Educating Health Professionals about Disability: A Review of Interventions

Tom Shakespeare¹ & Ira Kleine²

¹University of East Anglia Medical School, UK
²UCL Medical School, UK

Abstract

Health professionals need to understand the human rights and health needs of disabled people. This review of evidence on interventions demonstrates that a range of often innovative approaches have been trialled. Lectures by faculty are less effective in changing attitudes than contact with disabled people themselves. Existing examples of good practice need to be scaled up, and better and more long-term evaluations of impact are required.

Keywords: disability, human rights, attitudes, students

Background

Disability is a social issue, not just a medical one (Shakespeare 2006). But people with disabilities have health needs arising from their primary impairment as well as general health needs (Shakespeare 2012) and sometimes a narrower margin of health (World Health Organization and World Bank 2011). People with disabilities often do feel healthy and can be successful in managing their own health needs if they receive the appropriate support and information (Watson 2002, Nazli 2012). Yet evidence shows that these health needs are not adequately met, due to financial access and attitudinal barriers. Analysis of the World Health Survey showed that people with disabilities were twice as likely to find health care provider skills and equipment inadequate to meet their needs; three times as likely to be denied care; and four times as likely to be treated badly by health care providers (World Health Organization and World Bank 2011). This evidence is reinforced by other...
studies (Aulagnier et al. 2005, Dorji & Solomon 2009, Cervasio 2010, Pace et al. 2011). Analysis of the 2006 US Medical Expenditure Panel Survey revealed that people with disabilities were more likely than nondisabled people to think that their doctor had not listened to them, treated them with respect, taken enough time, involved them in treatment decisions or explained treatments properly (Smith 2009). In the UK, the Formal Investigation into Inequalities in Health found that people with mental illness and people with intellectual impairments received a worse service from health professionals, which may have contributed to the poorer outcomes they experienced (Disability Rights Commission 2006).

Given evidence of discomfort, negative attitudes and lack of knowledge on the part of the health professionals, there is a need to ensure better training and education about disability (Larson-McNeal et al. 2002, Eddey & Robey 2005, Chmar et al. 2007, Shakespeare et al. 2009, Baker 2011, Iezzoni & Long-Bellil 2012, Wilkinson et al. 2012, ). Ensuring this is a legal obligation for countries that have ratified the Convention on the Rights of Persons with Disabilities (UN 2006), Article 25 (d) states that States Parties shall:

Require health professionals to provide care of the same quality to persons with disabilities as to others, including on the basis of free and informed consent by, inter alia, raising awareness of the human rights, dignity, autonomy and needs of persons with disabilities through training and the promulgation of ethical standards for public and private health care.

Bearing this legal standard in mind, the following competencies could be proposed, drawing on Kirschner & Curry (2009):

1. Framing disability within the context of human diversity across the lifespan and within social and cultural environments.
2. Skills training for assessment of disability and functional consequences of health conditions, considering implications for treatment and management.
3. Training in general principles concerning etiquette for interactions with persons with disabilities.
4. Learning about roles of other health care professionals forming integrated teams to care for persons with disabilities.
5. Understanding the legal framework of national anti-discrimination legislation, the Convention on the Rights of Persons with Disabilities, relevant ethical standards, and the principles of reasonable accommodation and universal design.
6. Competency in patient-centred care approaches, including patients’ perception of quality of life.

Despite efforts to improve professional education on disability, to date there has been no comprehensive overview. The purpose of this paper is to review what has been trialled and, where known, the outcomes of these trials.

Methodology

Electronic database searches were conducted with MedLine, which produced 1666 possible publications. Titles were scanned and abstracts read, to ascertain relevance. Inclusion criteria: relevance to any aspect of: attitudes of health care workers (students or professionals) towards people with any form of disability; teaching methods used to educate students or professionals about disability; disability curriculum content; or integration of disability teaching into existing curricula. Exclusion criteria: articles that dealt solely with clinical issues and papers solely concerned with improving teaching of rehabilitation sciences.

