., 2012; Billon et al., 2016; Dagnan et al., 2018)
- a **positive change in attitudes towards people with learning disabilities** (Harwood & Hassiotis, 2014; Billon et al., 2016; Watkins & Colgate, 2016; Dagnan et al., 2018)
- **increased awareness of services for people with a learning disability** (Buchanan, 2011; Read & Rushton, 2013)
- **improved understanding of how to care for patients with a learning disability** (Read & Rushton, 2013)
- an **increase in skills** as measured by the Healthcare Skills Questionnaire (Billon et al., 2016) or perceived skill (Thomas et al., 2014).

Although we found evidence of an increase in confidence and positive changes in attitudes towards people with learning disabilities, it should be noted that human rights training has been shown to increase knowledge but did not create attitudinal change (Redman et al., 2012). The authors of this paper argued that both are needed to lead to meaningful change. Also, within dementia training, increases in confidence were not always maintained (Abley et al., 2019).

As outlined, above, very few studies conducted follow up research over a longer period to measure changes in practice, however, a number provided some **examples of changes in practice** as a result of the training. Qualitative interviews with participants of a training programme for 'Improving Access to Psychological Therapies' (IAPT) practitioners about the impact of the training on their practice found that all participants could identify changes to their practice that they attributed to the training sessions (Dagnan et al., 2018). An evaluation of a pilot project run by Mencap to deliver learning disability training to healthcare professionals found that 98% of the 302 attendees who completed a post-training questionnaire were motivated to change their practice after the training. Four of the five people who responded to a follow up survey six months after the training said that they had handled a situation differently as a result of the training (Piper & Alazzi, 2017). One study reported an increase in referrals from the hospital to the community team, improved access to care records and the recruitment of link nurses, although it should be highlighted that it is not clear if these changes are as a result of the training. The same study reports anecdotal evidence from service users and carers that the awareness sessions improved patient experiences (Buchanan, 2011). In a study on the use of simulation training for students, focus groups found that the skills explored and practiced during the simulation had a positive influence on patient care while on clinical placements (O'Boyle-Duggan et al., 2012). A study evaluating learning disability and autism training to a range of staff in a private secure mental health rehabilitation unit conducted follow up interviews one to four months after the training. Respondents reported putting their learning into practice by considering their communication styles, adapting working practices (e.g. developing picture timetables) and further consolidating their learning (Hatton, 2008). Another study providing autism training to administrative staff used case vignettes which were based on real life problems people with autism had experienced when trying to access the service. The authors concluded that these made the training relevant and led to changes in staff behaviour (Clark et al., 2016). Within dementia training it has been shown that staff found experiential, reflective and active learning useful (Scerri et al., 2017).

There is also some evidence of the impact of training on people with learning disabilities involved in developing or delivering the training courses. An article that reports on the experiences of three actors with learning disabilities who were involved in designing and delivering training highlights their positive experience of this (Attoe et al., 2017). Another study reports on a partnership between three higher education institutions and a theatre company that included professionally trained actors with learning disabilities, where they developed a communication skills workshop for health care students. The study found that the collaboration provided genuine and sustained employment for actors with intellectual disabilities and improved their financial independence, self-esteem and well-being (Metcalfe & Colgate, 2019). A project delivering learning disability training to 1,641 criminal justice professionals including police, probation and offending managers, prison staff and magistrates provided in-house training to the co-trainers, who were people with learning disabilities. The evaluation observed that the training led to more confidence, and greater self-esteem for the co-trainers (Burleigh and Vaughan, 2018). Certitude's training to information and advice service staff, which was co-delivered by people with lived experience of autism and/or learning disabilities, provided paid employment and development opportunities for the trainers (Certitude, 2019).

There is clear evidence that learning disability training can lead to positive outcomes in terms of increased knowledge, confidence and attitudes and some evidence to suggest that it leads to change in practice. The rest of this review focuses on what the evidence tells us about the characteristics of the training, in terms of development and delivery, that make the training effective.

a) Who developed the training?

A small number of studies describe the process of developing the training session or courses. Where this was reported, the benefit of involving people with learning disabilities and a range of professionals at the development or design stage was highlighted. A study that looked at the outcome of workshops that were designed to maximise the use of a health toolkit for health professionals indicated that taking a collaborative approach with people with a learning disability and carers produced a resource that was more likely to be useful in practice (Read & Rushton, 2013). Attoe et al.'s (2017) report on the experiences of three actors with learning disabilities who were involved in designing training highlighted the importance of co-production for those involved. An article outlining a two-year project to develop and deliver training to improve the health outcomes for people with learning disabilities in South London described a committee that was established to prepare the sessions that included experts by experience. As well as emphasising the importance of including experts by experience, the paper stressed the benefits of involving a range of professionals (Marshall-Tate, 2016). These demonstrate the benefits of a development and design process that is co-produced with both people with learning disabilities and representatives of the range of healthcare professionals that the training is intended for.

b) Who delivered the training?

Where the studies include information on who the training is delivered by, a significant number emphasise the benefits of involving people with learning disabilities in delivery or facilitation of the training.

The Mencap training was delivered to healthcare professionals through two to three half-day training modules. Six of the 28 Mencap courses were delivered with a co-trainer with a learning disability. The evaluation found that there was positive feedback about this; there was evidence it enriched participants' experiences to hear from people who had been through the challenges presented during the training with comments such as:

> *"It was inspiring to see how positive Ciara was. It made me completely rethink learning disability."*

However, there were no significant differences in terms of changes of knowledge between those participants who had experience of a co-trainer with a learning disability and those who did not (Piper & Alazzi, 2017).

In 2018 to 2019 Certitude's Treat Me Right! team ran a project to provide training to information and advice service staff (including Patient Advice and Liaison Service (PALS) teams) to improve knowledge about supporting the health needs of people with learning disabilities and/or autism. The project delivered 95 training sessions to 802 people. All training sessions were co-delivered by Treat Me Right! trainers, at least one of whom had lived experience of autism and/or learning disabilities. Informed by feedback from questionnaires, Certitude's project report emphasises that the sharing of lived experience was key to the success of the training. People were able to see examples of what was being talked about, which reinforced the lessons and they were able to hear real life stories about what had worked and what had presented challenges (Certitude, 2019).

A report on a training session delivered to Improving Access to Psychological Therapies (IAPT) practitioners by a trainer and a service user with learning disabilities where the trainer presented factual information and the service user spoke about her own experiences, found that participants attributed their increase in knowledge principally to the opportunity to have contact with someone with experience of learning disability and mental health services (Heneage et al., 2010). A small study surveyed medical students after their participation in an educational programme that included:

- a tutorial delivered by a self-advocacy agency run for, and by, people with a learning disability
- interaction with a simulated patient played by an actor with a learning disability.