Results

The search produced 192 relevant articles; 106 of these could be accessed online and downloaded as full texts. 48 of these papers concerned a specific, relevant teaching intervention or evaluation, of which five related to in-service training and the remainder to pre-qualification training.

Geographical spread

The search was limited to studies in English or French. 28 papers described interventions in the USA, 12 in the UK, three in Australia and one each in France, Germany, Hong Kong, New Zealand, South Africa, Sweden, and Switzerland.

Different approaches

A variety of approaches to improving attitudes, knowledge and practice have been trialled, often in combination. Starting with the distinction that Symons et al. (2009) make between school-based education, community-based experiences, and clinical experiences, we created a classification based on an inductive analysis (see Figure 1). Typical examples are discussed in the following sections, and the results table (see Table 1) summarizes all the included studies.
Conventional lecture or seminar delivered by faculty staff (33 papers)

Teaching on disability is very common. While any training is good, having a few hours teaching about disability is likely to be insufficient to change attitudes, instill required knowledge or develop skills (Richard *et al.* 2005, Delucia & Davis 2009). Rather than simply relying on didactic instruction, experiential learning with reflective components is recommended for training dental students about care of people with intellectual disabilities (Delucia & Davis 2009). Innovative approaches using computer-based training were reportedly effective (Ruiz *et al.* 2006, Kleinert *et al.* 2007) and can be easier to deliver; for example an interactive module featuring a deaf-blind virtual patient (Sanders *et al.* 2008).

Teaching delivered by disabled people or their family members (15 papers)

Hearing from those with direct experience of disability is likely to make more impact and be more memorable. For example, Monash University medical students engaged with tutors with intellectual disabilities on a three-hour communication workshop, which increased their understanding and comfort levels with this traditionally underserved community (Tracy & Iacono 2008). At Leeds University, a series of seminars for medical students on ‘valuing diversity’ were taught, inter alia, by deaf people, disabled people from the local Centre for Integrated Living, people with mental health conditions and people with intellectual disabilities (Thistlethwaite & Ewart 2003).

Encounters with patients, advocates or standardized patients (23 papers)

Research with dental students shows that prior experience with people with intellectual disabilities is associated with comfort levels in treating this population (Delucia & Davis 2009). Supervised contact has been found to have more impact on knowledge and attitudes than lectures alone, for example in improving confidence in working with people with intellectual disabilities (Adler *et al.* 2005). Home visits are typical (Sharma *et al.* 2006, Mullen *et al.* 2010), and various approaches have been successfully trialled, including inter-professional learning (Street *et al.* 2007, Anderson *et al.* 2010). In a more elaborate US project, family medicine clerkship students conducted a series of interviews with standardized patient educators with disabilities that were videoed and discussed in feedback sessions (Duggan *et al.* 2009). Innovative senior mentoring programmes in South Carolina involved students being paired with an older person to do assignments ranging from clinical assessments to home safety assessments (Corwin *et al.* 2006).

One-off events are another option. In North Staffordshire, the production of a Toolkit to improve health services for people with intellectual disability (ID) (available at www.keele.ac.uk/depts/hs/toolkitpeople/) was followed by a workshop, partly led by people with ID themselves (Read & Rushton 2012). A US college of medicine organized a panel of senior citizens to interact with medical students (Tandon *et al.* 2011). Before offering vision screening to Special Olympic athletes with ID, 71.5% of volunteer optometry students and professionals lacked confidence; after a day of training and at least two days’ contact, nearly 80% were confident or very confident at examining this population (Adler *et al.* 2005).

Virtual engagement has also been attempted. St Bartholomew School of Nursing and Midwifery (London, UK) experimented with an online discussion forum which involved mental health service users educating mental health nursing students in the context of Enquiry-Based Learning (Simpson *et al.* 2008). Service users were supported...
<table>
<thead>
<tr>
<th>Citation</th>
<th>Setting</th>
<th>Sample</th>
<th>Topic</th>
<th>Intervention</th>
<th>Lectures</th>
<th>PWD teach</th>
<th>Encounters</th>
<th>Placement</th>
<th>Simulation</th>
<th>Clinical</th>
<th>Outcomes</th>
</tr>
</thead>
<tbody>
<tr>
<td>Adler et al. 2005</td>
<td>Volunteers in Special Olympics training programme</td>
<td>Optometrists and student optometrists (n=90) versus control (n=83)</td>
<td>Vision screening for people with ID</td>
<td>One day workshop and supervised patient contact</td>
<td>x</td>
<td>x</td>
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<td></td>
<td>Significant improvement in knowledge in intervention group. Greater improvement in confidence to treat among those who had undertaken a day of lectures and at least two days' patient contact than in control group who had only had half a day of lectures as part of continuing education.</td>
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<tr>
<td>Amosun et al. 2005</td>
<td>University of Cape Town Medical School, SA</td>
<td>Volunteer medical students (n=2)</td>
<td>Special study module on Images of disability</td>
<td>Five consecutive days in wheelchair</td>
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<td>x</td>
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<td>Students reported being more sensitised to needs of people with mobility impairments, and significant positive change in attitudes.</td>
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<tr>
<td>Anderson et al. 2010</td>
<td>University of Leicester, Leicester DeMontfort University</td>
<td>Students of medicine (n=100), social work (n=50)</td>
<td>Interprofessional education about disability in community</td>
<td>Placement in community hospitals, input from disability advocates.</td>
<td>x</td>
<td>x</td>
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<td></td>
<td>Evaluation from students strongly positive (90.9% SW, 86.7% Med) on attitudes to disability. Enjoyment of programme (73.2% Med, 74.2% SW). Interprofessional aspect caused some tensions. Service users valued process and enjoyed being educators.</td>
</tr>
<tr>
<td>Anderson et al. 2011</td>
<td>University of Leicester, Leicester DeMontfort University</td>
<td>Students of medicine, midwifery, nursing, pharmacy, social skills</td>
<td>Communication skills</td>
<td>One day workshop</td>
<td>x</td>
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<td></td>
<td>Focus group and questionnaire evaluation found significant gains in student knowledge,</td>
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<tr>
<td>Study</td>
<td>Institution</td>
<td>Participants</td>
<td>Methods</td>
<td>Findings</td>
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<tr>
<td>Berg et al. 2008</td>
<td>Pace University, NY</td>
<td>Audiology students (n=19) and controls (n=16)</td>
<td>Lived experience of hearing loss</td>
<td>Use of written narratives (novels, articles, films) x</td>
<td>Very positive evaluation, particularly of meeting service users and hearing their stories.</td>
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<tr>
<td>Block et al. 2005</td>
<td>Stony Brook, NY, USA.</td>
<td>Occupational therapy Masters students</td>
<td>Introduction to disability studies</td>
<td>Lectures, seminars, film, visit to CIL x x x</td>
<td>Narratives of life with disability appear effective in increasing affective response among audiology students.</td>
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<tr>
<td>Burbank et al. 2006</td>
<td>New York Tuskegee Uni, Uni of Rhode Island, USA</td>
<td>Nursing students</td>
<td>Caring for older adults</td>
<td>Varied x x x</td>
<td>Ethnographic data suggested students were enabled to take a broader perspective and critically analyze their professional roles. Visit to Centre for Independent Living was challenging, revealing tension between OT and IL philosophies.</td>
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<tr>
<td>Corwin et al. 2006</td>
<td>University of South Carolina, USA</td>
<td>2nd year medical students (n=36)</td>
<td>Geriatrics</td>
<td>Older person as mentor x</td>
<td>Unequivocal support for programme from students and seniors. Students self-reported changed attitudes and greater awareness of older people.</td>
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<tr>
<td>Crotty et al. 2000</td>
<td>Flinders University, Australia</td>
<td>Graduate entry medical students (n=100)</td>
<td>Disability and rehabilitation</td>
<td>4 wk course, incl. visit to patient in hospital and at home &amp; community service x x x x</td>
<td>96% agreed worthwhile experience, 93% agree relevant to needs. Involvement in inpatient rehab most highly valued. 85% valued the simulation exercise. OSCE measured student ability</td>
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<tr>
<td>Study</td>
<td>Institution and Year</td>
<td>Participants</td>
<td>Intervention Description</td>
<td>Results</td>
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<tr>
<td>DeLucia &amp; Davis 2009</td>
<td>University of Buffalo School of Dental Medicine</td>
<td>Dental students (n=67)</td>
<td>Care of patients with ID</td>
<td>2 hr initial lecture plus up to 2 hrs other lectures and discussion</td>
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<tr>
<td>Denton et al. 2009</td>
<td>Uniformed Services University, US</td>
<td>3rd year medical students (n=34)</td>
<td>Geriatrics</td>
<td>Home visit, assessment, presentation of findings</td>
<td>x x</td>
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<td>Duggan et al. 2009</td>
<td>Tufts University, USA</td>
<td>Family medicine clerkship students (n=138)</td>
<td>Caring for patients with disabilities</td>
<td>Video taped interviews with standardized patient educators with disabilities</td>
<td>x</td>
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<td>Fruhauf et al. 2004</td>
<td>Virginia Polytechnic Institute and State University</td>
<td>Undergraduates on ageing course (n=16)</td>
<td>Geriatrics</td>
<td>Service learning project at Adult Day Services programme for people with dementia</td>
<td>x x</td>
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<tr>
<td>Gitlow &amp; Flecky 2005</td>
<td>Husson College, Bangor, USA</td>
<td>Occupational therapy students (n=40)</td>
<td>Disability studies, accessibility, disability arts.</td>
<td>Service learning project, work with artists with disabilities</td>
<td>x x x</td>
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</table>