It found that the results were consistent with previous studies that demonstrate interaction with people with intellectual disabilities can positively change students' attitudes (Watkins & Colgate, 2016). Marshall-Tate (2016) concluded that the inclusion of people with learning disabilities in the delivery of workshops led to "positive attitudinal changes" (page 346). However, this is based on initial findings and feedback as opposed to formal analysis. An evaluation of a project delivering learning disability training to criminal justice professionals found that participants appreciated the open and honest approach of the co-trainers (people with learning disabilities). The sharing of their personal experiences illustrated it is possible to provide treatment in a very different and more responsive way (Burleigh and Vaughan, 2018).

The findings from these studies are also emphasised by reviews of the evidence. Tollow's review (2017) of what works to change healthcare professional's behaviour towards people with a learning disability looked at the active ingredients of education. It found that interventions featuring contact with people with a learning disability are known to be particularly effective, with suggested benefits for all involved. Spackman et al. (2016) reviewed the recommendations from contemporary national reports on healthcare provision and the needs of people with intellectual disabilities and used them to identify a set of recommendations for undergraduate curricula for medical students.

They proposed that learning should involve people with learning disabilities and carers or family of people with learning disabilities. A review of interventions aimed at increasing knowledge and targeting negative attitudes towards people with learning disabilities among lay people found that contact, both direct and indirect, with people with intellectual disabilities had favourable effects on attitudes in most studies, but positive outcomes were not universal and there was some suggestion that there may be an optimal amount of contact (Seewooruttun & Scior, 2014). The evidence is limited though by the weaknesses of the measurement tools used and the lack of baseline data in some studies.

Looking beyond learning disabilities, a literature review of interventions aimed at educating health professionals (including students) about disability in general identified a range of types of professional education. The review found 15 papers on teaching delivered by disabled people or their family members and highlighted that hearing from those with direct experience of disability is likely to make more impact and be more memorable. In terms of outcomes of the training, it found that across the studies, the most positive findings were of opportunities to meet disabled or older people and that these were associated with positive change in attitudes (Shakespeare & Kleine, 2013). A critical synthesis of evidence on 'What works in delivering dementia education or training to hospital staff?' found that training which utilised the direct voices of people with dementia and their carers, was particularly valued by staff attending training (Surr & Gates, 2017).

Hemm at al. (2015) emphasise the value of training being delivered by learning disability practitioners as well as people with lived experience of learning disabilities. Following a systematic review on training needs identified by healthcare professionals they suggest that training sessions may be more effective if delivered in part by learning disability practitioners (to allow the opportunity for professionals to liaise/consult), as well as individuals with learning disabilities (to increase the ability for attendees to contextualise their learning).

It is important to remember that the approach of the trainer is also critical. Mencap's training evaluation emphasised the importance of the quality of the trainer; they found that the quality of the learning derives from the quality of the trainer as much as the content (Piper & Alazzi, 2017). The positive adjectives used to describe the trainer included "passionate", "engaging" and "inspirational".

c) Who received the training?

Some of the papers reviewed looked at who the training was delivered to and in particular the benefits, or otherwise, of delivering training to single profession or multi-profession groups.

Mencap (2017) found that both 'open training' and 'in-house' training seemed to work. Open training (with a mix of professions, grades and specialisms in one session) was effective in supporting a shift in attitudes and assumptions, and in-house training (in a single setting (e.g. GP surgery) or for a specific specialism (e.g. dentistry), was also effective, but required greater adaptation of the training content.

The evaluation of a communication skills workshop for healthcare students reported that students found the inter-professional nature of the course enabled them to learn more about the roles of their colleagues in other disciplines (Metcalf & Colgate, 2019). In their literature review Shakespeare and Kleine (2013) highlight that inter-professional education appears particularly appropriate for learning about disability, given that disabled people often engage with a multiplicity of different professionals. Scerri et al.'s (2017) systematic review of dementia training programmes for staff working in general hospital settings concluded that although there are various methods of delivery that can be used, interdisciplinary ward-based sessions seem to be the most favoured. A study that evaluated learning disability and autism training in a private secure mental health rehabilitation unit to a range of staff including housekeeping, catering, social work, nursing, occupational therapy, education, healthcare workers, nutritional scientists and maintenance highlights the utility of training staff members in groups comprising various disciplines; not only did this facilitate healthy discussion from varying perspectives, it created an opportunity for team building (Hatton, 2008).

While this is explored only in a small number of studies, it highlights that there may be benefits of learning alongside people from a range of professions.

d) How was the training delivered?

None of the evaluations included a comparison of different modes of delivery within the same study. Most of the papers reviewed reported on face to face delivery but did not measure the effectiveness of this in comparison to other possible options. Hatton (2008) developed face to face training in direct response to staff dissatisfaction with the online training they had previously received. Staff had reported being unable to clarify questions they had during online learning and often felt time pressure to complete the learning as quickly as possible, thus potentially limiting the amount of learning completed. The face to face training delivered was well received and was extended to other subject areas.

There is mixed evidence about the effectiveness of online or e-learning. A US study that piloted a two-hour long education programme (one hour online and one hour instructor led) on managing challenging behaviour of children with developmental disabilities for staff in a paediatric hospital, found that after the on-line education, only just over 40% of staff indicated strong agreement that they knew how to prevent challenging behaviours or what to do during the behaviours. Participants in the instructor led sessions reported improved knowledge and decreased fear about caring for children with developmental disabilities. They concluded that the on-line education alone did not appear to be enough to develop confidence for staff to identify and respond to challenging behaviours (Johnson et al., 2012). A systematic review of dementia training programmes for staff working in general hospital settings found two studies that included e-learning. These studies reported poor uptake and that the online experience proved challenging to staff. This led the authors to conclude that these studies indicated that e-learning may not be feasible in a hospital setting, especially when resources such as the participants' time and internet access are limited and staff are not familiar with the use of information technology platforms (Scerri et al., 2017).

Similarly, in their critical synthesis of evidence on delivering dementia education or training to hospital staff, Surr and Gates (2017) found challenges around study via e-learning due to problems with individual motivation and with accessing the internet in the workplace.

Other studies tentatively report more positive findings. A study evaluating an undergraduate medicine training in learning disability that was delivered by lecture and e-learning concluded that the online module achieved its objectives of increasing knowledge, skills and reducing stigmatising attitudes (Harwood & Hassiotis, 2014). A systematic review of technology-delivered disability training and support for service providers (not health providers) found three studies that found no significant differences between face-to-face and online modes of delivery. However, the authors had concerns about the quality of the studies and thus concluded that whilst the use of online technology shows promise, there is currently weak evidence to support its use (Johnsson et al., 2016). Marshall-Tate (2016) described a two-year project to develop and deliver training to improve the health outcomes for people with learning disabilities in South London. They noted the potential of the e-learning platform to reach large numbers of staff and that it can enable learners to complete modules at their own pace and location. However, at the time of writing the paper the evaluation of the training had not been completed.

There is a body of work that highlights the positive outcomes of simulation training – where people take part in role play scenarios with simulated patients with learning disabilities. Tollow's review (2017) found that the evidence suggests interactive educational interventions, such as simulation learning, are more likely to be effective in changing healthcare professional's behaviour than other educational interventions. It should be noted that not all the relevant articles were learning disability specific.

In summary, the evidence shows that simulation training can:

- give students the opportunity to practise decision making in challenging situations before encountering them in practice (Saunder & Berridge, 2015)
- lead to improvements in the students' perceived skill, comfort and the type of clinical approach (interestingly, the improvement was more significant for scenarios involving people with severe intellectual disabilities compared with those involving people with mild intellectual) (Thomas et al., 2014)
- lead to increased confidence (O'Boyle-Duggan, 2010; O-Boyle-Duggan et al., 2012)
- have a positive influence on patient care while on clinical placements (O'Boyle-Duggan et al., 2012).

Shakespeare and Kleine (2013) emphasised that although simulation exercises can be highly valued by participants, there is a risk of seeing disability in individualistic terms.

While simulation training is unlikely to be an option that can be rolled out widely within health settings due to the high financial cost of delivery, the studies in this area do emphasise the importance of experiential learning. This is further supported by Scerri et al.'s (2017) systematic review of dementia training programmes for staff working in general hospital settings, which found that staff satisfaction is better where experiential, reflective and active learning is used.

Two of the studies reviewed asked people to give feedback about preferred formats or mode of delivery for future training. The most popular options identified by health visitors in Mengoni and Redman's (2019) study were half-day and full-day training courses, conferences or talks and e-learning. A small survey of trainee junior doctors found that the most popular delivery of information was oral presentation and hand out at induction, followed by an electronic document (Thaliyata & Reynolds, 2017). It should be noted that this sample size was particularly small with just 11 respondents, so further investigation would be needed to confirm this.

A number of studies refer to materials that have been used to support the training such as a pocket guide for good practice (Marshall-Tate, 2016) and an information pack to support shorter sessions (Buchanan, 2011), but evaluations of the effectiveness of these materials are not included. In Hemm at al.'s (2015) systematic review on training needs identified by healthcare professionals the authors suggest that some of the knowledge-based needs could be provided within a handbook.

e) How long was the training?

There are mixed findings regarding the optimum length of training, with a clear challenge around striking the right balance between covering enough information to be effective and fitting in to busy professionals' working patterns.

Several studies emphasise the benefits of short training sessions. A study evaluating a two-hour pilot training session led by community learning disability nurses describes how, following feedback, they reduced the session to 30 minutes so that it could be delivered on wards and to promote attendance. An information pack was developed to support the shorter session (Buchanan, 2011). Hatton's (2008) evaluation of learning disability and autism training to a range of staff in a private secure mental health rehabilitation unit found that a brief in-house training package, just one hour long, can have a positive effect. A US study of an education module on caring for children with special behavioural needs in the emergency setting, which involved a five to ten minute verbal presentation and written materials, found that knowledge and comfort with caring for children with behavioural special needs increased immediately after the educational module and this was maintained after one month with only small losses (Brynes et al., 2017). They conclude that *"The intervention here is brief, easily implemented, and offers improved outcomes. Because it is brief it does not have an impact on workflow or workload." (p206).* Scerri et al.'s (2017) systematic review of dementia training programmes for staff working in general hospital settings concluded that short training

sessions seem to be the most favoured. While the Mencap training evaluation received consistent feedback that the course could be improved by being longer, it was also acknowledged that this could make it harder for some to attend. The evaluation found that there was a particular challenge in getting doctors to attend the training (Piper & Alazzi, 2017). Shakespeare and Kleine (2013) noted that obstacles to improving teaching about disability included clinical overload and time pressures.

Surr and Gates' (2017) critical synthesis of evidence on 'What works in delivering dementia education or training to hospital staff?' offers a different view, recommending that training should be of at least one-day duration and delivered ideally in full day training sessions. They emphasised that relying on individuals to schedule time for their own training, through e-learning or in-practice sessions, can be less effective. It can be difficult for learners to negotiate adequate, or any, time for learning, particularly when there are significant work pressures and staff shortages. Instead, they suggested that programmes most likely to lead to positive attitude change and increased staff confidence were of longer duration and classroom-based, and thus did not rely on staff to negotiate or set aside their own time for learning for example within daily practice.

The evidence emphasises the significant challenge posed around the need for short training sessions to ensure maximum attendance and greater reach, versus the length of time needed to cover sufficient information to improve knowledge. The Buchanan (2011) and Brynes et al. (2017) studies suggest that one solution may be to offer very short sessions, supported by further written information.

f) What other organisational factors help or hinder people putting their training into practice?

A final element addressed is the importance of the environment in the effectiveness of the training that is delivered. In Tollow's (2017) review she highlights that interventions were more effective when they identified and addressed specific barriers to behaviour change which may include environmental as well as personal barriers. Piper & Alazzi (2017) found that the three most cited barriers to implementing good practice were:

- time pressures
- the attitudes, knowledge and habits of colleagues
- power dynamics

This suggests that as well as the characteristics and quality of the training itself, in order to be fully effective, the structure of workloads and schedules and the culture of the organisation need to support implementation of the training. One suggestion for embedding learning within organisations is highlighted in Scurr and Gates' (2017) critical synthesis of the evidence on delivering dementia training. They found that the evidence reviewed indicated that developing a number of staff within the workforce to act as 'experts' or 'champions', who help to embed learning in practice and act as an ongoing resource for other staff post-training, is more likely to lead to positive outcomes.

6. Conclusion

Despite some of the limitations in the evidence, from the studies reviewed a number of key conclusions regarding the delivery of effective learning disability training in a health setting can be made[6]:

- Training should be designed and developed with people with learning disabilities and the staff who will be receiving the training.
- Training should be co-delivered or co-facilitated with people with learning disabilities – this makes it more impactful and memorable.
- Training can lead to an increase in knowledge and confidence and positive changes in attitudes (although this may not be maintained or result in behavioural change).
- The inclusion of real-life stories and active learning strengthens the training.
- There are benefits for people with learning disabilities in being involved in delivery of training. These include financial independence, increased confidence, self-esteem and well-being.
- There are benefits of training in mixed profession groups – this suggests it is possible to deliver training to tier 1 and tier 2 staff working in a range of roles.
- A core training package is feasible for different professional groups.
- Face to face training is more effective and practical in busy health care settings than online training.
- Short sessions that fit in to busy working schedules offer advantages over full day training courses.

[6] The multiple references for each point are cited in section 5.