Less than 4 hrs teaching did not change attitudes or comfort levels. Prior experience with people with ID associated with higher comfort levels.

Knowledge improved similarly in control and intervention arms. General attitude improved (9.8% intervention, 0.5% control), home care training (21.7% intervention, 3.2% control).

Case designed in consultation with people with disabilities, family members, medical educators. Students able to reflect on their communication with a patient with disability and about patient empowerment.

Training enhanced benefits of placement with people with dementia and improved interactions.

90% students were more comfortable working with clients from different cultures. Greater understanding of need
<table>
<thead>
<tr>
<th>Reference</th>
<th>University/Location</th>
<th>Group/Experience</th>
<th>Content/Activity</th>
<th>Method/Module</th>
<th>Result/Change</th>
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</thead>
<tbody>
<tr>
<td>Graham et al. 2009</td>
<td>University of South Carolina, USA</td>
<td>Family medicine</td>
<td>Clinical issues</td>
<td>90 minute teaching session</td>
<td>Significant reduction in proportion feeling awkward or sorry for people with disabilities, and improvements in knowledge. Subsequently designed Objective Structured Clinical Exams with PWDs.</td>
</tr>
<tr>
<td>Jansen &amp; Morse 2004</td>
<td>University of Wisconsin-Eau</td>
<td>Student nurses</td>
<td>Caring for elders</td>
<td>Ageing content integrated</td>
<td>Significant improvement in attitudes for control (separate ageing course) and intervention (ageing integrated across curriculum).</td>
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<tr>
<td>Jones &amp; Donald 2007</td>
<td>University of Newcastle, Australia</td>
<td>4th year students</td>
<td>Paediatrics</td>
<td>8 week placement in rural special school</td>
<td>All agreed placement was a positive experience and gave better understanding of children with special needs. Placement did not increase staff workload and was welcomed by staff.</td>
</tr>
<tr>
<td>Karlowicz &amp; Palmer 2006</td>
<td>Old Dominion University, Virginia, USA</td>
<td>Nursing students</td>
<td>Urinary incontinence</td>
<td>Experiential learning</td>
<td>Positive feedback over 10 years of the activity, regarding raised awareness and changed attitudes.</td>
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<tr>
<td>Kleinert et al. 2007</td>
<td>University of Kentucky</td>
<td>Dentistry students</td>
<td>Care for children with developmental disabilities</td>
<td>Interactive, multimedia virtual patient module</td>
<td>Pre- and post-intervention knowledge levels improved by almost 60% and the interactive CD ROM was regarded as “needed” and “easy to use” by students.</td>
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<tr>
<td>Markström et al. (2009)</td>
<td>Lund University, Sweden</td>
<td>Healthcare profession</td>
<td>Attitudes towards mental illness</td>
<td>5 week clinical placement following</td>
<td>x Attitudes towards mental illness in general improved, perhaps due to interaction</td>
</tr>
<tr>
<td>Study and Year</td>
<td>Institution</td>
<td>Participants</td>
<td>Education Format</td>
<td>Feedback</td>
<td>Conclusion</td>
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<tr>
<td>McClimens &amp; Scott 2007</td>
<td>University of Sheffield</td>
<td>Learning disability nursing students (n=167)</td>
<td>GP consultation with person with ID</td>
<td>x</td>
<td>Feedback that session was enjoyable, students became more aware of power relations in medical encounter.</td>
</tr>
<tr>
<td>McConville &amp; Lane 2006</td>
<td>University of Wolverhampton</td>
<td>Nursing students (n=145)</td>
<td>Self-efficacy with difficult situations including communicating with patient with ID</td>
<td>Video clips</td>
<td>No significant difference between information communicated in lectures and by watching video clips, but combination found to be beneficial.</td>
</tr>
<tr>
<td>Moroz et al. 2010</td>
<td>New York University</td>
<td>Residents in physical &amp; rehab medicine (n=11+10 controls)</td>
<td>Knowledge and attitudes towards people with disability</td>
<td>Day long curriculum involving multiple formats</td>
<td>Significantly increased knowledge and better attitudes over controls. While three months post test found reversion to former levels of knowledge, attitude improvements persisted. Personal stories of PWD were found to be most beneficial.</td>
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<tr>
<td>Mullen et al. 2010</td>
<td>University of Glasgow</td>
<td>1st year medical students (n=227)</td>
<td>Impact of long-term illness</td>
<td>Life History interviews with patients in own homes</td>
<td>Feedback showed improved knowledge and attitudes about impact, context, and dynamics of chronic illness, but limited gains in understanding of research methods.</td>
</tr>
<tr>
<td>Nitschke et al. 2009</td>
<td>Leipzig and Zurich Universities</td>
<td>Undergraduate dental students</td>
<td>Dentistry with older Extramural persons</td>