We propose that the suggestions above can be used to guide the content, format and approach of learning disability awareness training for staff in NHS Trusts. However, it is clear from this review of the evidence that there is a need for further research in this area.

The mixed findings about the ideal length of training requires further examination. Training of a longer duration may be necessary to ensure it leads to improved confidence and more positive attitudes. Conversely, busy professionals find it hard to attend longer sessions. Further research and evaluation could help identify the optimal length of training; this may vary for different professional groups. Further evaluation is also needed about the benefits of training materials and resources that accompany training. There is evidence that the system that people work within and the culture of the organisation impacts how good practice is implemented (Piper & Alazzi, 2017) but our review identified a lack of research about the organisation and environment.

In particular there is a lack of longitudinal research that measures the effect of learning disability training a period of time after the training has taken place. This is needed to enable researchers to demonstrate whether the knowledge, confidence and attitudes that has been found to increase immediately post training is sustained (Level 2 in Kirkpatrick's model). We found minimal evidence exploring this but a review of dementia training suggested that confidence may be increased post-training but declines over time (Surr and Gates, 2017). Therefore, further support or training refresher sessions may be required.

It is also important to note that research about training in other areas has shown that an increase in knowledge may not create attitudinal change (Redman et al., 2012). This emphasises the importance of researching whether participants are applying what they learned and if the training has led to changes in their practice and behaviour (Level 3 in Kirkpatrick's model). Whilst we were able to identify some research which looked at examples of changes in practice as a result of the training, we believe this evidence could be strengthened.

Most significantly, we were unable to identify **any** research that measured change at the results level (Level 4 in Kirkpatrick's model). This was also found to be the case in systematic reviews of training around dementia and cognitive impairment (Scerri et al, 2017; Abley et al., 2019). This is a crucial gap as generally this is considered to be the measure of the overall success of any training programme. In relation to learning disability awareness training, research at this level would measure the impact on the experiences of people with learning disabilities accessing health services. Ultimately an improvement in people's experiences, and outcomes of, healthcare must be the aim of learning disability training for NHS Trust staff. We believe it is vital that this is addressed in future research.

Appendix 1. Evidence grid for review

J = Peer reviewed journal article
UR = Unpublished report
R = Report

Author, date and title	Methodology and sample size	Summary of aim, characteristics of training programme and key findings
1. Learning disability training or education in health setting (14 articles)		
Attoe, C., Billon, G., Riches, S., Marshall-Tate, K., Wheildon, J. and Cross, S. (2017) Actors with intellectual disabilities in mental health simulation training, Journal of Mental Health Training Education and Practice, 12 (4) **(J)**	Actors involved in the training as simulated patients provided feedback on their experiences (n=3 (out of the 4 actors involved))	**Aim**: To report on the co-production and co-delivery of a simulation training course to support healthcare professionals to provide care for people with intellectual disabilities. **Characteristics:** The training was designed with actors with intellectual disabilities, who participated as simulated patients in scenarios during the course. The simulation training was delivered on four occasions in the simulation centre over a four-month period. The sessions were full training days for 12 participants. There was a balanced combination of clinicians from a mental health background and clinicians from other healthcare settings, including acute hospitals and dentistry. **Relevant findings:** The design and delivery of this course, as well as preliminary findings on its education outcomes from course participant feedback, have been published elsewhere (Billon et al., 2016). This paper focusses on the positive experiences of the simulated patients, reporting on their direct feedback on their experience of contributing to the development and delivery of the course and being involved as co-educators. It provides a positive illustration of how an educational intervention can be tailored to address the challenges of providing training to improve healthcare inequalities for people with intellectual disabilities. The importance of co-production and co-delivery of such interventions was highlighted.

Author, date and title	Methodology and sample size	Summary of aim, characteristics of training programme and key findings
Brynes, N., Lee, H., Ren, D. and Beach, M. (2017), Improvement of patient- and family-specific care for children with special behavioral needs in the emergency setting: a behavioral needs education, Journal of Emergency Nursing, 43 (3) **(J)**	Pre- post- and one month follow up questionnaire (n=122)	**Aim:** To develop and implement an educational module in the clinical setting; to evaluate the effect of the educational module on provider behaviours; and to evaluate effectiveness of the module on outcomes. **Characteristics:** Education was delivered to a range of health staff over a 2-month period. The education module was delivered both individually and in groups. A five- to ten- minute verbal demonstration with written materials was used. A total of 122 staff participated. Education covered definition and identification of Children with Special Health Care Needs (CSHCN), verbal and non-verbal escalation, least-restrictive measures, fewer care and geographical transitions, and evidence-based resources for working with CSHCN. **Relevant findings:** Knowledge of and comfort with caring for children with behavioural special needs increased both immediately after the educational module was presented and maintained at a higher level after 1 month with only small losses. This brief, easily implemented, intervention offers improved outcomes. Because it is brief it does not have an impact on workflow or workload.
Billon, G., Attoe, C., Marshall-Tate, K., Riches, S., Wheildon, J. and Cross, S. (2016), Simulation training to support healthcare professionals to meet the health needs of people with intellectual disabilities, Advances in Mental Health and Intellectual Disabilities, 10 (5) **(J)**	Pre- and post- training questionnaires using the Healthcare Skills Questionnaire and a self-report confidence measure (n=34) Post-course survey with free text responses to open questions	**Aim:** To present preliminary findings of a simulation training course to support healthcare professionals to work with people with intellectual disability. **Characteristics:** A simulation training course was co-produced and co-delivered with clinicians and educationalists from South London, a mental health simulation training centre, a national specialist service for intellectual disabilities and a company of actors with intellectual disabilities. Twelve health and social care professionals, participated in the one-day course each taking part in one of six scenarios throughout the day after introductory teaching on intellectual disabilities, health inequalities, and reasonable adjustments.

Author, date and title	Methodology and sample size	Summary of aim, characteristics of training programme and key findings
		Relevant findings: Healthcare skills and confidence showed statistical improvements from pre- to post-course. Qualitative analyses demonstrated that participants perceived improvements to: attitudes, communication skills, reasonable adjustments, interprofessional and multi-disciplinary working, knowledge of key issues in working with people with intellectual disabilities. Findings imply that simulation training to address health inequalities in intellectual disabilities is a valuable resource that merits further development.
Buchanan, D. (2011) Caring for inpatients with learning disabilities. Nursing Times; 107 (32/33) **(J)**	Pre-training questionnaire and post-training discussion (training participant numbers=78, numbers of questionnaire and discussion participants not stated)	**Aim:** To describe the implementation and evaluation of an education project, led by community learning disability nurses, to improve the care of patients with learning disabilities in hospital. **Characteristics:** Two community learning disability nurses worked with a local service provider and a service user with a learning disability to compile and deliver a two-hour training session to a multi-professional group. At this pilot session, people learnt about learning disabilities, had opportunities for discussion and heard stories from people with learning disabilities about their hospital experiences. Following feedback, the session was reduced to 30 minutes so that it could be delivered on wards and promote attendance. An information pack for the wards was developed to support the session. **Relevant findings:** The pre-training questionnaire and post-training discussion identified changes in knowledge, especially around confusion between mental health, dyslexia and learning disabilities. Most staff found the training useful and relevant; only one said their knowledge had not improved as a result of it. Staff appreciated having contact details for the local community learning disabilities team and felt less anxious about working with people with learning disabilities. A number of changes in practice have happened since the training sessions including recruitment of eight link nurses for the wards, an increase in referrals from the hospital to the community team, community nurses have been given access to the care records of inpatients with a learning disability, and a new nursing role has been created. It is not clear whether these are attributable to the training.

Author, date and title	Methodology and sample size	Summary of aim, characteristics of training programme and key findings
		Anecdotal evidence from service users and carers shows the awareness sessions have improved patient experiences. On admission, more staff have been asking service users for their hospital passport.
Certitude (2019), Treat Me Right! Learning disability and autism awareness training with advice and information services, Certitude: London **(R)**	Feedback survey (n unclear, appears to be 59) and reflections of trainers	**Aim:** To report on a project that provided training to the staff and volunteers of Citizen's Advice Bureaux (CAB), Carers Centres, Patient Advice and Liaison Services (PALS) and BAME Information & Advice services to improve knowledge supporting the health needs of people with learning disabilities and/or autism. **Characteristics:** All training sessions were co-delivered by Treat Me Right! trainers, at least one of which has lived experience of autism and/or learning disabilities. The trainers were paid and received training and support around their presentation skills. Training sessions were delivered to 60 organisations and teams and to 802 people (36 from voluntary action groups, 15 from Healthwatch, 72 from BAME community groups, 27 from Citizens Advice, 153 from carer's centres and groups, 178 from PALS teams and 321 general community advice). **Relevant findings:** The feedback survey found that most people felt more confident supporting those with learning disabilities and/or autism in their role and more confident that their organisation provides a good service for those with learning disabilities and/or autism. Examples were given of how the training impacted the service they had given, for example around communication and awareness of the environment. The sharing of lived experiences was key to the success of the training. People were able to see examples of what was being talked about which reinforced the lessons and were able to hear real life stories about what had worked and what had presented challenges. The project provided paid employment and development opportunities for people with lived experience.

Author, date and title	Methodology and sample size	Summary of aim, characteristics of training programme and key findings
Dagnan, D., Masson, J., Thwaites, R., James, A. and Hatton, C. (2018), Training therapists to work with people with intellectual disability in Improving Access to Psychological Therapies (IAPT) services, Journal of Applied Research in Intellectual Disabilities, 31 **(J)**	Pre- and post- training questionnaire and 3-month follow-up (n=68) Interviews with participants about the impact of the training on practice (n=12)	**Aim:** To present an evaluation of a training curriculum designed to prepare High Intensity Therapists and Psychological Wellbeing Practitioners to work with people with intellectual disabilities. **Characteristics:** Modularised programme of eight 75-minute training sessions for therapists working in an English Improving Access to Psychological Therapies (IAPT) service. Delivered as one-day (four module) or two-day (eight module) programme. **Relevant findings:** There was a significant positive change in confidence, general therapeutic self-efficacy and attitudes to people with intellectual disabilities' use of mainstream mental health services immediately post-training which was maintained at three-month follow-up. Qualitative data showed that all participants interviewed could identify changes to their practice that they attributed to the training sessions.
Hatton, V. (2008) Staff awareness training: improving knowledge and confidence of autism spectrum disorders and intellectual disabilities in a locked rehabilitation unit, Advances in Autism, 4(3) **(J)**	Pre- and post- survey (n unclear, appears to be between 5 and 25 for different elements) Follow up interviews one to four months later (n=6)	**Aim:** To evaluate the effectiveness of autism spectrum disorder and intellectual disability training in a locked rehabilitation unit. **Characteristics:** Face to face training was delivered to staff of a 25-bedded locked rehabilitation unit for adult males who are experiencing an enduring mental health problem or personality disorder. The training was developed in direct response to staff dissatisfaction with the online training on learning disabilities and autism that they were receiving. A one-hour session was delivered on autism spectrum disorders and one-hour session on intellectual disability. Both sessions were attended by 25 staff including housekeeping, catering, social work, nursing, occupational therapy, education, healthcare workers, nutritional scientists and maintenance staff.

Author, date and title	Methodology and sample size	Summary of aim, characteristics of training programme and key findings
		Relevant findings: Statistical analyses revealed the training to significantly increase perceived knowledge and confidence of both autism spectrum disorders and intellectual disability in attendees. A brief in-house training package, just one hour long, can have a positive effect. Follow-up interviews also revealed some evidence of sustained learning and practice changes. Respondents reported that they have put their learning into practice by considering their communication styles, adapting working practices (i.e. developing picture timetables) and further consolidating their learning. The utility of training staff members in groups comprising various disciplines was highlighted; not only did this facilitate healthy discussion from varying perspectives, it created an opportunity for team building whereby attendees were able to get to know various members of the team.
Heneage, C. Morris, D. and Dhanjal, K. (2010), "Nothing About Us Without Us": Combining Professional Knowledge with Service User Experience in Training About Mental Health and Learning Disabilities, Mental Health and Learning Disabilities Research and Practice, 7 (2) **(J)**	Pre- and post- training questionnaires (n=24 matched pre- and post-questionnaires)	**Aim:** To report on a training session delivered to 'Improving Access to Psychological Therapies' practitioners by a service user with learning disabilities who has accessed mental health services. **Characteristics:** Training was provided to workers who provide time-limited psychological intervention, based on Cognitive Behaviour Therapy (CBT). Training was delivered by a trainer and a service user with learning disabilities. The trainer presented factual information and research findings, and the service user spoke about her own experience and that of other people with learning disabilities who are known to her. In planning the training, information was solicited from one of the course staff about the needs of the practitioners. **Relevant findings:** The rating scales indicated an increase in feelings of knowledge and confidence in relation to people with learning disabilities after the teaching session. Participants attributed the increase in their knowledge principally to the opportunity to have contact with someone with experience of learning disability and mental health services. The principal reason given for increase in confidence was gaining greater knowledge about how to do their job.