<td>Clinical activities</td>
<td>Participation in Zurich MobiDent service treating seniors in care homes was strongly valued and led to reduced pity for patients.</td>
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<tr>
<td>Ruiz et al. 2006</td>
<td>University of Miami, USA</td>
<td></td>
<td>Dementia</td>
<td>Computer based training</td>
<td>Improvements in knowledge, self-efficacy and attitudes</td>
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<tr>
<td>Study</td>
<td>Institution</td>
<td>Students</td>
<td>Intervention Details</td>
<td>Outcome</td>
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<tr>
<td>Read &amp; Rushton 2012</td>
<td>University Hospital of North Staffordshire, UK</td>
<td>Nursing students (n=38)</td>
<td>Interactive workshops partly facilitated by people with ID, plus health Toolkit</td>
<td>Workshop was reported to be enjoyable and informative. 80% of participants improved knowledge and awareness scores. Particularly positive feedback regarding spending time with people with ID.</td>
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<tr>
<td>Richard et al. 2005</td>
<td>Université d’Angers, France</td>
<td>Medical students</td>
<td>Teaching on disability, rotation in rehab dept</td>
<td>No improvement in attitude towards disabled people found pre- and post-teaching and clinical placement.</td>
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<tr>
<td>Sabharwal et al. 2000</td>
<td>Medical College of Wisconsin, USA</td>
<td>3rd year general internal medicine clerkship (n=129)</td>
<td>90 minute training workshop</td>
<td>OSCE with simulated patient showed intervention group performing significantly better than controls on all items, also positive student feedback on workshop.</td>
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<tr>
<td>Saketkoo et al. 2004</td>
<td>Tulane University School of Medicine, USA</td>
<td>4th year medical students (n=147)</td>
<td>3 hour workshop on disability skills and awareness, incl panel by PWD</td>
<td>Intervention group out performed controls on a standardized patient clinical case on communication and attitudes and knowledge, but not on examination. Project was well received by participating students.</td>
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<tr>
<td>Sanders et al. 2008</td>
<td>University of Kentucky, USA</td>
<td>Dental students (n=44)</td>
<td>Interactive multi-media virtual patient modules</td>
<td>Module simulated a patient encounter and was developed with participation from a deafblind patient. Significant gains in student knowledge and comfort.</td>
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<tr>
<td>Seccombe 2007</td>
<td>Univers College of</td>
<td>Nursing students (n=219)</td>
<td>Teaching followed by</td>
<td>Shift to empowerment focused curriculum based on social model of disability, but no</td>
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<tr>
<td>Study</td>
<td>Institution</td>
<td>Student Group</td>
<td>Clinical Placement</td>
<td>Social Construction of Disability</td>
<td>Disability Awareness Event</td>
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<tr>
<td>Shapiro 2011</td>
<td>University of California Irving Medical Center, USA</td>
<td>Preclinical students</td>
<td>Social construction of disability</td>
<td>Film of mixed ability dance stimulates discussion</td>
<td>x x</td>
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<tr>
<td>Shama et al. 2006</td>
<td>University of Miami, USA</td>
<td>Paediatric residents (n=63)</td>
<td>Childhood disability</td>
<td>Visits to families with disabled children</td>
<td>x x</td>
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<tr>
<td>Simpson et al. 2008</td>
<td>City University, London UK</td>
<td>Pre-registration mental health nursing students (n=35)</td>
<td>Experience of mental illness</td>
<td>Involvement with service users through online discussion forum</td>
<td>x x</td>
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<tr>
<td>Street et al. 2007</td>
<td>University of Bristol/University of West of England, UK</td>
<td>Pre-qualification medical and paediatric nursing students (n=160)</td>
<td>Childhood disability</td>
<td>Paired students visited disabled child at home and reported back to peers</td>
<td>x</td>
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<tr>
<td>Symons et al. 2009</td>
<td>University of Buffalo School of Medicine</td>
<td>Medical students</td>
<td>Health needs of pwd, comm,</td>
<td>x x x</td>
<td>Attitude survey before and after curriculum: control group of med students from another university. No</td>
</tr>
<tr>
<td>Study</td>
<td>Institution</td>
<td>Year</td>
<td>Medical Students</td>
<td>Community Resources</td>
<td>OSCE as part of assessment process</td>
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<td>Tandon et al. 2011</td>
<td>US</td>
<td>3rd</td>
<td>Ageing and health</td>
<td>Lecture by specialists followed by interactive panel with 6 older citizens</td>
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### Table 1 Continued

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<thead>
<tr>
<th>Study</th>
<th>Institution</th>
<th>Group</th>
<th>Program</th>
<th>Knowledge Improvement</th>
<th>Attitude Improvement</th>
<th>Notes</th>
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<tbody>
<tr>
<td><strong>Zwahlen et al. 2010</strong></td>
<td>University of New Mexico, US</td>
<td>Undergrad medical students (n=347)</td>
<td>Geriatrics education</td>
<td>Lectures and PBL, plus interview/assessment of older patients</td>
<td></td>
<td>98% positive student feedback. Knowledge improved significantly, attitudes did not improve significantly.</td>
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<td><strong>Dobson et al. 2002</strong></td>
<td>Horton Park Health Centre, Bradford</td>
<td>Care staff (n=9)</td>
<td>Communicating with people with profound ID</td>
<td>Interdisciplinary workshops using video</td>
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<td>Improvements in verbal communications, gaze monitoring and positioning.</td>
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<td><strong>Freudenthal et al. 2010</strong></td>
<td>University of Idaho, USA</td>
<td>Health professional volunteers (n=56)</td>
<td>Special Olympics Healthy Athlete events at World Winter Games</td>
<td>Screening and health promotion sessions</td>
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<td><strong>Jurczyk &amp; Kelly 2009</strong></td>
<td>Mountain Area Health Education Center, North Carolina USA</td>
<td>Community physicians (n=8)</td>
<td>Primary care for persons with developmental disabilities</td>
<td>Mini-fellowship</td>
<td>81.4% agreed better able to meet needs of clients with ID; 66% had made changes to clinical practice. Significant improvements in knowledge. Participation in training as</td>
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<td><strong>Melville et al. 2006</strong></td>
<td>University of Glasgow</td>
<td>Practice nurses (n=75)</td>
<td>Primary care needs of people with ID</td>
<td>Training pack and 3 hour training event</td>
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engage with students online and paid a small honorarium. All students and service users interviewed were overwhelmingly positive about the experience.