Author, date and title	Methodology and sample size	Summary of aim, characteristics of training programme and key findings
Johnson, N.L., Lashley, J., Stonek, A.V. and Bonjour, A. (2012), Children with developmental disabilities at a pediatric hospital: staff education to prevent and manage challenging behaviors, Journal of Pediatric Nursing, 27 (6) **(J)**	Post-session survey of participants of online education session (n=604) Pre- and post- survey of instructor led session (n=42)	**Aim:** To describe a pilot staff education programme on preventing and managing challenging behaviours of children with developmental disabilities at a paediatric hospital. **Characteristics:** A two-hour-long education programme (one hour on-line and one hour instructor led). Content focused on family-centred care and communication skills, including verbal judo modified for use in the health care setting. The class was co-taught by security personnel, child life specialists, and nurses. 604 staff participated in both parts of the education. **Relevant findings:** After the on-line education, only 40.1% of staff indicated strong agreement that they know how to prevent challenging behaviours, and only 42.1% knew what to do during the behaviours. The on-line education alone does not appear to be enough to develop confidence for staff to identify and respond to challenging behaviours. Participants in the instructor led sessions reported improved knowledge and decreased fear about caring for children with developmental disabilities. Therefore, the instructor-led session was critical for allowing staff the opportunity to develop the skills to prevent and manage challenging behaviours.
Marshall-Tate, K. (2016), Enhancing clinical practice: reducing health inequalities - reflections on a clinical education and training partnership, Advances in Mental Health and Intellectual Disabilities, 10 (6) **(J)**	Pre- and post-questionnaires and feedbacks forms have been completed for learning events and a 3 month follow up survey for conferences with skills-based workshops. These have not yet been formally analysed.	**Aim:** To outline a two-year project designed to reduce health inequalities and improve health outcomes of people with intellectual disabilities using health services in South London. **Characteristics:** A two-year project in South London to develop and deliver a strategy for intellectual disabilities education, which involved training and facilitating skills and academic-based programmes to a network of clinicians and educators from both mental health and physical health services across primary, community, acute, secondary and tertiary care.

Author, date and title	Methodology and sample size	Summary of aim, characteristics of training programme and key findings
		A committee was established to prepare the sessions and included experts by experience and clinicians. They developed a suite of education and training materials including a brief pocket guide for good practice and using a variety of teaching methods including face to face teaching sessions, seminars, workshops and eLearning. **Relevant findings:** A formal evaluation of the project is underway but not reported in this article. Early results seem to indicate success in developing the right knowledge, skills and attitudes to provide effective care and treatment for people with an intellectual disability. Data appears to indicate that health staff who attended education and training events learned new knowledge and skills that they could implement in their practice, increasing confidence and capability. The eLearning platform was considered to be a key development as it has the potential to reach large numbers of staff and it enables learners to complete modules at their own pace and from a convenient location. The inter professional collaboration has brought a depth of dialogue and learning that is difficult to achieve with profession-specific initiatives.
Mengoni, S.E. and Redman, S. (2019), Evaluating Health Visitors' Existing Knowledge of Down Syndrome and the Effect of a Training Workshop, Journal of Policy and Practice in Intellectual Disabilities 16 (1) **(J)**	Pre- and post- training questionnaires(n=26)	**Aim:** To assess health visitors' existing knowledge of Down syndrome and evaluate a pilot Down syndrome training session for health visitors. **Characteristics:** The training was led by an experienced trainer using PowerPoint slides, handouts, and an interactive format. The training presentation lasted approximately 45–60 min. Twenty-six health visitors from two NHS Trusts in England participated in one of five group training workshops.

Author, date and title	Methodology and sample size	Summary of aim, characteristics of training programme and key findings
		Relevant findings: Knowledge about Down syndrome was low prior to the training and increased significantly following the training session. Health visitors were asked to indicate their preferred formats of future training or education about Down syndrome. The most popular options were half-day and full-day training courses, conferences or talks and e-learning.
Piper, R. and Alazzi, D. (2017), Evaluation of Mencap's Learning Disability Awareness Training for Healthcare Professionals, Mencap: London **(R)**	Evaluation forms completed pre-, during and post- training (n=302) Online survey up to 6 months after the training (n=5) Semi-structured interviews with project team and trainers (n not given)	**Aim:** To answer the pilot project's key questions: Was learning disability awareness training for healthcare professionals welcomed within acute and primary care settings? Was such a training intervention effective in achieving its primary aims? **Characteristics:** A pilot project run by Mencap to design and deliver learning disability training to healthcare professionals. The training was delivered through two-three half day face to face training modules, by a professional trainer. A co-trainer with a learning disability was present in 6 of the 28 courses, reaching 78 of the total number of people trained. In total, 28 training sessions were delivered to 463 healthcare professionals in 6 healthcare settings. Around two thirds of attendees were nurses. **Relevant findings:** Aftre the training, 98% of attendees agreed that they were motivated to change their practice and 98% wanted to learn more about learning disability. Over two thirds of participants showed an increase in their knowledge as a result of the training. Of the five follow up attendees surveyed, four said that they had already handled a situation differently, as a result of the training. There was positive feedback about having a person with a learning disability delivering the training. There is evidence that it enriched participants' experiences to hear from people who had been through the challenges presented during the training. However, there were no significant differences in terms of changes of knowledge between those participants who experienced a co-trainer with a learning disability and those who did not.

Author, date and title	Methodology and sample size	Summary of aim, characteristics of training programme and key findings
		Both 'open training' and 'in-house' training seem to work. Open training – with a mix of professions, grades and specialisms in one session – was effective in shifting attitudes and assumptions. In-house training – either on a single setting (e.g. GP surgery) or for a specific specialism (e.g. dentistry), was also effective, but required greater adaptation of content. There was consistent feedback that the course could be improved by being longer, alongside an acknowledgement that this could make it harder for some to attend. The three most commonly cited barriers to implementing this good practice were: time pressures, the attitudes, knowledge and habits of colleagues, and power dynamics. Most attendees were nurses – there is a challenge getting doctors to attend.
Read, S., and Rushton, A. (2013), Cultivating understanding of health issues for adults with intellectual disability, Nurse Education Today, 33 **(J)**	Pre- and post-workshop questionnaire (n=129) Qualitative feedback sheet post workshop (n not given)	**Aim:** To describe the self-evaluation process and outcome of a series of workshops for generic healthcare professionals designed to cultivate understanding of the health needs of adults with ID. **Characteristics:** A health Toolkit was collaboratively developed by a group of people in North Staffordshire. Workshops were developed to maximize the potential of the Toolkit. Eight workshops were delivered to qualified and unqualified nurses and other allied health professionals in North Staffordshire. The full day workshops were interactive, and facilitated by health care clinicians, three people with an ID, advocates and academics. The aim was to improve the skills, knowledge, competence and confidence of nurses working within the local acute NHS Trust. **Relevant findings:** There was a significant improvement in participants' scores after they had attended the workshop. Participants had learned new knowledge about people with ID; had become more aware of services available to them; and understood more clearly how to care for such patients. Professionals welcomed the availability of a Toolkit that can provide resources to support the patient with an ID in the hospital setting. Workshops can maximise the potential of resources such as the Toolkit. A collaborative approach (with people with an ID and carers at its heart) produced a resource that is more likely to be 'fit for purpose' and useful in practice.

Author, date and title	Methodology and sample size	Summary of aim, characteristics of training programme and key findings
Tollow, P. (2017) What works to change healthcare professional's behaviour towards people with a learning disability? A rapid review, Mencap: London. Unpublished. **(UR)**	Literature review – 34 articles including 10 learning disability specific articles	**Aim:** To answer the question: 'what works to change healthcare professional's behaviour towards people with a learning disability?'. Whilst the review primarily explores literature specifically relating to learning disability, a lack of relevant research in this area means it also draws upon wider discussions of healthcare professional behaviour change and considers how these findings may apply to learning disability. **Relevant findings:** This review included 34 articles (including 10 learning disability specific articles). Relevant themes were identified in the literature were: *Active ingredients of education* - Evidence suggests that interactive educational interventions, such as simulation learning, are more likely to be effective in changing healthcare professional's behaviour. Interventions featuring contact with people with a learning disability are known to be particularly effective, with suggested benefits for all involved. *Addressing barriers to change* - Interventions are known to be more effective when they identify and address specific barriers to behaviour change. These may include personal and environmental barriers and are believed to differ between professional groups. *Organisational change* - Organisational level change is known to have a knock-on effect on individual behaviour through, for example, clinical guidelines and behavioural norms. Specific individuals may be identified as enablers of change within an organisation and, in the case of behaviour towards people with a learning disability, learning disability nurses are believed to be particularly influential.

Author, date and title	Methodology and sample size	Summary of aim, characteristics of training programme and key findings
2. Learning disability training or education for students (8 articles)		
Harwood, I. and Hassiotis, A. (2014), A re-design of undergraduate medical training in intellectual disability: building psychological capital and imparting knowledge to redress health inequalities, Advances in Mental Health and Intellectual Disabilities, 8 (6) **(J)**	Online survey (n=69)	**Aim:** To describe the re-design and evaluation of undergraduate medical training in intellectual disability. **Characteristics:** University College London's (UCL) undergraduate medicine curriculum was re-designed. Materials were developed to broaden the students' understanding of the stigma and health implication of intellectual disability and the affect it has on the care received by these patients. It was delivered in lecture and e-learning formats. **Relevant findings:** Findings from the online survey that accompanies the e-learning materials suggests that students have overwhelmingly adopted a positive outlook towards patients with intellectual disability and consider training necessary for all doctors. The filmed scenarios with people with intellectual disability appealed to students. It appears that the online module has achieved its objectives of increasing knowledge, skills and reducing stigmatising attitudes in the first cohort of undergraduate students introduced to the revised curriculum.
Metcalf, E. and Colgate, R. (2019) Communication skills training for healthcare students working with people with intellectual disabilities, BJPsych Advances, 25 **(J)**	Post- questionnaire (n=262)	**Aim:** To report on a communication skills workshop for healthcare students working with people with intellectual disabilities. **Characteristics:** A partnership between Cardiff University School of Medicine, Cardiff Metropolitan University, Cardiff School of Sport & Health Sciences and Hijinx (a Welsh theatre company that includes professionally trained actors with intellectual disabilities), developed an interprofessional communication skills workshop.

Author, date and title	Methodology and sample size	Summary of aim, characteristics of training programme and key findings
		Mixed groups of fourth-year medical and third year SALT students undertake a 90 min communication skills workshop, during which they have the opportunity to role-play with actors with developmental intellectual disabilities and receive feedback from tutors, actors and peers. **Relevant findings:** Students found this teaching rewarding and the interprofessional nature of the course enabled them to learn more about the roles of their colleagues in other disciplines. Students find the teaching enjoyable and valuable. The collaboration with Hijinx provides genuine and sustained employment for actors with intellectual disabilities, improving their financial independence, self-esteem and well-being.
O'Boyle-Duggan, M. (2010) Developing a Simulation Model to Explore Challenging Behaviour. Learning Disability Practice, 13 (10) **(J)**	Pre- and post-questionnaire about the effects of the experience on reactions, skills, competence and confidence (n=11)	**Aim:** To explore the use of live simulation as a strategy for teaching nursing and other students about person-centred health care for service users who have learning disabilities and present with challenging behaviours **Characteristics:** Simulation was conducted in Birmingham City University (BCU) in a specially designed skills suite which replicated a small bedsit, with role players portraying individuals with learning disabilities. Students were given four challenging scenarios, with care plans and information about the service users beforehand. Pairs of students spent 10 minutes engaging with the service user according to the person-centred care plan or intervention strategy. At the end of each 10 minutes, they were asked to reflect on what they did well and what they could have done better. Constructive feedback was given by the facilitator, the other students and the role player. **Relevant findings:** The numbers of students who felt more confident/competent after the simulation increased. Although the findings are not robust in terms of statistical correlation and analysis, they do indicate that students' responses and competencies improved, as confirmed by their feedback.

Author, date and title	Methodology and sample size	Summary of aim, characteristics of training programme and key findings
		Students particularly appreciated being able to respond to and understand challenging behaviour without the pressures of being 'in real life' on placement and being able to discuss performance with the facilitator and role player constructively.
O'Boyle-Duggan, M., Grech, J.D. and Brandt, R. (2012) Effectiveness of Live Simulation of Patients With Intellectual Disabilities, The Journal of nursing education 51(6) **(J)**	Post questionnaire (n=173), student personal reflections and focus group	**Aim:** To investigate the use of live simulation using simulated patients portraying people with intellectual disabilities. **Characteristics:** Students worked in groups of three; each student participated in at least one interaction with a simulated patient (with role players simulating a patient with learning disabilities) while the facilitator and other students in the group provided peer reflections. **Relevant findings:** The findings were positive; students have felt confident and satisfied with the simulation activity. Focus group analysis of student reflections and personal examples given show that the skills explored and practiced during simulation had a positive influence on patient care while on clinical placements.
Saunder, L. and Berridge, E. J. (2015) Immersive simulated reality scenarios for enhancing students' experience of people with learning disabilities across all fields of nurse education. Nurse Education in Practice, 15(6) **(J)**	Semi-structured interviews with students post training (n=19), and staff before and one week after training (n=9)	**Aim:** To discuss the implementation of Shareville (a virtual environment) in the undergraduate and postgraduate pre-registration nursing Curricula. **Characteristics:** Shareville is a virtual environment developed at Birmingham City University, in which student nurses learn from realistic, problem-based scenarios featuring people with learning disabilities. To optimise participation in Shareville, students used Shareville in classroom sessions facilitated by teaching staff, blending both independent and group work.