**Placements or visits with community facilities and organizations (nine papers)**

Service learning is an experiential learning approach where students learn by doing (Gitlow & Flecky 2005). Prior training can enhance the benefits of placement in community facilities, for example with older adults with dementia (Fruhauf et al. 2004), and thus improve learning of interaction skills. An Australian study where medical students spent eight weeks on placement in rural special schools led to better understanding of children with special needs (Jones & Donald 2007). In Leicester, medical students and social workers had four-week placements in community hospitals, together with training delivered by a Centre for Integrated Living (Anderson et al. 2010).

**Simulation exercises (four papers)**

A traditional way of changing attitudes is via simulation exercises – for example, spending time in a wheelchair or wearing spectacles that simulate sight loss (Crotty et al. 2000, Amosun et al. 2005) or wearing incontinence undergarments to engender empathy (Karlowicz & Palmer 2006). The goals are to develop interpersonal skills, increase empathy and educate about practical issues, such as accessibility (Crotty et al. 2000). While these experiences seem to be highly valued by participants, there is a risk of seeing disability in individualistic terms. If the main problems of disabled people result from poverty, prejudice and discrimination, then sitting in a wheelchair for half a day is unlikely to result in a full understanding, and may even distort perceptions.

**Clinical experience (nine papers)**

Symons et al. (2009) argue for the importance of introducing students to caring for patients with disabilities early in their career, and ensuring that disability is integrated throughout the curriculum and at every stage. They suggest that the skills acquired through caring for patients with disabilities are transferrable to other patient care and foster general professionalism. Markström et al. (2009) found that five-week clinical placements for students in healthcare professions reduced stigma associated with mental illness. Swiss dental students who were able to treat older people reported feeling less pity and frustration than German students, who could observe problems but not help (Nitschke et al. 2009).
Continuing education

In-service training has also been successfully trialled. For example, practice nurses in Scotland were trained in the primary healthcare needs of people with intellectual disabilities (Melville et al. 2006) with concrete outcomes. Interdisciplinary experiential training workshops delivered to care staff at a day centre for people with intellectual disabilities improved their communication and interaction with clients (Dobson et al. 2002).

Teaching modalities

Inter-professional education appears particularly appropriate for learning about disability, given that disabled people often engage with a multiplicity of different professionals (Anderson et al. 2010). Bringing together social work students with medical students, or nursing students with medical students, or a range of health professional students, has been effective (Street et al. 2007, Markström et al. 2009, Anderson et al. 2010, Anderson et al. 2011).

Innovative curricula drawing on the humanities have potential to illuminate and broaden the professional’s understanding of disability (Evans 2002, Kaptein & Lyons 2009). For example, an intervention using narratives of hearing loss enabled audiology students to think beyond technical issues and improved their listening skills (Berg et al. 2008). Other interventions have drawn on reflective writing (Westmoreland et al. 2009), cinema (Block et al. 2005) and performance (Kahtan et al. 1994, McClimens & Scott 2007, Shapiro 2011).

Outcomes of interventions

Impact of these interventions was generally assessed by pre- and post-intervention attitudinal change, tests of knowledge, and/or by student feedback (consistently positive, e.g. Crotty et al. (2000) found 96% positive feedback). There is a need for an updated instrument for measuring healthcare professional attitude (Lam et al. 2010). Across the included studies, significant improvement in knowledge was common, although this sometimes tailed off over time. However, it was sometimes harder to detect improvements in attitudes when the sole intervention was traditional teaching (Richard et al. 2005, Seccombe 2007, Zwahlen et al. 2010).

Across the studies, the most positive evaluations were of opportunities to meet disabled or older people, associated with positive change in attitudes (Gitlow & Flecky 2005, Denton et al. 2009, Moroz et al. 2010, Anderson et al. 2011, Read & Rushton 2012), even when only conducted online (Simpson et al. 2008). Spending time in clinical settings (Markström et al. 2009) is also positively valued, but does not necessarily lead to attitudinal change (Richard et al. 2005, Seccombe 2007).

If students are to take disability seriously, it needs to be part of their assessment. Good practice is to use Standardized Patient Clinical Cases (Saketkoo et al. 2004) or Objective Standardized Clinical Encounters (Crotty et al. 2000, Sabharwal et al. 2000, Symons et al. 2009) to assess student learning, with disabled people being trained as standardized patients.

The best measure of effectiveness would be patient-reported satisfaction with health professionals who had undergone a particular form of training. Such longitudinal impact evaluations appear to be absent from the literature.

Discussion

There are many different ways of teaching students about disability, and the included papers often do not give a clear impression of the content and philosophy underlying the interventions. Medical educators themselves may need to examine their own attitudes and understandings (Gitlow & Flecky 2005), particularly tutors who are responsible for guiding clinical education.

Achieving a holistic understanding requires meeting healthy disabled and older people and learning from them. Half of the interventions did involve direct contact in a non-clinical setting. However, only 16% of the interventions studied in this paper entailed the disabled person acting as an expert, teaching the students. The greatest learning seems to come when students are encouraged to critically reflect on their experiences (Crotty et al. 2000, Duggan et al. 2009), including their emotional reactions to disability. One-off interventions or lectures are less effective than immersive workshops or combinations of activities. The ‘spiral of learning’ approach, where a range of strategies are used across different years of the medical school curriculum, reinforcing learning points, seems likely to deliver the best outcomes (Corwin et al. 2006, Symons et al. 2009), particularly given that disability is complex and multi-faceted.

Obstacles to improving teaching about disability include clinical overload (Dehaim et al. 2008) and time pressures. Elaborate initiatives may be demanding in terms of preparation and/or delivery (Anderson et al. 2010, Corwin et al. 2006, which raises sustainability questions (Burbank et al. 2006). Innovation in disability teaching may rely on one member of the education team having the necessary knowledge and enthusiasm.

This review included nearly 50 papers describing more than 90 different teaching and learning activities. While we cannot say definitively what
works best to improve health professional knowledge and attitudes in the area of disability, it seems clear that learning from success and widespread adoption of good practice is required, if the ambitions of the Convention on the Rights of Persons with Disabilities are to be achieved.

Note
Tom Shakespeare was responsible for the study design, analysis and writing up of this paper. Ira Kleine conducted literature research and reviewed the paper. The review was conducted whilst Tom Shakespeare was a staff member at the World Health Organization and Ira Kleine was an intern at the World Health Organization. The authors alone are responsible for the views expressed in this paper, and they do not necessarily represent the decisions or policies of the World Health Organization. Thanks to John Spencer for comments on the paper.

References