Author, date and title	Methodology and sample size	Summary of aim, characteristics of training programme and key findings
		Relevant findings: Students reported that problem-based scenarios were sufficiently real and immersive. Scenarios presented previously unanticipated considerations, offering new insights, and giving students the opportunity to practise decision-making in challenging scenarios before encountering them in practice. The nine lecturers interviewed generally felt positively towards the resource and identified strengths in terms of blended learning and collaborative teaching.
Spackman, R., Qureshi, A. and Rai, D. (2016) A review of recommendations for medical undergraduate intellectual disability psychiatry teaching from UK reports, Advances in Mental Health And Intellectual Disabilities, 10 (2) **(J)**	National reports from Mencap, Department of Health, Disability rights commission, NHS Executive, the GMC and RCPsych were searched for relevant recommendations to undergraduate medical education in ID psychiatry	**Aim:** To amalgamate recommendations from contemporary national reports on healthcare provision and needs of people with intellectual disabilities and combine them with recommendations for undergraduate curricula of medical students from the GMC and Royal College of Psychiatrists. **Relevant findings:** The following recommendations were identified: 1. Learning involves people with intellectual disabilities 2. Psychiatrists are involved in the teaching 3. Learning involves carers or family of people with ID 4. The importance of listening to carers 5. Students are helped to understand and accept the following responsibilities involved in protecting and promoting health: a) Legal b) Moral c) Ethical 6. Learning challenges assumptions made about people with ID and the unknowing discrimination against them 7. The existence of discrimination involving value judgements by healthcare staff about the worth of people with ID is discussed 8. That institutional discrimination is a problem 9. Students are expected to use a range of communication methods 10. Including cases where patients have special difficulties in sharing how they feel and think 11. The concept of diagnostic overshadowing is covered

Author, date and title	Methodology and sample size	Summary of aim, characteristics of training programme and key findings
		12. Students are taught how to make reasonable adjustments and how to put their legal responsibilities under the Equality Act, 2010 and Mental Capacity Act, 2005 into practice and what a reasonable adjustment is 13. Mental health needs and problems of people with intellectual disabilities are included
Thomas, B., Courtenay,K. Hassiotis, A. Strydom, A. Rantell, K. (2014), Standardised patients with intellectual disabilities in training tomorrow's doctors, Psychiatric Bulletin, 38 (3) **(J)**	Pre- and post-training questionnaire (n=47)	**Aim:** To develop a programme to help undergraduate medical students and postgraduate trainees to improve their skills in communicating with people with intellectual disabilities through teaching sessions that had input from simulated patients with intellectual disabilities. **Characteristics:** Four sessions of training for 47 undergraduate 4th-year medical students were conducted. The training involved a multi-professional taught session followed by a clinical scenario role-play with simulated patients who were people with intellectual disabilities. The training consisted of a morning session by a speech and language therapist, which involved didactic teaching, group work, watching a communication DVD, and basic Makaton training. After the taught session, students were divided into groups and rotated through four stations. All students had at least one opportunity to interact with a patient with intellectual disabilities. Following each station, the actors and facilitators gave the students structured feedback. **Relevant findings:** There were improvements in the students' perceived skill, comfort and the type of clinical approach across all three scenarios. The improvement along the dimensions was more significant for scenarios involving people with severe intellectual disabilities compared with those involving people with mild intellectual disabilities. By involving people with intellectual disabilities in training medical students there has been a significant improvement in students' skills which will raise the quality of care provided by them in the future.

Author, date and title	Methodology and sample size	Summary of aim, characteristics of training programme and key findings
Watkins, L.V. and Colgate, R. (2016) Improving healthcare for people with intellectual disabilities: the development of an evidence-based teaching programme, Advances in Mental Health And Intellectual Disabilities, 10 (6) **(J)**	Pre- and post-questionnaire (n=23)	**Aim:** To develop and implement an educational programme to improve medical students' attitudes towards intellectual disabilities. **Characteristics:** An educational programme was developed consisting of two phases. An initial introductory tutorial of one-hour duration was delivered by Cardiff People First, a self-advocacy agency run for and by people with an intellectual disability. The second phase of the programme provided students with the opportunity to interact with a simulated patient played by an actor with an intellectual disability. **Relevant findings:** Student feedback revealed significant positive changes in affect and understanding, and an improvement in knowledge and skill levels when interacting with people with an intellectual disability following the educational intervention. The results from the student attitude questionnaire are consistent with previous studies that demonstrate interaction with people with intellectual disabilities can positively change students' attitudes.

Author, date and title	Methodology and sample size	Summary of aim, characteristics of training programme and key findings
3. Identifying training needs (2 articles)		
Hemm, C., Dagnan, D. and Meyer, T.D. (2015) Identifying Training Needs for Mainstream Healthcare Professionals, to Prepare Them for Working with Individuals with Intellectual Disabilities: A Systematic Review, Journal of Applied Research in Intellectual Disabilities, 28 **(J)**	Systematic review	**Aim:** To explore the training needs identified by mainstream healthcare staff to support them in working with clients with intellectual disabilities. **Relevant findings:** 13 articles identified. Three main themes of perceived training need were identified across a range of professional groups: general communication, knowledge/information and profession-specific needs. Generally, there was a great deal of overlap in needs identified by professional groups, indicating that a core training package is feasible. The 'profession-specific' subthemes may require greater depth and specificity around the job role of different professional groups, as an 'add-on' to the main package. **Discussion:** It is possible that some of the 'knowledge'-based needs could be provided within a handbook or through generic 'multi-profession' training sessions. It is likely that more time would be needed for training sessions aimed at developing profession-specific skills. Training sessions may be more effective if delivered in part by specialist intellectual disability practitioners (to allow the opportunity for professionals to liaise/consult), as well as individuals with intellectual disabilities (to increase the ability for attendees to contextualise their learning).
Thalitaya, M.D. and Reynolds, C. (2017), Survey on the knowledge and expectations of psychiatry of intellectual disability (ID) in Junior Doctors joining a NHS Mental Health Trust, Psychiatria Danubina, 29 (3) **(J)**	Questionnaire distributed to new trainee Doctors after 3 different inductions throughout the year (n=11)	**Aim:** To survey the knowledge level and expectations of junior doctors on Psychiatry placements in Bedfordshire in relation to ID and local logistical arrangements of services and on call duties. **Relevant findings:** The most popular delivery of information was found to be oral presentation and hand out at induction, followed by an electronic document. 8 trainees were interested in attending clinical sessions in ID and most felt it would be feasible in their posts to get to these.

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Contact Information

Anna Marriott, Programme Lead - Research and Evaluation
Call: 01225 789135
Email: Anna.Marriott@ndti.org.uk

National Development Team for Inclusion
First Floor
30-32 Westgate Buildings
Bath BA1 1EF

www.ndti.org.uk

This work has been funded by the South Regional Health Education England Intellectual Disabilities programme.

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